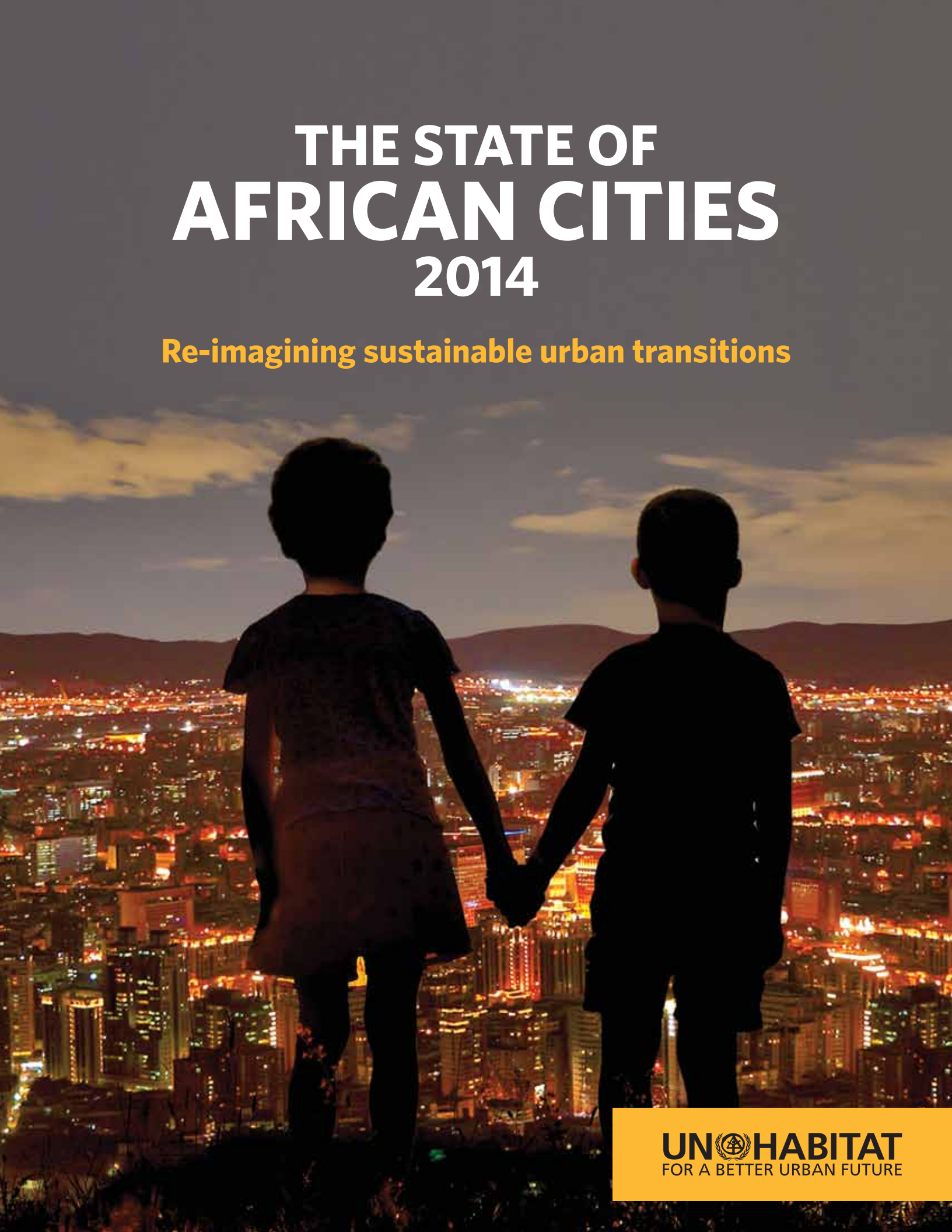
THE STATE OF AFRICAN CITIES 2014

Re-imagining sustainable urban transitions



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FOR A BETTER URBAN FUTURE

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Re-imagining sustainable urban transitions

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UCLG AFRICA
United Cities and Local Governments of Africa
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Foreword by UN-Habitat

It gives me great pleasure to present *The State of African Cities 2014: Re-imagining sustainable urban transitions* - the third publication on Africa in UN-Habitat's rapidly-expanding regional State of the Cities report series.

The first African regional report (2008): '*A framework for addressing urbanization challenges*' provided a general overview of housing and management conditions in African cities and set information benchmarks on city level data and trends. The second publication (2010): '*Governance, inequalities and urban land markets*', expanded the baseline views of the 2008 report, analyzing urban governance modalities in the light of newly-emerging urban spatial configurations, exposing inequality in African cities and examining how African urban dwellers access land.

This third State of African Cities report was realized in close cooperation with ICLEI - Local Governments for Sustainability - Africa and United Cities and Local Governments Africa (UCLGA). It attempts to take analysis to a next level in the context of the globally changing conditions. It seeks to stimulate discussion on the need for radically different, re-imagined development visions to guide sustainable urban and other transitions in Africa over the decades to come.

African cities are often analyzed from a perspective that sees urbanism and urban living as progressing towards the example set by Western paradigms. But the conditions and circumstances that prevailed in the world's industrialized societies during the 20th century - and which shaped their cities' form and function - are no longer the same in today's world. Global climate and environmental change, as well as increasing awareness of water, food or energy insecurities, for instance, are now starting to shape our understanding of the dire need for new visions on what good urban management for the 21st century entails.

The overarching challenge for Africa in the decades to come is massive population growth in a context of wide-spread poverty that, in combination, generate complex and inter-related threats to the human habitat. The main premise of this report is that successfully and effectively addressing the vulnerabilities and risks to which the African populations are increasingly being exposed may, perhaps, require a complete re-thinking of current urban development trajectories if sustainable transitions are to be achieved.

Urban development decisions typically involve vast capital layouts and, consequently, can lock cities or even entire countries in a particular development path. In other words: today's decisions and interventions fix the parameters into a particular development direction for decades. Given the comparatively late onset of the urban transition in Africa, however, there exist real opportunities for embracing new urban paradigms that are more conducive to both the present and long-term needs of African cities and nations.

Greener solutions, climate change adaptations, vulnerability reduction, technological innovation, urbanization and the economic development of African cities all go hand in hand in this context. Whereas a 're-imagined African urbanism' would undoubtedly embrace some parts of the 'Western urban model', Africa now has an opportunity to also seek policy and strategic directions that incorporate long-term sustainability for social, environmental and economic development that will better deliver than the imported urban paradigms have done so far.

This report, however, does not give ready-made solutions. Cities are simply too individual and specific in their needs and vulnerabilities for standardized solutions. Rather, the current report analyses the emerging challenges and risks to which urban and rural Africa are being exposed with a view to facilitating discussions at regional, national and local levels on how best to address the challenges ahead and apply solutions that are innovative, location-specific and effective. Not a single African city today is exempted from distinct and often multiple vulnerabilities. Careful consideration of the intervention options available and, indeed, the courage to embark on a 're-imagined African urbanism' is what is called for in this report.

One thing is of particular importance in this context. Cities are not stand-alone entities. They are all part and parcel of often shared geographical, social, environmental and political contexts. Given that many of the challenges ahead are of a trans-boundary nature, this report seeks to stimulate local, national and regional cooperation among African cities and nations to re-imagine shared approaches to urban development and capture the most effective interventions to facilitate sustainable urban and other transitions in Africa.

Joan Clos
Under-Secretary General, United Nations
Executive Director, UN-Habitat

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Contents

Executive Summary

Nelson Mandela Bridge, Johannesburg, South Africa. **©Ehrman Photographic/Shutterstock.**

The current report is the third in The State of African Cities series. The first, *The State of African Cities 2008: A framework for addressing urban challenges in Africa*, was explorative and analyzed general urban conditions and trends and identified benchmarks. It drew the attention to very rapid future growth of African cities and towns; to the apparent inability of local authorities to deal with present, let alone future urban population increases; and to the need for Africa to prepare for new urban configurations very different from the traditional concepts that see a city as an urban area within a clearly defined boundary and governed by a single municipal authority.

The subsequent report: *The State of African Cities 2010: Governance, inequality and urban land markets*, tried to answer some of the many questions raised by the 2008 report. The 2010 version concluded that inadequate urban governance policies and low urban institutional capacities; high levels of inequality among different socio-economic population strata; as well as limited options for the poorer Africans to access urban land, all contributed to urban slum proliferation and would continue to do so, unless vigorously tackled. The 2010 report further showed that guiding urban growth in Africa will require the establishment of realistic and sustainable national urban development policies; enhanced urban management capacities within cities and towns of all sizes; better distribution of urban populations over different settlement-size classes; and significant improvements in broad-based access to urban livelihood opportunities. The report also advised that governments should urgently reduce the land, housing, services and mobility-demand pressures on their highly primate capital cities by seeking more balanced national urban hierarchies.

Many African governments have since started to promote new urban developments away from their major population concentrations. Satellite cities are being established to guide population pressure away from the capitals, while urban

development corridors are being promoted to geographically disperse both economic activity and populations. These interventions are showing that important notions of urban geography are becoming priority areas in a good number of African nations.

This 2014 Africa report attempts to take insights one step further. Whereas the urban and demographic developments of the past decades had already presented African nations with major challenges in their attempts to provide socially just, sustainable and well-serviced living and working environments for its rapidly urbanizing populations; it is now becoming clear that the predicted or already felt impacts of proceeding climate and environmental change profoundly exacerbate the vast complexity of these challenges.

As shown in the sub-regional sections of this report, it is not only Africa's largest urban population concentrations that are becoming more prone to vulnerabilities and risks; these are actually increasing for all African settlements. This will add to the already significant social, economic and political hazards associated with Africa's still pervasive urban poverty. The combination of demographic pressures, rapid urbanization, environmental and climate change now appear to reinforce a host of negative urban externalities. At the same time, the prevailing development concepts applied to Africa's rapidly expanding urban areas seem incapable of attaining the post-independence visions of human development and prosperity for all.

Upon their independence, African nations embraced a variety of imported development models. It is now evident that all these models have failed to achieve the goals that African nations had set themselves. With hindsight, that is, perhaps, unsurprising, since these development concepts were derived from conditions prevalent outside Africa and were conceived at a time and under conditions that were vastly different from today's African realities. Likewise, the urban development models of post-independence Africa were based on concepts, philosophies and conditions that prevailed in the advanced economies during the mid-20th century. It is now clear that these approaches are of limited use to Africa, given today's very rapid urbanization, limited urban-based industries, high fossil fuel costs, rapidly diminishing resource bases, fiercely competitive global economic and financial environments, as well as the increasingly-felt threats and impacts of environmental and climate change.

As outlined in Section 1.1 of this report, Africa is in the midst of simultaneously unfolding major transitions in its demography, economy, politics, technological development and environments. These seem to indicate that Africa's approaches to urbanism need major rethinking if these transitions are to lead to better and more broad-based human development.

Section 1.2 of this report argues that, over the past decades, Africa has experienced a shift in the incidence and nature of insecurity, conflict and violence. Inter-state conflict has significantly declined. At the same time, however, urban insecurity and violence have notably increased. With the urban areas envisaged to lead Africa's economic, social and technological transitions, increased urban insecurity may have deeply negative impacts on the international investment flows required for the sustained economic growth that could produce the much needed urban-based employment generation for Africa's young population cohorts. Failure to address urban insecurity could create a self-sustaining spiral of violence fed by disenfranchised, unemployed urban youths.

Ubiquitous urban poverty and urban slum proliferation, so characteristic of Africa's large cities, is likely to become an even more widespread phenomenon under current urban development trajectories, especially given the continuing and significant shortfalls in urban institutional capacities. Since the bulk of the urban population increases are now being absorbed by Africa's secondary and smaller cities, the sheer lack of urban governance capacities in these settlements is likely to cause slum proliferation processes that replicate those of Africa's larger cities. The new towns and satellite cities now being established to relieve pressures on the largest African urban concentrations will also add to further urban slum proliferation, because these new towns almost exclusively cater for the residential needs of higher-income groups. Consequently, there is near certainty that these new towns will soon be surrounded by the informal accommodations of the low-income labour needed to service these new cities.

From all these trends it is increasingly clear that it would be imprudent for Africa to continue applying urban developmental concepts that neither serve its interests nor that can be sustained in economic, social, political and environmental terms. Therefore, this report argues for a radical re-imagination of African approaches to urbanism, both to strengthen the positive impacts of Africa's current multiple transitions and to improve urban living and working conditions.

Africa's population is still well below the 50 per cent urban threshold. This implies that a major reconceptualization of its approaches to urban development can still be undertaken. Given the rapidly changing global conditions, especially those associated with environmental and climate change, looming resources scarcity and the dire need to move towards greener and more sustainable development options, Africa has the opportunity to take a global lead in innovations towards greener, healthier and more sustainable urban societies.

The aim of this third State of the African Cities report, therefore, is to provoke discussion at the highest levels about the desirable redirection of Africa's ongoing urban transitions. However, this report does not give ready-made solutions. Each region, nation, city and locality is different and sustainability innovations must be tailored to specificities that vary between localities and over time. Urbanization, industrialization, sustained economic growth and broad-based human development feed on each other and, under correct guidance, can become mutually reinforcing. For the latter to happen, Africa has few realistic options other than a profound reimagining of what exactly constitutes the road towards sustainable urban transitions.

Sub-regional Summaries

Northern Africa

Northern Africa is highly urbanized, with most of its cities unevenly spread along its Mediterranean coastline and the Nile Valley and Delta. The estimated 11-million population of Cairo, a megacity, is projected to grow at an annual rate of at least two per cent until at least 2020.

Northern Africa's cities have been the scene of many dramatic events since 2011, characterized as "The Arab Spring", a period of social and political struggle that is not yet ended. Whatever the political and religious overtones of these upheavals, at their root lay the failure of political leaders to cater adequately for the needs of their large, young and mostly urban-based populations. The imperative for new governments will remain the provision of responsive urban governance and affordable housing alternatives for large numbers of hitherto marginalized urban youth. It is also crucial that Northern African cities deliver gainful urban-based employment opportunities in line with the demands of the young urban masses. This is essential to an economic recovery plan as Northern African economies are slow to recover from the effects of the uprisings in Egypt, Libya and Tunisia and since continued unrest will reduce the chances for resumed economic growth. Recent upheavals have also drawn attention to the needs of secondary cities where much of the Arab Spring was incubated.

The renewal of Northern Africa's historic city centres forms part of the plan to revive tourism revenues, which dropped drastically in the wake of the violent political unrest and the global economic downturn. This does not, however, constitute the type of urban renewal that will contribute to improved living standards for the urban poor.

Climate change, projected to exacerbate existing desertification and water stress, constitutes a major threat to Northern Africa's urban populations. The negative effects on agriculture will increase the need for food imports, with adverse effects on regional balances of payments. This might even restart the rural-urban exodus that seemed to have abated some years ago. Northern Africa's cities are largely dependent on the recharge of huge aquifers under the Sahara Desert, but these groundwater sources are being depleted. Along the Nile Valley the effects of climate change are expected to be particularly severe and, according to some projections, potentially catastrophic. Urban water infrastructures must be rehabilitated and maintained to eliminate unnecessary wastage and more investment in wastewater treatment and reuse is essential.

Climate change will render most of Northern Africa's cities more vulnerable to disasters associated with extreme weather patterns, especially flooding, while desertification presents a threat to Sudan's rural economy and food production. Some governments have already responded by framing plans taking these threats into account. Careful monitoring and regional cooperation will help anticipate threats as they emerge and allow for exchange of ideas and information. The Nile Delta requires special attention as it is especially vulnerable to inundation and saltwater intrusion. On the other hand, Northern Africa's climate offers immense opportunities for the generation of renewable solar and wind energy, and exploitation of these has commenced.

In general, Northern Africa's systems of urban governance remain too inflexible to respond to popular demands with the necessary speed and agility. Well-established networks of bureaucratic power and privilege have become entrenched to a degree that makes their replacement difficult, even in the face of massive unrest. In this context, the realization of the types of innovation and popular involvement in urban planning that might solve the problems of the region's city dwellers remain a remote prospect. The financing of urban policy will also be difficult until accurate urban data are available and decentralized tax collection is organized in an equitable manner. Inequality and informality remain rife, despite claims by Northern African governments that social housing projects have significantly reduced the proportion of slum settlements. In part, this reflects a general weakness in formal (and informal) institutions and a need for systems of land management and housing acquisition unencumbered by bureaucracy, nepotism and inefficiency. It is encouraging that public debate is moving towards accepting the permanence of informality, focusing instead on ways in which the marginalized can be involved in decisions affecting their lives and seeking to provide services to all urban dwellers, regardless of socio-economic status.

Public transport is receiving increasing attention in Northern African cities, which suffer from congestion and pollution caused by massive numbers of private motor vehicles. Cost-effective and energy efficient mass public transport systems are essential to achieve the internal social synergies vital to the health of the urban organism.

The almost exclusively urban political pressures that exploded into the Arab Spring may have opened the way for thorough debate about the future of the region's urban project. Urban youth has made its political presence felt and its demands will be neglected at some peril by whatever governments eventually emerge from the turmoil. Similarly, the Arab Spring and its ideological discourse have placed gender issues at the centre of the discussion on the role of Northern African women in public life. Although networks of political and economic power may have survived the fall of discredited governments, even they must now take into account the changing social face of the region. Employment, food and shelter will not be provided in sufficient measure to the burgeoning numbers of urban youth eager to set up their own households unless there are radical departures from the prevailing approach to urban planning. Nor will prestige "modernizing" projects solve the current crisis, even if they are financially viable, which is doubtful under the current economic climate.

▲
Algiers, Algeria. **©Pichugin Dmitry/Shutterstock.**

The most obvious path on which planners must embark is one that seeks to merge demands for sustainable urban development with the need for employment among Northern Africa's relatively well-educated youth. This is the problem that lies at the heart of the urban fragmentation, impoverishment and sense of helplessness that brought the youth onto the streets of the region's cities in 2011. Given continued unrest in the sub-region, it is likely that increasing pressures upon household budgets will result in further instability and protest.

Social stability, food security and economic growth are all dependent upon water. Northern African countries are faced with regional water scarcity challenges, over which conflict and contestation are commonplace. Regional agreements over the use of aquifers, underground and above-ground rivers are critical to ensuring peace, as evident in the case of the Nile's water resources, which sustain the lives and livelihoods of a wide range of countries. These agreements should include incentives for sustainable water use, especially in countries where unsustainable water use patterns prevail.

Western Africa

Western Africa, the most rapidly urbanizing sub-region in Africa after Eastern Africa, has very high, albeit decelerating, city growth rates. Data discrepancies regarding national levels of urbanization, as well as the dominant scales of urban growth, indicate significant gaps in urban data availability and reliability in the sub-region. Nonetheless, it is clear that urbanization is the central spatial feature in Western Africa's development pattern. This is especially the case along the Western African coastline, which has been increasing in density of urban settlements and urban interconnectedness.

Economic activities conducted by small, informal sector actors, as well as larger formal actors, are mediated through urban agglomerations along corridors, which extend across borders and sub-regions. Sub-regional inter-urban densification, facilitated by urban growth, is hence critical to the growth of the sub-region, not just in primate cities but also in secondary and smaller cities, which connect the rural hinterlands of the sub-region to the economies of its major metropolitan areas.

Western Africa is a populous sub-region, and its large commensurate consumption potential has not gone unnoticed by global markets. Emerging urban middle classes in the sub-region are key to sustaining growth and foreign direct investment. At the sub-regional and national scales, economic growth is largely driven by extractive activities in the minerals and energy sectors and agriculture, whereas tertiary sector activities dominate urban economic growth

Recycling in Ouagadougou, Burkina Faso. **©Roman Bonnefoy.** Licensed under the GNU Free Documentation License.

profiles. Nonetheless, high proportions of the people living in the sub-region continue to live on less than USD 1.25 per day and a sizeable floating middle class indicates the overall vulnerability of Western African countries.

Poverty, informality and inequality are intensified in cities, which consequently host densely populated slums and informal settlements. Informal service provision, trade and employment persist as a central feature of Western African cities. The high proportion of unemployed urban youth is a major cause for concern but also an opportunity for the sub-region. Supporting youth employment, education, entrepreneurship and innovation, skills development, vocational training and apprenticeship programmes can play a major role in stabilizing this demographic as an important labour pool and consumer base in the sub-region. Improving access to, and inclusion in, minerals and energy sector organizations is also necessary in this respect. At broader scales, there is a need for inclusive economic growth strategies that can minimize inequality levels and stimulate cash-flow and economic activities and employment where they are most needed.

Lack of institutional capacity manifests in the inadequacy of state systems and bureaucracies to cope with public demand for services in general terms whether infrastructural or services-oriented. Informal and private sector provision fills the vacuum left behind by the lack of service provision. While governance authority and functions have largely been decentralized to local authorities, fiscal decentralization has been slow to follow suit. With large proportions of the urban population residing in informal settlements and slums, the ability of local authorities to collect and maintain revenues is low. This renders local authorities unable to provide basic services; address needs of urban citizenry; or plan effectively to accommodate present and future urban growth patterns. Lack of regional and local urban infrastructure hampers sub-regional economic growth and development. Key regional infrastructure deficits in logistics and transport, port infrastructure, information and communications technologies (ICT) and energy, persist to the detriment of efficient storage, transportation of goods and people, etc. The scale of investment required to meet infrastructure deficits and future needs provides a challenge that demands regional and international cooperation. The same will also be necessary to successfully tackle urban resource pressures and threats like climate change and associated natural disasters.

At sub-regional scales, infrastructure development programmes and projects, such as the West African Power Pool, are attempting to address key challenges in improving flows and efficiencies within and between cities and countries in the sub-region. Regional agencies such as the African Development Bank are playing a key role in funding infrastructure development. China is also playing a key role in road, rail and port infrastructure development projects. At local scales, infrastructure and technology development plans need to cater for context-specific opportunities and requirements such as the need for low-cost, decentralized solutions that can be deployed and maintained with low levels of skills and training. Such approaches are critical to ensure that services reach the majority urban poor. Bulk infrastructure deployments also need to address the needs of informal settlement and slum dwellers.

Inter-generational changes signify a departure from traditional modes of identity construction. This is especially the case for the urban youth as increased levels of migration to developed countries, as well as access to global cultural and identity markers, combine with local cultural changes to produce new, more plural conceptions of personal and group identity.

Current and projected climate change impacts in Western Africa take on two broad spatial dimensions. Northern parts of the sub-region, which border the Sahel, are experiencing southward migration of the semi-arid Sahel. To the south and south-west of the region, along the coastal belt, the vulnerability of dense urban corridors and agglomerations to climate change-related pressures such as flooding, storm surges, sea-level rise, saline intrusion and coastal erosion is projected to increase. Temperature and precipitation changes (i.e. seasonal changes as well as changes in frequency and intensity of precipitation events) are likely to make food insecurity a real threat to the sub-region.

Conflict and instability also characterize the sub-region, with climate and environmental pressures often increasing religious and ethnic conflicts in the Sahel, placing additional pressures on cities to absorb conflict refugees and internally

displaced persons. Within cities conflicts over belonging, indigenous claims to land ownership, trading rights, as well as religious differences, manifest in contestations that can at times turn violent and where foreign refugees and economic migrants are targeted.

Eastern Africa

Eastern Africa is the world's least urbanized but fastest urbanizing sub-region. By the end of the current decade its urban population will have increased by 50 per cent and the total number of urban dwellers in 2040 is expected to be five times that of 2010. It follows, therefore, that Eastern Africa will face huge challenges associated with massive urban population increases; monumental new and additional demands for the provision of adequate and affordable housing and urban services; and, perhaps most importantly, urban-based income-generation opportunities.

Impacts of continued rapid growth of Eastern African primate cities include acute housing shortages, traffic congestion, pollution and uncontrolled peri-urban sprawl. Significant interventions are currently under way to redevelop existing urban areas and/or establish satellite cities at some distance from the capital to geographically disperse urban population and economic growth. Those in Kenya, Tanzania and Uganda, for example, have already sparked fierce public debate around matters of equity. Although Eastern African governments should be commended for their renewed attention and commitment to urban planning to address the unfolding urbanization processes in the region, catering preferentially for the residential and office needs of the wealthier sections of urban populations is likely to backfire. The needs of the poor should be incorporated through equality- and human rights-based urban interventions.

In terms of regional economic vulnerabilities the sub-region's mining potential remains unrealized and the agricultural sector is far more important. The latter has not been severely impacted by the global financial crisis, but is extremely vulnerable to climate change impacts. Prospects offered by the recent discoveries of hydrocarbons in Eastern Africa promise a radical change in the macroeconomic fortunes of the countries within whose boundaries, or waters, they fall.

One of the most important regional projects has been the resuscitation of the Eastern African Community in 2000. This has subsequently expanded to include Burundi, Kenya, Rwanda, Tanzania, Uganda and South Sudan, while Malawi may be considered for future membership. Comprehensive, sequenced road and rail plans have been advocated to link Eastern Africa's economic centres, in effect transforming the whole region into a coastal economy and liberating much of it from many of the constraints and expenses associated with being landlocked. The success of these plans could obviously have a transformative effect on the overall shape of Eastern Africa's urbanization patterns.

The region's cities exhibit high levels of poverty and inequality and fast growth of slums and informal settlements. Against a background of high levels of literacy and political engagement this may lead to greater contestation with the state in respect of greater political change that goes beyond service delivery concerns.

Climate change increases various threats in a sub-region where economies are vulnerable due to their dependence on smallholder agriculture and pastoralism. The countries of the Horn are particularly vulnerable to deteriorating conditions in an already marginal environment. Further consequences of food insecurity and inter-communal violence contribute to internal displacement and refugee flows, many of these towards "emergency" informal settlements, which soon become established as informal urban communities. Coastal cities are particularly vulnerable to the effects of climate change, from rising sea-levels and extreme weather events that threaten fragile physical defenses as well as the eco-systems that draw international tourism. Inland cities too, experience water shortages associated with periods of more prolonged drought, which also have a severe effect on hydropower production upon which the sub-region's energy supply is heavily dependent.

Water and energy are two of the areas in which the most pressing need for regional integration has been felt. The Nile Basin Initiative and Lake Victoria Basin Commission are two of the principal mechanisms through which regional collaboration has been sought, and these have contributed immensely to understanding the cross-border impact of policy decisions on irrigation, power and urban water supply.

It is important, on the other hand, not to allow the imperative of regional cooperation to create a planning environment in which an obsession with macro-projects comes to dominate urban thinking. As it is, urban planners in Eastern Africa are heavily influenced by the normative orientations of urban planning in the Global North. Yet the direct transplanting of the master planning approach into Eastern African planning contexts ignores the fact that the majority of growth in Eastern African cities occurs in slums and informal settlements. In such circumstances master planning may directly contribute to further social- and spatial marginalization or exclusion from the urban fabric.

Building regional coherence around an environmental agenda for Eastern African cities, while desirable, may prove difficult to realize in the short term. Keeping accurate records is perhaps a first step in quantifying and analyzing the scale of the challenge. Formalizing informal processes, and building in sufficient checks and balances to ensure that exploitation and corruption is minimized, are key priorities. Achieving this may require a radical decentralization of powers at local, municipal levels to enable community level self-organization and appropriate self-regulation of these processes. This needs to be accompanied by a concomitant devolution of controls over revenue collection and expenditure. It is important to reconsider how bottom-up systems of governance might be implemented in the short and medium terms, with a view to assimilating them into larger formal systems of governance in the future. Failing the introduction of such an approach,

Eastern Africa's informal urban areas will detach themselves even further from effective government control, and pass under the influence of local power structures that may come to constitute a threat to the centre of the city and, ultimately, the state itself.

A variety of agents for change exist in Eastern African cities, among them the youth who are mobile and to a large degree self-organized within peer and other groups. Harnessing this huge existing potential for social change is the answer, because fighting it will reproduce the same oppressive and stagnant conditions that could lead to widespread, violent protests and all-out insurrections similar to that unfolding in the countries of Northern Africa and the Middle East. Their integration into formal and informal systems of governance, and the right to participate in constructing their own future is crucial to reversing the conditions to which the youth are currently subjected, and restricted by, in Eastern African urban society.

Central Africa

Although Central Africa is rapidly urbanizing, the sub-region is not expected to reach a region-wide urban majority until around 2030. The Central African Republic and Congo (DR) are expected to reach urban majorities just before 2040 and Equatorial Guinea at around 2045. With an estimated present day population of over 9 million, Kinshasa continues to dominate Central Africa as the sub-region's largest and fastest growing urban system. Kinshasa is projected to become Africa's third mega city before 2015.

Most capital cities in the region function as hubs for complex international financial transactions as well as command posts for the management of multinational organizations. Mass investments in infrastructure building, in the service sector and in the tourism industry, have helped to lower the rate of unemployment in some of the sub-region's cities. However, despite economic growth that many countries in the sub-region have noticed in the last few years, most urban economies in the sub-region have started to struggle as they depend heavily on the export of mining, especially the exploitation and export of copper, diamond, oil and timbers. Since the deepening of the global financial crisis, exports of copper have slowed down, as China and India have reduced their imports.

Despite Central African mineral and oil wealth, the sub-region still lacks adequate industry to process minerals and oils locally. Besides considering options to process more of the extractions in the sub-region, its governments need to consider economic diversification strategies to counter negative impacts of future oil price fluctuations. These strategies should be accompanied by improved systems for tax collection from multinational and international corporations that are exploiting the sub-region's commodities.

Globalization and new technologies have significantly changed the way cities and countries in Central Africa trade with the outside world, especially with countries in the West and the Far East, but trade within the sub-region remains low. This is not least due to lack of road and railway infrastructure and points to the need for more regional integration.

The climate of Central Africa is humid-tropical with distinct dry and rainy seasons. Historically, Africa has always faced a variable climate with extreme and severe weather events. It is, however, becoming increasingly clear that Central African cities are being impacted by increasing climate variability, for example floods, sea-level rise, saline water intrusion, heat waves and drought. Climate change is projected to induce agricultural losses, increasing the threat of food insecurity. Deforestation, too, is a major concern for all countries in the sub-region since they are losing large tracts of forest and tons of soil every year and experience declining biodiversity.

Central African cities need to invest in establishing, implementing and entrenching green energy and green growth initiatives and policies. In addition to bounteous mineral resources, Central African countries are endowed with significant hydroelectric and solar power potential, as well as other possibilities to produce green energy that could boost development.

Although Central Africa is generally rich in oil, minerals, water, forest and biodiversity, cities in the sub-region are characterized by deep poverty and inequality, corruption, as well as a high number of slums and informal settlements. Urban governance in Central Africa is beset by deep institutional failures, which are partly catalyzed by, and result in, informal land- and housing acquisition. Recent decentralization efforts have led to additional urban governance problems with municipal institutions not reaching the poor urban majorities due to inefficiency, over-bureaucratization, corruption and nepotistic practices that directly or indirectly give preference to the wealthy and politically connected. Municipalities are largely unable to collect revenues to finance their services. Private developers cater for the wealthy and lack of formal service provision renders the poor households particularly vulnerable to the increasing costs of water, energy, transport and food. Improving integrated urban service delivery should be key in planning for sustainable development.

Urban culture and identity in Central African cities are characterized by religiosity, a significant youth bulge, circular urban-rural migration, and long histories of conflict. Ethnic segregation persists amidst the diversity in people, languages and cultures found in Central African cities. African youth possess discursive power that will likely significantly drive urban social, political and economic trends and dynamics in the future. However, there are few platforms where youth can voice their condition, desires and hopes in Central African cities. Amongst the urban poor, women are perhaps the most significant social actors alongside the youth, yet support for the advancement of women in society is limited. Changing attitudes towards youth and gender interactions, sexual relations and HIV, matrimonial relationships, female education and employment, requires that men become a part of the process of social change in Central African cities.

Living conditions in Central African cities have been deteriorating for many years. Increased urban poverty in the region has economic, social and institutional dimensions

and it is the result of dictatorship, corruption and decades of negative growth throughout the region. Rising unemployment has been emerging as one of the most important challenges facing urban dwellers in the sub-region. However, new investments are reaching the region in tandem with revenues from new business opportunities, mineral wealth and other exports. Most Central African countries do have funds and access to technologies to vastly improve on existing deep urban poverty, massive slum proliferation and low quality of life for the majority of the urban dwellers. What they need is the will of their political leaders to invest in the welfare of their citizens.

Southern Africa

Southern Africa, the most urbanized region in sub-Saharan Africa, is projected to reach an overall region-wide urban majority around the end of the current decade. Nevertheless, in 2011, only Angola, Botswana and the RSA had urban majorities. The other countries, apart from Swaziland, are expected to reach that point by 2050. Urbanization has progressed unevenly, between and within countries, and only Lesotho recorded a decline in urbanization levels since 2001.

To some extent, the buoyancy of global mineral and oil prices due to Chinese and Indian demand, cushioned most of the region's economies from the worst vagaries of the world recession from 2008, although the current Chinese slowdown is rippling through the minerals sector. Capital cities, such as Maputo and Luanda, have been experiencing construction booms linked to foreign investment and increased trade. Key tourist centres, those with diversified urban economies and those cities, such as Cape Town, with innovative or distinctive niches in the world economy, have even experienced growing prosperity, despite persistent, sharp, intra-urban inequalities.

Southern Africa and its cities are extremely vulnerable to climate change impacts. Temperature increases and weather variability threaten to directly or indirectly disrupt systems critical to the survival of its cities. The sub-region is warming and increased droughts are likely in the future. It is helpful to distinguish between coastal and inland cities in terms of existing and expected principal climate change impacts and vulnerabilities and to prioritize the formulation of appropriate local responses. Flooding from sea level rise, coupled with increasingly severe and possibly frequent storm surges, and salinization of coastal aquifers are among the most prominent challenges facing coastal cities, whereas water shortages (especially in western parts of the region, in cities like Bulawayo, Gaborone, Windhoek and Upington), heat island effects and changing disease epidemiologies are key challenges for inland urban areas. As a result, some innovative measures are already evident.

With increased prevailing temperatures and changing rainfall patterns, food security is likely to become an increased concern across much of Southern Africa. Encouragement of non-polluting forms of urban and peri-urban agriculture and forestry may contribute to local food security, especially for some of the urban poor, enhance livelihoods and contribute to urban greening initiatives with climate change mitigation benefits. However, in many of the region's urban areas, this would require regulatory change, as part of a broader rethinking of inherited urban planning regimes to promote urban sustainability with greater equity and resilience.

Such reorientations would also help to reduce social and economic vulnerabilities and promote urban human security. More broadly, effective urban governance is crucial to ensure successful interventions aimed at climate change mitigation and adaptation since key greenhouse gas emission sources and many of the major impacts of environmental change are manifest in urban areas. Nevertheless, effective action requires multilevel governance, with local, regional, national and probably also supra-national authorities playing complementary roles in accordance with their respective powers. Political will and leadership at each of these levels is a prerequisite for appropriate outcomes.

Despite the region's economic success in terms of gross domestic product (GDP) growth, relative to other countries south of the Sahara, widespread inequality characterizes the primary condition of Southern African cities. Growth in the sub-region has typically resulted from urban economies but has failed to raise regional living standards and income levels as expected. Instead, rapid growth in GDP has rendered these urban societies vastly unequal and deeply fragmented.

While the percentage of people living in slums and informal settlements in Southern Africa is generally lower than the rest of the continent - except for Angola, Mozambique and Zambia - urban planning efforts in Southern African cities face key challenges in common with other sub-regions: urban sprawl; substantial housing backlogs; poverty and inequality; segregation; slum and informal settlement proliferation within city centres and on the urban peripheries; as well as inadequate infrastructure and service provision.

In turn, these have consequences for current urban governance regimes in the sub-region. These revolve around ensuring democratic participation; alleviating poverty and inequality; improving urban service provision; overcoming patterns of urban segregation; mitigating xenophobia and anti-migrant sentiments; coping with local unrest; achieving cohesion between dual formal and informal systems of governance, trade, service provision, e.g. transport; and improving the fiscal autonomy of local governments. To most of these, climate change adds another layer of complexity and vulnerability. One way forward is through multifaceted interventions aimed, for instance, at promoting more rapid and efficient public transport, thereby integrating urban areas more effectively and reducing greenhouse gas emissions by people switching from private vehicles.

Agents of change in Southern Africa are diverse, including the private sector and public private partnerships as well as civil society. The large youth bulge and high levels of youth unemployment constitute both a challenge and opportunity for the sub-region; that is a labour pool for growth and a potential base for political transition towards stronger democratic practices.

PART ONE

THE STATE OF **AFRICAN CITIES**

A view over Kenya's capital Nairobi from a high-rise construction site. **©Sven Torfinn/Panos Pictures**

1.1
A Continent in Transition

▲
Cairo, Egypt. Despite economic growth, the continent still experiences massive urban poverty. **©Manal ElShahat.** Licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 2.0 Generic License.

The 2000-2010 decade was one of major changes in Africa's developmental outlook - some say a turning point. Various statistical and other indicators appear to support increasingly positive perceptions of the new political and socio-economic opportunities for Africa in the decades to come, although they also indicate vast challenges. Africa is currently in the midst of a number of simultaneously unfolding and highly significant transitions, among them demographic, economic, technological, environmental, urban and socio-political. These transformations invite complete rethinking of current developmental trajectories, so as to further facilitate and sustain Africa's strategic repositioning in the world.

Despite a feeble global economy, Africa's performance is promising, with an increasing number of nations progressing towards high rankings among the world's emerging economies. Domestic economic performance has been particularly robust in Angola, Ethiopia and Nigeria; while Côte d'Ivoire, Ghana, Kenya, South Africa, Tanzania and Uganda are all experiencing sustained growth. However, not all African economies have performed well, especially those affected by continued or renewed social unrest, civil strife or conflict. In demographic terms Africa is growing rapidly and, where economic performance allows, emerging middle-classes are now starting to create sizable consumer markets (see Box 1.1). Booming cities are stimulating many nations' construction industries - a sector with a high multiplier factor. Despite significant economic growth, Africa still experiences massive urban poverty and other social problems. Therefore, the prevailing worldwide view that cities are engines of growth and human development may very well be challenged by the unfolding realities in Africa, unless this urban economic and general developmental progress is translated into more broadly shared well-being among nations' socio-economic strata.

In political terms, Africa is also in the midst of major

transitions with a growing number of democratically-elected governments. But the road to truly democratic governance systems often provides for a rough ride as in the cases of Egypt, Libya, South Sudan, Tunisia and Zimbabwe. Continued post-independence statehood-formation is part of the ongoing transformations, with some African countries making steady strides forward while others have greater difficulty in shedding the label of a "fragile" or "failed state".

The accelerating urban transition - the shift from rural to urban population majorities - is, perhaps, the most decisive phenomenon since independence in most African nations. That is especially the case for its tropical middle belt where most of Africa's urban growth now appears to be taking place. Lagos, for instance, has recently joined the ranks of the world's megacities - Africa's second after Cairo - while Kinshasa is also rapidly approaching mega city status.

Climate and associated environmental change brings multiple and multifaceted impacts to bear on Africa, whether predicted or already experienced. Many aspects of this transition are still not fully understood and uncertainties about their future impacts remain. What is clear, however, is that climate and environment change-related vulnerabilities are on the rise throughout Africa, with higher frequencies and greater severity of cataclysmic events. Not a single African nation, city or village is exempt from the growing vulnerability associated with climate and environmental change. Because of their intense concentration of population, assets and functions, urban areas are particularly at risk from calamitous events.

Although these transitions obviously bring additional and new challenges, they should be interpreted as opportunities for deep review of African nations' policies and strategies. Indeed, the time is ripe for a rethinking of past and present development trajectory choices and for exploring new visions, interventions and adaptations in response to changing contexts. A bold re-imagining of how Africa could best guide these transitions requires careful consideration of all the options.

This report seeks to analyze the ongoing transitions, the associated challenges and the new opportunities they offer. It argues for entirely new policy development, suggests rethinking opportunities for integrated urban planning, infrastructure and technologies. The report also seeks to stimulate a review of the options for developing medium- and long-term strategies and the associated shorter-term interventions required at the local, national, regional and continental levels in response to the ongoing transformations. But every African region, nation, city and locality has its own specific contexts. Despite the consequential need for location-specific and tailored interventions, one of the more important arguments in this report is that there is also increasing need for cooperation - between cities, between countries and between the African sub-regions. Outcomes will be strengthened if African cities and nations plan their sustainable development courses in conjunction with supportive regional and continental perspectives.

The Demographic Transition

The latest data provided by the Population Division of the United Nations[1] reiterate that Africa is experiencing unprecedented population growth. Compared to previous assessments, the projected total population is higher than before, mainly due to new information obtained on fertility levels. In 15 high-fertility sub-Saharan countries, for example, the estimated average number of children per woman has recently been adjusted upwards by more than five per cent.[2] The total African population is projected to nearly double from around one billion in 2010 to almost to two billion by 2040 and may well surpass three billion by 2070 (see Figure 1.1).

These figures, however, are *projections*. They could change rapidly under unforeseen circumstances. Consequently, the farther into the future the less reliable projections tend to become. Moreover, there is no global agreement on Africa's demographic forecasts and some researchers have challenged UNDESA's data, as in the example of Western Africa (see Box 3.1 in Chapter 3). Therefore, demographic forecasts should be viewed with care. They are used in this report only for the broad policy guidance that can be derived from them with relative confidence.

Whether or not the UNDESA projections materialize as predicted, their broad implication holds that Africa - after Asia now the world's second most populated major region - is facing huge increases over the decades to come. Vast African population growth is a certainty; only the magnitude remains debatable.

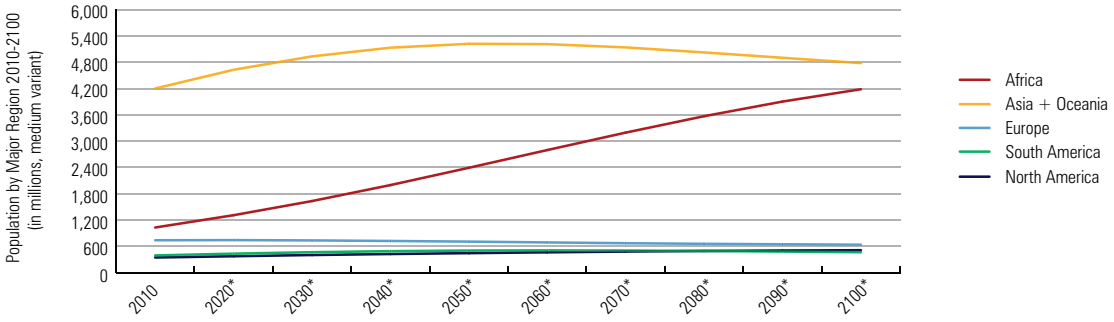
Africa's population growth trends do not yet have a foreseeable peak after which numbers will stabilize or decline. Projections indicate that by 2030 Africa's population will exceed that of Europe, South and North America combined. But Africa is a very large and a still comparatively sparsely populated continent. Therefore, policies towards more even geographical dispersal of future populations and livelihood opportunities shall be critical in the decades to come. The actual realization of such population distributions will depend on the rapidity of Africa's infrastructure expansion to unlock sparsely-populated areas, and its ability to create livelihood opportunities in these locales. These matters should receive high priority, because population densities are expected to increase quickly.

Forecasts for Africa indicate that average densities will increase from 34 to 79 persons per square kilometre between 2010 and 2050.[3] The critical question is whether these increased densities will lead to further concentration of people in Africa's already many large and very large urban areas or whether this growth will be dispersed over a broad range of geographically dispersed settlement-size groups. Policy changes will be required to guide Africa's rising urbanization levels and the desirable dispersion of population. Current and future demographic structures are also to be taken into consideration, because the population will remain young for decades.

The demographic dividend potential (a labour force that

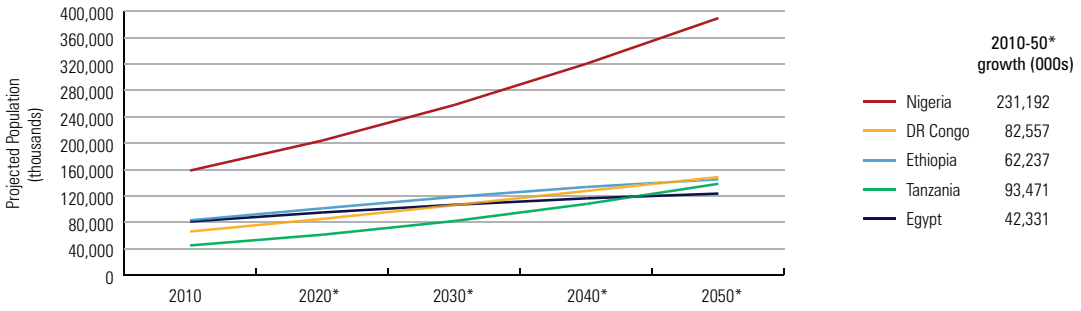
▲
Soweto township, home to approximately 40% of Johannesburg's population. **©Travis Lupick.** Licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 2.0 Generic License.

FIGURE 1.1: **POPULATION BY MAJOR REGION 2010-2100 (IN MILLIONS, MEDIUM VARIANT)**



Source: World Population Prospects: The 2012 Revision, UNDESA, New York, 2013, http://esa.un.org/wpp/Excel-Data/population.htm, last accessed 16 August 2013.
** Projections.*

FIGURE 1.2: **PROJECTED POPULATION DYNAMICS OF AFRICA'S FIVE MOST-POPULOUS COUNTRIES, 2010-2050 (THOUSANDS)**



Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York, 2012.
** Projections.*

is temporarily growing faster than the population dependent on it) of Africa's youth bulge is significant. The labour force is projected to reach 1.1 billion by 2040[4] by which time the continent is predicted to be more than 50 per cent urbanized.[5] This youth bulge may work either for or against Africa's urban societies. Although the potential to harness youths within formal economies exists, the possibility of them becoming impoverished forces of radicalization and conflict is also high. These youth bulges, as can be expected, are particularly numerous in Africa's more populous countries. Prudent economic, industrialization, labour and social policies will be decisive in determining whether the demographic dividend will become a cornerstone of Africa's development or a major socio-political risk.

The Economic Transition

In recent years, Africa's economic growth has seen real gross domestic product (GDP) increasing at a rate twice that of the 1980s and 1990s.[6] The spread of growth over economic sectors has been relatively uniform.[7] By 2020, 128 million African households are projected to have transited to "middle class" (see also Box 1.1), boosting consumption and spending potentials;[8] and by 2030 Africa's highest-performing 18 cities might reach a combined purchasing power of USD 1.3 trillion.[9] Projections over the longer term include growth of the middle class from 355 million people in 2010 (34 per cent of the total population) to 1.1 billion (42 per cent) in 2060,[10] exceeding that of China today.

However, these projections may be premature because, despite ten years of high economic growth continent-wide, around 50 per cent of Africans today remain at incomes below USD 1.25 per day, while only four per cent receive more than USD 10 per day.[15] Using the range of USD 10 to USD 100 per day, Africa constitutes a mere two per cent of the global middle class and has only one per cent of its purchasing power.[16] Clearly, far greater effort will be required to provide more and higher income opportunities for households in the lower-income strata, in addition to creating more livelihood options away from the largest cities. This is particularly the case for Africa's present and emerging "rentier states" whose economic performance hinges on extraction of one or more finite natural resources. In such states, the cities (and the capital in particular) already tend to be mere gatekeepers of financial flows and power. But, given increasing globalization, cities of rentier nations may in future be bypassed as the custodians of financial and decision-making powers.

Furthermore, whereas until recently broad consensus existed about the relationship between industrialization, economic growth and urbanization, a far deeper understanding is needed of what exactly drives aggregate urbanization trends in developing and emerging economies. A question being raised is: in such economies, does urbanization cause growth or is it the other way round? Recent research at the Asian Development Bank[17], which analyzed the correlations between urbanization and GDP-growth, provides new evidence on the impacts of economic growth, education and industrialization on the urbanization rates of developing and emerging economies. The study indicates that, although growth and urbanization feed upon each other, the strongest direction of causality is probably from industrialization to urbanization, rather than the reverse.[18] This finding could have major implications for African urban and industrialization policy debates.

A sustained African economic transition will hinge on achieving three important features. Firstly, given continuing global economic uncertainties, African economic development must become more self-driven by further exploration of existing and new technologies for raising domestic productivity and income generation. Africa must rapidly improve its social services, especially in its mushrooming cities, to create better working and living conditions as well as new economic opportunities for its young people who will have to carry forward the current economic momentum. This includes encouraging the return of Africa's diaspora brain drain which, in turn, implies the provision of more attractive urban living and working conditions.

Secondly, trade and investment flows within Africa, as well as between Africa and the world, will need to be further expanded. These strategic relationships must rise above mere international assistance and natural resource extraction. In the words of African Union Commission Chairperson Nkosazana Dlamini-Zuma: "No country can have donor aid as the mainstay of its development. We cannot wait for the first dollar to come from outside."[19]

Investments in road, rail and energy networks will be crucial to boosting Africa's urban economies; unlocking sparsely-populated areas for settlement and investments in agro-industrial and manufacturing enterprises; facilitating flows of people, commodities and services; connecting its many landlocked nations to the world; and assuring food, water and energy security for development.

Thirdly, more robust and sustained African economic development will require further nation- and institution-building; overcoming generally weak institutions and governance modalities; as well as promoting more effective democratic institutions for greater openness, less corruption in the management of public finances and other public interests, particularly in the extractive sector.

Africa's thrust towards industrialization must, however, take into account the roles that the inevitable urban transition will play in structural transformations. With a large, emerging, urban consumer class Africa should actively explore and embrace more diverse growth opportunities, especially where these can be decoupled from resource exploitation and ecological degradation.[20] This might include growing services sectors, for example, to establish value chains that cut across city and national economies at all levels. Growth trajectories should not blindly replicate the unsustainable development paths of many advanced countries.

The future is characterized by global resource constraints and inevitable higher costs of energy, water and raw materials, as well as variability and uncertainties introduced by environmental and climate change. It would be wise for

BOX 1.1: **DEFINING THE AFRICAN MIDDLE CLASS**

The African middle class has been broadly defined as those living on between USD 2 and USD 20 per day.[11] Currently, however, around 60 per cent of the middle class survive on between USD 2 and USD 4 per day. They are referred to as the "floating class". Their vulnerability to falling back into poverty due to slight changes in living costs is very high. The definition of lower and upper-middle classes is those with daily per capita consumption of USD 4 to USD 10 and USD 10 to USD 20 per day respectively.[12] The emerging African middle class is projected to grow from 355 million to 1.1 billion by 2060, constituting more than 50 per cent of households.[13] Over the past three decades (i.e. preceding 2010), this class grew by an average of 3.1 per cent (compared to a total average population growth of 2.6 per cent).[14]

The 60 per cent majority floating class indicates a fragile, yet emerging, phenomenon that requires significant developmental support. The attention of global investors and multinational corporations in the African middle class may be optimistic and consolidating this class as a majority phenomenon, especially in drastically unequal urban contexts, will require significant efforts to ensure socio-political and economic stability, alongside ensuring growth in investment flows.

Africa to seek and embrace strategies that promote decoupling of its economies from over-reliance on natural resources that exacerbates the preponderance of under-diversified economies. The growth in green technologies signals the world's emerging acknowledgement of global resource constraints and the need for low-carbon growth. Given Africa's predicted population expansion, the continent's role in resource efficiency and low-carbon growth will need to be significant, and is also a critical precondition if sustainable and sustained economic growth is to be achieved.

The Technology and Infrastructure Transition

African countries and cities are burdened by high infrastructure deficits and shortages in access to technologies and services. Poor transport infrastructures are responsible for 40 per cent of the logistics costs in coastal - and 60 per cent in landlocked countries. Road networks are particularly deficient, while rail systems are mostly poorly connected and maintained. Port cities require significant infrastructure upgrades, too. Low electrification persists, with 30 countries experiencing regular power shortages.

To maintain their growth momentum, African national and urban economies will require higher levels of economic diversification and, as resource depletion unfolds, more sustainability.[21] Such transformations demand careful and urgent reconsideration of all infrastructure and technology options available, including energy technologies, because present and future policy decisions shall lock African cities into investment patterns that will determine production and consumption levels for decades. Future competitiveness, productivity, consumption and sustainability are intimately linked to these technology and infrastructure decisions. This is particularly the case where large-scale infrastructures for commodity transport and population mobility are concerned.

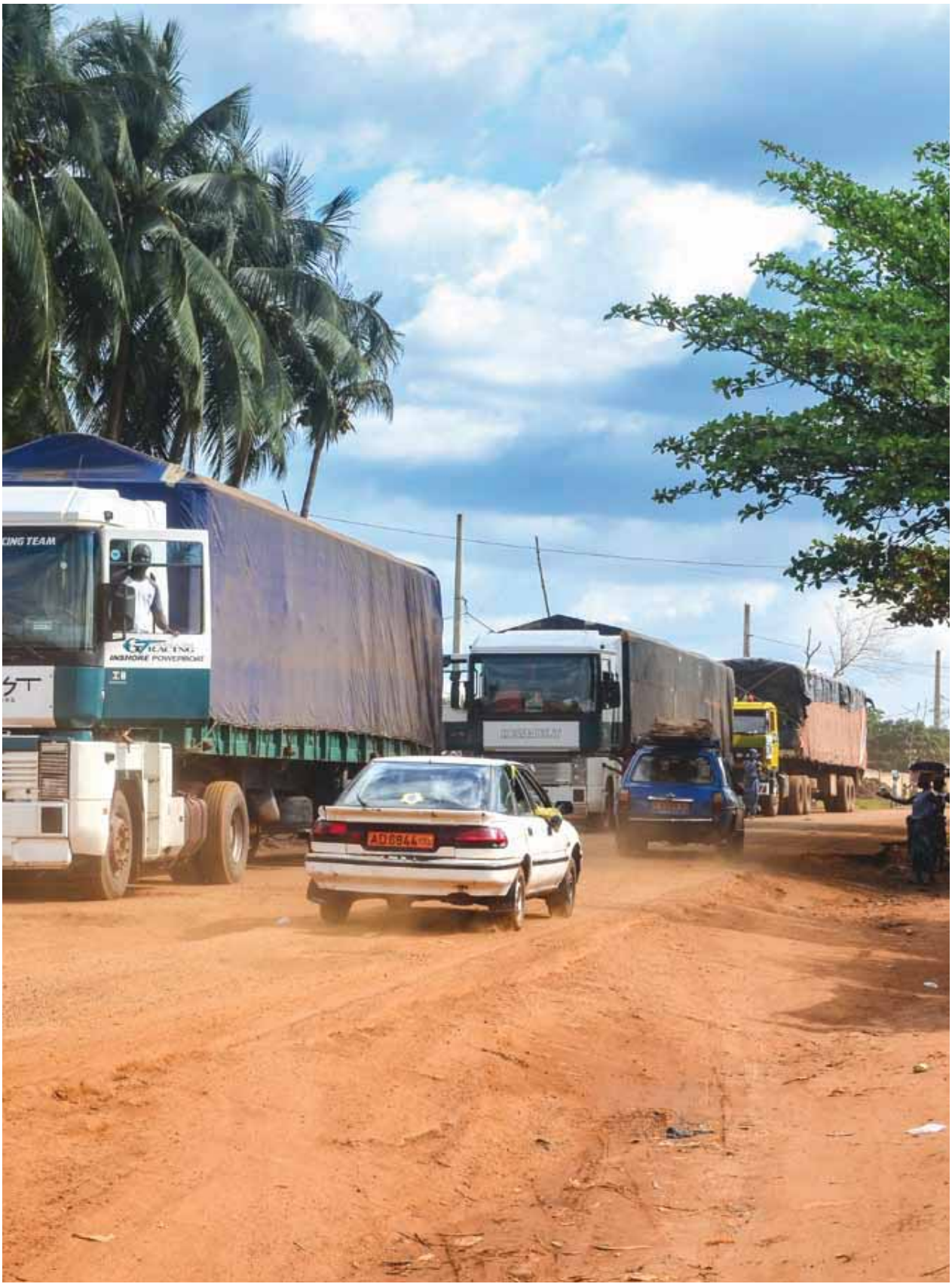
Africa's railways are a prime example of the consequences of past decisions on long-term development. Due to its high upfront investment needs, railway development in Africa has stagnated in favour of road-based commodity transport because trucks require far lower upfront expenditures. Likewise with population movements, private vehicles and other road-based mobility options have often been favoured as a way of shedding short-term costs implications for the public coffers. However, road-based logistics have many hidden and recurrent costs, varying from loss of life in road carnage to higher road maintenance requirements due to excessive loads. The choice against developing denser railway networks, whether heavy rail for commodity transport or light rail for public mobility, has brought a host of externalities and costs often not considered when infrastructure policy decisions are being made. Upfront expenditures of railway development may be high, but so are the longer-term benefits.

The world's changing market structures include new roles in global trade for emerging economies; anticipated continued volatility in commodity prices; and growth of African middle classes.[22] Newly emerging green technologies should be considered by Africa and its cities, particularly in the large- and small-scale infrastructure policy choices that will be required to meet the growing consumption and spending power of the urban middle classes. Unless confronted and resolved, Africa's current large infrastructure deficits[23] are likely to affect future production capacities and lead to higher costs.

Perhaps the most critical observation on the technological and infrastructure transition is that high-tech solutions do not automatically qualify as the best or most appropriate. Low-tech systems that are cheap and easy to maintain often connect better with local conditions and advantages. For example, Africa has plentiful biomass. Bio-digesters (which convert organic and sanitation waste into biogas and fertilizer) can play a critical role in ensuring decentralized energy resilience in locations that, for one reason or another, cannot be cost-effectively served by centralized systems. However, this does not discount the parallel use of advanced high-technology options, such as solar panels, because the need for services can override cost considerations as shown, for instance, by mobile technologies in Africa. Finding solutions that fit local, contextual needs and embracing integration between design, planning, infrastructure and technology choices is essential.

The Urban Transition

Africa's urban transition is proceeding rapidly (see Figure 1.3), with the accumulated relative growth rate of its cities now among the highest in the world (see also Box 1.2).



Transport in Benin. Road-based logistics have many hidden and recurrent costs. **©JBDodane.** Licensed under the Creative Commons Attribution 2.0 Generic License.

BOX 1.2: **URBANIZATION LEVELS VERSUS URBAN POPULATION GROWTH: UNDERSTANDING THE TRENDS AND CONTRIBUTORY FACTORS**

Urbanization is a multifaceted concept that can refer simply to the growth of population in towns. It may also be used to describe the social and political changes that may occur when people live in large, nucleated settlements. Urbanization can also refer to two important structural changes. The first is the speed at which the urbanization level (the share of the national population in towns) is increasing. The second is the extent to which this is accompanied by structural shifts in the economy and employment. This corresponds to conventional understandings about the role of urbanization in economic growth and development.

Distinguishing between these varying aspects helps to explain some seemingly contradictory trends in recent urbanization in sub-Saharan Africa. Perhaps the most obvious of these is that rapid population growth, as experienced in most of the region's towns, does not necessarily translate into rapid increases in the urbanization level. The reason for this is that rises in the level depend on how fast urban populations are growing relative to national growth rates. As many African countries have high population growth, the gap between national population growth and urban growth is not necessarily large, even if towns are growing rapidly.

A focus on the structural aspects of urbanization, rather than on headline city population growth rates alone, provides a picture of a very variable urban experience across the region within, and between, countries.

Latest census data, rather than projections, show that several large mainland sub-Saharan African countries have experienced periods of quite slow urbanization in recent decades, mainly because the gap narrowed between urban and national growth rates. This can occur even if some towns are growing well in excess of the national average, as long as this is counterbalanced by slower growth in other towns within the same country. Thus, rapid urbanization need not occur just because a capital city is growing fast. Table 1 summarises results of urban census data analyses from countries with populations over about 2.5 million, in which the vast majority of sub-Saharan Africans reside. The level of urbanization rose by less than 2 per cent in a dozen countries in their last intercensal period (which in most cases was longer than a decade). A few even counter-urbanized (i.e. the urban population share fell) in the 1980s and 1990s. Despite understandable caution about the reliability of African census data, it is unlikely that so many censuses could reproduce similar trends by mistake. According to their censuses, Burkina Faso, Cameroon and Ghana were, however, urbanizing significantly faster.

These data give a rather different picture of Africa's recent urban experience from the one usually presented of very rapid shifts towards a more urban population, and have important policy implications. If the trends are compared to recent rises in urbanization levels in many Asian countries, it becomes apparent that although African urban population growth may be higher, the rate at which it has urbanized recently is lower.

Analysis of census migration data and surveys shows that a major reason for this slowing urbanization is that the contribution of net in-migration to urban growth diminished. Although there is still much in-migration, urban-rural migration rates rose in response to reductions in the gap between disposable incomes in rural and urban areas as African urban economies informalized under the constraints of structural adjustment programmes in the 1980s and 1990s. In Tanzania, for example, census data indicate that the net contribution of migration to urban growth in 2001-2002 was about 44,000 people: less than 1 per cent of the total urban population at the time.

As indicated in Table 1 there are also issues of definition, which can misdirect interpretations of African urbanization. Many countries define small settlements of a few thousand as urban, with no reference to their occupational profiles. This sometimes means that large villages where most people are farmers, or practise other rural or "non-urban" occupations, are classified as urban settlements. It is becoming more important to factor this into the analysis of African urbanization because settlement reclassification, rather than migration, is

TABLE 1: **LARGE SUB-SAHARAN AFRICAN MAINLAND COUNTRIES BY GROWTH RATE IN URBANIZATION LEVEL AND CENSUS PERIOD**

Counter-urbanization (urban share falling)	**Slow urbanization (< 2% between censuses)**	**Rapid urbanization**	**Uncertain (no census or definitional queries)**
Zambia 1980-90, 1990-2000	Benin 1992-2002	Burkina Faso 1996-2006	Angola
Cote d'Ivoire 1988-98	Ethiopia 1994-2007	Cameroon 1987-2005	Congo (DRC)
Mali 1987-98	Malawi 1998-2008	Ghana 2000-2010	Kenya 1989-2009
CAR 1988-2003	Mauritania 1988-2000		Tanzania 1998-2002
	Mozambique 1997-2007		
	Niger 1988-2001		
	Senegal 1988-2002		
	Sudan 1993-2008		
	Togo 1981-2010		
	Uganda 1991-2002		
	Zambia 2000-2010		
	Nigeria 1991-2006 [1]		

[1] *Nigeria's censuses are particularly complicated. Nonetheless there is significant evidence now that its urbanization level has been exaggerated as the populations of many large towns have not been growing much, if any, faster than the national population.*

BOX 1.2 (CONTD): **URBANIZATION LEVELS VERSUS URBAN POPULATION GROWTH: UNDERSTANDING THE TRENDS AND CONTRIBUTORY FACTORS**

increasingly contributing to "urbanization". It appears to have been important in Ghana's recent surge of urbanization although some large towns - like Kumasi, Tema and Sekondi-Takoradi - have clearly also attracted many migrants. In Kenya and Tanzania, complex issues with definitions have definitely led to overestimations of their urbanization levels. If either country included "occupational criteria", as used in India, to distinguish between small rural and urban settlements, they would "become" much less urbanized. Thus, the extent to which their people have shifted away from primarily agricultural occupations could be more realistically assessed.

The significant improvements in GDP growth in so many countries recently may be generating stronger urbanization, particularly in towns influenced by the surge in mining and energy investments. If so, it will be reflected in new censuses in due course. However, the true role of migration in urbanization, with its associated policy implications about patterns of economic opportunity, can only be understood when analyses are careful to evaluate the geographical variability occurring in urbanization within and between countries, and are careful to indicate how the process has fluctuated over time.

Compiled by Deborah Potts, Cities Research Group, King's College London
Sources: Beauchemin and Bocquier (2004); Bryceson and Potts. (eds) (2006); Bryceson.and Jønsson (2010); Jones and Corbridge (2010); Mezzini and Lindeboom (2008); Potts (2005); Potts (2010); Potts (2012a); Potts (2012b); Potts (2012c); Potts (2013); Satterthwaite (2003).[24]

Although in absolute terms Asian cities still remain the world's fastest growing, the global share of African urban dwellers is projected to rise from 11.3 per cent in 2010 to a 20.2 per cent by 2050 (see Figure 1.4). That is not surprising, since over a quarter of the 100 fastest-growing cities in the world are now in Africa which, by 2011, already hosted 52 cities exceeding one million inhabitants.

Africa's largest cities are not absorbing, and are not predicted to absorb, the bulk of current and future urban population growth. As indicated in *The State of African Cities 2010* report, the "million+" cities typically absorb only some 25 per cent of countries' urban growth, on average; intermediate-size and smaller cities attract the significant balance of about 75 per cent. Although recent data appear to indicate renewed growth strength among Africa's million+ cities, the vast majority of the additional urban dwellers will continue to add to the intermediate and small cities. Consequently, the need for urban management, institution-building and system development is greatest in these city-size categories.

Although Figure 1.3 shows that growth *rates* for Africa's total and urban population are declining, these decelerating rates apply to ever larger national and urban populations. Therefore, in absolute terms, the increases in Africa's total and urban populations will remain vast and will continue for decades. Since urban populations grow faster relative to total national ones, strong increases in urbanization levels of continental and of individual countries should be anticipated. More specifically, between 2010 and 2050, the number of Africa's urban dwellers is projected to increase from 400 million to 1.26 billion.[25] The Africa-wide urbanization level is projected to reach 50 per cent around 2035 and may rise further to almost 58 per cent by 2050[26] (see Figure 1.5), if "moderate" growth-rate projections materialize.

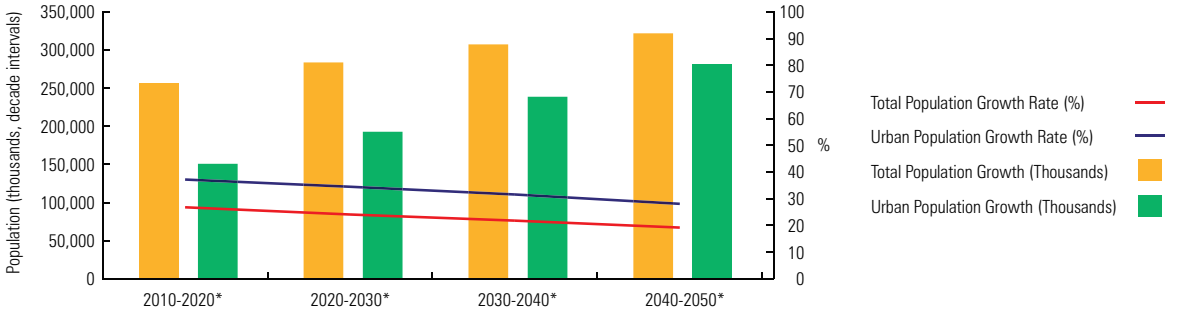
It should be acknowledged, however, that actual growth may differ from the "moderate variant" projections and could either be higher or lower. Still, regardless of whether or not any lower growth scenario may materialize, the ability of Africa's cities to cope with continued rapid growth will be in question given the ubiquitous weakness of urban institutional and infrastructural capacities. These constraints would be particularly acute for intermediate-sized and smaller cities. This is because, first, these are set to receive the vast majority of the total urban growth and, second, because they tend to lag further in urban institutional and capacity development than their larger counterparts. It is, therefore, likely that the urban slum proliferation, characteristic of so many large sub-Saharan African cities may also become a distinct feature of its intermediate-size and smaller ones, unless radically different urban-spatial, urban-economic, urban-social and urban-function development policies are implemented.

As shown in Table 1.1, it is projected that by 2025 Africa's ten largest cities will include three megacities: Lagos (18.9 million), Cairo (14.7 million) and Kinshasa (14.5 million). Dar es Salaam, Khartoum and Abidjan are likely to reach megacity status within a generation from now if current growth trends persist. Nairobi and Kano could also be moving in that direction. However, due to the manner in which megacities are defined, this does not entirely reflect the full picture of Africa's largest urban population concentrations.

As explained in the 2008 and 2010 issues of *The State of African Cities* report,[27] new spatial urban configurations have emerged and continue to come about in Africa (as elsewhere in the world) through the increasing physical and functional interconnection of metropolitan cores and settlements in their proximity. As these two join, new continuous urban forms emerge. The spatial outcome of this first stage of continued urban development is usually referred to as the *metropolitan area*.

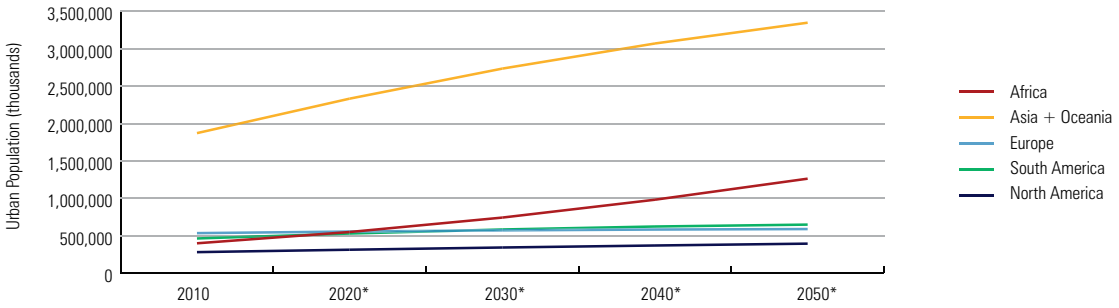
In nations with high urbanization rates, further physical growth and functional interaction among metropolitan areas and their contiguous municipalities can lead to a next phase in the urban-spatial evolution. As metropolitan areas continue embracing towns and villages in their orbit, they create an urban system significantly larger than itself - the *extended*

FIGURE 1.3: **PROJECTED AFRICAN RELATIVE TOTAL AND URBAN POPULATION GROWTH RATES (PER CENT, THOUSANDS, DECADE INTERVALS)**



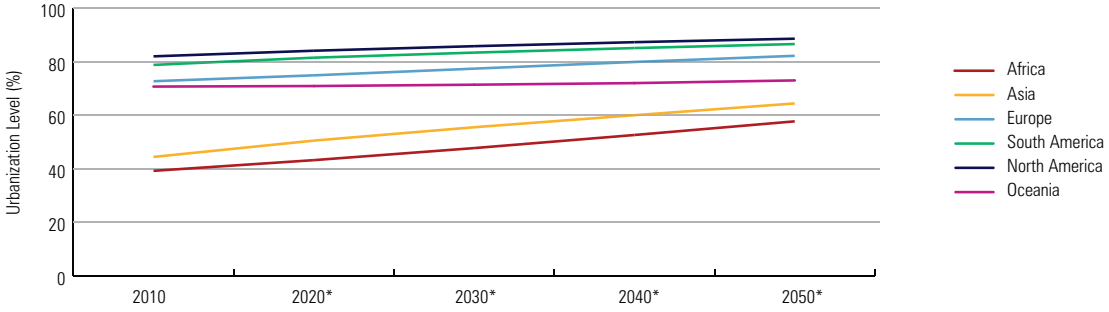
Source: Calculated on the basis of World Urbanization Prospects: The 2011 Revision, UNDESA, New York, 2012
** Projections.*

FIGURE 1.4: **URBAN POPULATION BY MAJOR REGION 2010-2050 (IN THOUSANDS)**



Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York, 2012.
** Projections.*

FIGURE 1.5: **URBANIZATION LEVEL BY MAJOR REGION 2010-2050 (PERCENTAGE OF TOTAL POPULATION)**



Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York, 2012
** Projections.*

metropolitan region (EMR): a large to very large regional urban system comprising multiple towns and other settlements, centred on a single metropolitan core and which functions as a *de facto* single urban entity.

In recent years, EMR-formation has become increasingly evident in many African capitals and other large cities. Moreover, the deliberate creation of EMRs is now being pursued by some nations - especially for their capitals - through the establishment of satellite towns at distance from the metropolitan area. Aiming at reducing the housing, services and traffic congestion pressures on the metropolitan area, satellite cities can indeed serve that purpose. They play a role in relieving population pressures and, if simultaneously creating local employment opportunities rather than establishing mere "dormitory towns", they can offer real solutions towards the dispersal of economic opportunities away from the primate city. Promotional campaigns for such satellite cities increasingly mention "escaping the urban informality of the metropolitan core" as among their attractions. However, even though at a distance from the metropolis and while recognized as administratively separate entities, these satellite cities become inevitably an integral and functional part of the

TABLE 1.1: **PROJECTED POPULATION DYNAMICS OF AFRICA'S TEN MOST-POPULOUS CITIES (IN 2015), 1985-2025 (IN THOUSANDS)**

Urban Agglomeration	1985	1990	1995	2000	2005	2010	2015*	2020*	2025*
Lagos	3,500	4,764	5,983	7,281	8,859	10,788	13,121	15,825	18,857
Cairo	8,328	9,061	9,707	10,170	10,565	11,031	11,944	13,254	14,740
Kinshasa	2,722	3,520	4,493	5,414	6,766	8,415	10,312	12,322	14,535
Khartoum	1,611	2,360	3,088	3,505	3,979	4,516	5,161	6,028	7,090
Abidjan	1,716	2,102	2,535	3,028	3,545	4,151	4,923	5,896	6,971
Dar es Salaam	1,046	1,316	1,668	2,116	2,683	3,415	4,395	5,677	7,276
Johannesburg	1,773	1,898	2,265	2,732	3,272	3,763	4,114	4,421	4,732
Nairobi	1,090	1,380	1,755	2,214	2,677	3,237	3,958	4,939	6,143
Kano	1,861	2,095	2,339	2,602	2,895	3,271	3,902	4,748	5,724
Cape Town	1,925	2,155	2,394	2,715	3,100	3,492	3,810	4,096	4,388

Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York, 2012

** Projections.*

regional urban system of the metropolis, especially when the requisite infrastructure linkages are in place.

Likewise, the clustering of people and economic activities, along major logistical arteries (especially roads) radiating from and connecting separate metropolitan areas, leads to the gradual building-up of the urban fabric along these infrastructure connections. Where the metropolitan cores are arranged in a linear fashion, as along coastal or pan-African or other major highways, the outcome will be a ribbon-shaped urban growth pattern (referred to an *urban development corridor*) that can stretch over long distances. Over time, such urban development corridors will typically also grow in perpendicular directions. Significant new urban nodes can thus come into being, especially where major infrastructure branches off the highway.

If multiple metropolitan areas are not positioned in a linear format, as in the case of Gauteng Province in South Africa, the urban fabric will expand and join in multiple directions to form a dense cluster of settlements of all size categories, from metropolises to villages, in a *mega urban region* (MUR): a vast regional urban system with large to very large population counts. Invariably composed of multiple municipalities, townships and settlements, all these newly emerging concentrations establish urban configurations at regional scales and may have population numbers equivalent to megacities without being referred to as such.

The mega-urban region of Gauteng with its aggregate population of well over 12 million is, therefore, a *de facto* megacity. Likewise, the EMRs of Addis Ababa, Alexandria, Dar es Salaam, Kenitra-El Jadid and Tangier, as well as the transboundary urban system of Kinshasa-Brazzaville, could soon qualify as *de facto* "megacities" if a wider concept than that dictated by somewhat artificial administrative municipal boundaries is taken into account.

Due to their rapidly increasing population and spatial sizes, as well as their large economic significance, agglomerated and regional urban systems are key entry points for the critical directing of Africa's urban transition towards growth trajectories that can be sustained in social, economic and political terms.[28] Achieving that objective is indeed critical, since there simply cannot be sustainable development without sustainable urbanization. Urban competitiveness and the need to build adaptive capacity and resilience[29] in a future of steadily more-restricted access to resources and increased frequency as well as severity of calamitous events, will dictate the continent's success or failure in the 21st century.

There can be a global leadership role for Africa in developing truly sustainable urban concepts and models that can subsequently spread from Africa to other parts of the world.

The Sustainability Transition

More than a quarter of the 100 fastest-growing cities in the world are in Africa. In absolute terms, these growth rates are surpassed only by Asia's. By 2050, Africa's urban dwellers are projected to have increased from 400 million to 1.2 billion.[30] The urbanization level (40 per cent in 2010) is projected to rise to 50 per cent by around 2035 and just under 58 per cent by 2050.[31] The ability of African cities to cope with these numbers is questionable since they generally lack the institutional and infrastructural capacity to absorb the additional urban dwellers. It is, therefore, likely that the majority of these new urban dwellers will reside in slums and/or informal settlements.[32]

Resource depletion levels in African economies are high, whether in mining for minerals and oil (reducing energy and raw materials), or agricultural practices (lessening soil quality and water availability). At the heart of this lie the vulnerabilities of undiversified economic growth and the inability to adapt to new global challenges. The Republic of South Africa is particularly vulnerable to resource depletion. By 2060 it might be a resource scarce economy, which might necessitate a spatial transition to a predominantly coastal economy.[33] Presently, most of its infrastructure is built around inland mining operations such as those in Gauteng, an urban province which hosts around 70 per cent of the country's workforce and produces around 33 per cent of national GDP.[34]

▲
Lagos, Nigeria. **©Nick M.** Licensed under the Creative Commons Attribution 2.0 Generic License.

The changing structure of global markets includes the growth of the middle class worldwide,[35] a dominance of future global trade by developing countries and continued price volatility of commodities. New technologies emerging in the green technology sector will likely benefit Africa and its cities in particular. Large- and small-scale infrastructure choices will have to be made to meet growing demand and resource constraints. Physical drivers of change, including those of a climatic nature, large infrastructure deficits,[36] as well as land and water shortages are likely to reduce production capacities and increase the costs of land and water supply.

Because of their rapidly increasing populations, spatial sizes and huge economic significance, African cities are key channels for leading the world in the transition to sustainable economic growth trajectories. It is in Africa's cities that this lead must start and the solutions to urban sustainability be spread to other parts of the world. Cities can lead the transition to social, economic, ecological, physical and political sustainability.[37]

However, in such a context, the thrust towards industrialization cannot ignore the role that urbanization must play in structural transformation. The exception to this remains where the large, emerging urban consumer class is concerned, because it may contribute to creating strong domestic demand which, in turn, can stimulate urban economies and job creation. African cities should actively explore and embrace diverse growth opportunities, decoupled where possible from unnecessary resource exploitation and ecological degradation.[38] This would enable them to implement a sustainable development trajectory.

The Political Transition

In the late 1950s, Ghanaian President Kwame Nkrumah and the "radical" Casablanca Group of African countries proposed a far-sighted plan for rapid pan-African unification under a federal government, a single market and a common foreign policy.[39] Perhaps these goals were premature, as even the far more advanced political, economic, industrial and social systems of Europe would take another 30 years to accomplish anything near such a feat.[40]

Today, some 50 years later, this unfulfilled pan-African vision continues to feed political debate across the continent. Pan-Africanism is now more important than ever, because a block of more than one billion people must have more negotiating power than individual nations or their comparatively small sub-regional cooperative groupings.

Nevertheless the realization of pan-Africanism remains elusive, among other reasons because many nations continue to struggle with building their post-independence statehood. Although the number of democratically-elected African governments is now steadily increasing, many countries experience institutional and governance fragilities. In some even state legitimacy is contested, evidence of which are the "growing pains" that appear to accompany political and social transformations.

Expectations were high in newly-independent Africa. The continent saw itself as destined for an era of unprecedented economic growth, development and prosperity.[41] It was thought that only strong state power and planning could provide the rapid changes required to achieve these aims. This perspective not only justified greater government control, it was also considered critical to building true nation states from immensely diverse sociocultural systems.

However, under the subsequent military and strong-man regimes of post-independence Africa, further statehood-building efforts were often left unattended because institutional and governance shortfalls could be ignored or simply overruled. Consequently, nation- and statehood-building; modernization; the envisaged rapid shift from low-productivity agriculture to high-productivity manufacturing; and the creation of significantly increased urban employment

for rapidly growing cities all remained elusive. Instead, public institutions became bloated with employees who weakened state coffers rather than delivering the policies required for economic and social transformation.

The political transitions that emerged in Africa during the 1980s and 1990s occurred alongside (some say, because of) the Bretton Woods institutions-induced economic liberalization and structural adjustment programmes. The interventions that followed from these programmes mostly concerned change in politico-economic systems *per se* yet largely failed to transform the underlying economic structures and political cultures.

Indigenous, pre-colonial Africa had distinct political cultures: they were largely feudal, albeit with democratic aspects, and based on bonds of kinship, language and religion. The new, post-independence African leaders - many derived from small, urban and westernized elites - mostly embraced political models inherited from Europe. They ignored the notion that these models had evolved under different conditions and were alien to, if not incompatible with, Africa's often culturally and locally-defined political identities.[42]

The western political philosophies which were introduced in Africa had one thing in common: they all failed to deliver the post-independence visions of development and prosperity for all. Although the global political and economic terrain was tilted against the interests of emerging Africa, tardiness in introducing true political change and the lack of attention to needed reform in political culture, especially over the past few decades, is also to blame for non-delivery on Africa's developmental aspirations. Asian nations, for instance, were more astute in this respect. Despite their post-independence transitional problems, on the whole they performed better than African nations. It is telling that 12 Asian and 27 African nations are considered to be among the world's 40 least-performing, with the five worst rankings all occupied by Africa.[43] Admittedly, there is much criticism of this assessment but it cannot be completely ignored as a broad indicator of different levels of state fragility around the world.

The African peoples and their authorities live in separate worlds, whether economically, politically, culturally or all of these combined. In several countries, statehood mostly exists in the capitals and other large cities, while the remainder of the domestic territory is a kind of hybrid nation; a geographic amalgamation of local territories defined by kinship, language and cultural bonds rather than identifying with the nation state. Furthermore, the rural bias – once judged necessary to capture the essence of African sociocultural systems – has, until very recently, almost systematically ignored the realities of urbanizing societies. This bias has also neglected to recognize how African peoples – modernizing faster than the political cultures in their nation states – seek to access power and control resources.[44]

Mobile technology and increasing population mobility are now enforcing demands for rapid change in the political, economic and social relationships between Africa's financial and governance power centres and the outlying intermediate-size cities and small towns. Africa's populations are concentrating in urban contexts that define themselves as political constituencies in their own right. In other words, not only the African peoples but also African polities are now urbanizing. Rising political awareness; demands for more participatory governance; local self-determination, as well as transparency and accountability in the use of domestic financial and other resources are all indications that Africa's political values and cultures are rapidly transforming.

The promotion of change in political cultures is implicitly embedded in the global drive for more decentralized governance. Although "every ship needs a captain", the effective deconcentration of decision-making powers according to the subsidiarity principle is required. That would go a long way in providing the engaged governance modalities, the delivery on election promises, and the responsiveness to popular needs increasingly demanded by African populations. However, as in so many countries around the world, the *International Guidelines on Decentralization and Strengthening of Local Authorities*[45] have been interpreted by many African central governments as an excuse simply to "decentralize" the problem-resolution responsibility. The fiscal resources required (or the authority to raise the funds locally) have typically not been decentralized. In such contexts decentralization becomes ineffectual, if not meaningless.

At the other end of the power spectrum, Africa needs to unite and pan-Africanism should be far more vigorously pursued, despite inherent political obstacles. Today's world is a globalized one in the political, economic and financial sense. While advanced and emerging economies around the world increasingly operate in the unison of shared-interest blocks, Africa continues to deal bilaterally in its strategic international relations. If continued, such practice will reduce Africa's chances for achieving the political, economic and social transformations to which it aspires. Strategic repositioning in the world can no longer be effectively pursued from parochial national perspectives; it requires the numbers and powers found only in cooperative unity.

This third issue in *The State of African Cities* report series attempts to explain why Africa is at a critical junction in its political, economic and social development. The unfolding major transformations offer Africa opportunities to jettison the development trajectories that have failed to deliver its post-independence visions of human development and prosperity. Given the present economic momentum, there are options to reflect on the desirable urban development trajectories in the light of looming resources scarcity and other vulnerabilities. Given the political changes widely demanded by its peoples, Africa has the opportunity to reconsider the adaptations required in its political cultures. Inaction in these areas would imply perpetuation of the development models that have proven unable to deliver prosperity for all, and which are more likely to deliver significant socio-political risks. A deep re-imagining of African urbanism may be critical, because there cannot be political, economic, social and environmental sustainability without sustainable urbanization.

1.2
Cities at Risk

Abidjan, Ivory Coast. **©Axe.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

Urbanization for Development?

Africa's urban transition has the potential to transform the development prospects of countries across the region. The defining characteristics of urban settlements (demographic size, density and socio-economic diversity) render them particularly dynamic spaces. Economies of scale in production, large markets for labour and goods, and the ease of information flows in urban environments enhance productivity and innovation. As the primary spatial interface between citizens and government, cities can stimulate vibrant political engagement. Moreover, the density and diversity of cities can encourage the emergence of progressive values and institutions that promote social cohesion.

However, for cities to fulfil their developmental potential, a range of inherent vulnerabilities associated with urbanism must be continuously monitored and mitigated through public policy, planning and investment. These vulnerabilities can be roughly divided into environmental (associated with the relationship between humans and the environment) and social (associated with the interactions between humans). The same characteristics that make cities socially and economically progressive spaces also generate complex environmental and social challenges that can only be met by active public interventions at multiple scales, at the household (e.g. housing subsidies), city (e.g. planning) and national levels (e.g. trade and employment policies). If these challenges are not dealt with effectively, the welfare of individuals, communities and entire nations can suffer.

Currently, African cities are not fulfilling their development potential, which is underscored by evidence of increasing environmental strains and social conflict in urban areas. These are no inevitable consequences of rapid urban population growth; rather, they are a consequence of political and institutional failure that inhibits effective urban planning, policymaking, investment and regulation.

Urban authorities across Africa struggle to fulfil their mandates due to financial and human capital constraints, the detrimental effects of which are compounded by the intensely

BOX 1.3: **THE POLITICS OF URBAN GOVERNANCE IN KAMPALA AND KIGALI**

▲
Kisenyi, Kampala. **©Shack Dwellers International.** Licensed under the Creative Commons Attribution 2.0 Generic license.

▲
Kigali, Rwanda. **©Dylan Walters.** Licensed under the Creative Commons Attribution 2.0 Generic license.

The significance of national political dynamics in shaping urban development outcomes is illustrated by an analysis of the divergent trajectories of Kampala, Uganda, and Kigali, Rwanda, in recent years.

In Kampala, the planning and regulatory efforts of city authorities have been routinely thwarted by political intervention from above. It is widely recognized by the populace that the president is willing to interfere in the city's affairs to secure political support. Projects have often been delayed or cancelled at the behest of groups who promise to deliver votes in return, and efforts to regulate the informal transport sector have consistently been thwarted by presidential interference. This political manoeuvring has impeded effective urban planning and management in Kampala.

By contrast, development has proceeded swiftly in Kigali in recent years in line with the city's ambitious master plan. Tough zoning and permit laws are followed to the letter, with poor and rich held to equal standards, while city authorities are easily able to clear squatters off public land slated for approved projects. While the somewhat authoritarian nature of governance in Kigali has generated some controversy - and may ultimately prove unsustainable - the pace of urban development has been impressive, earning the city a UN-Habitat Scroll of Honour Award in 2008.

These different development trajectories are arguably the result of divergent political priorities. In Kampala, the government perceives itself to be politically vulnerable; thus catering to the interests of voting blocs is paramount. In Kigali, memory of Rwanda's past violence and instability remains strong, and the government prioritizes the provision of stability and order. Its approach to urban planning is a natural outgrowth of this view. The lesson is clear: where the political interests of national governments are at odds with the objectives and efforts of city authorities, urban development is retarded. Where national governments offer support and autonomy to local authorities, rapid and significant change is possible.

Sources: Green (2012); Goodfellow and Titeca (2012); Goodfellow (2012)[46]

political nature of urban spaces. Decentralization initiatives designed to empower local governments have often been derailed by the unwillingness of central governments to cede power to lower tiers of government - particularly where these are controlled by opposition parties (see also Box 1.3). Within cities, the proliferation of underserviced informal settlements has led to, and been perpetuated by, the emergence of powerful political and economic entrepreneurs who profit from urban underdevelopment and hence seek to perpetuate the status quo. Poorly governed cities have increasingly also been "colonized" by criminal networks that exploit the services and infrastructure of weakly regulated urban settlements to further their own financial objectives.

These local, national and international political-economy dynamics of urban underdevelopment have been further exacerbated by an anti-urban bias in international development discourse and policy, since the late 1970s. Instead of embracing the developmental potential of cities, African governments and international development agencies have focused their efforts primarily on improving rural livelihoods, often with the hope of stemming migration to the cities. These strategies have been largely ineffective. While there is no single blueprint for developmental urban governance, it has become clear in recent decades that existing theories and policy paradigms are not working. New visions and strategies are required that are in tune with contemporary African realities and that reflect the needs and aspirations of African citizens. Realizing these visions will require significantly more support from national governments and the international community to build a sound evidence base for urban policy, to ensure that local governments have the skills and resources to manage towns and cities effectively, and to promote inclusive, progressive and productive dialogue among urban stakeholders. There are also likely to be significant roles for the private sector and civil society in successful implementation of sustainable urban development visions.

At present, African cities are at risk. But the very concept of risk also implies choice. If African governments and international development agencies change course and recognize the potential of cities to spearhead a productive, inclusive and sustainable development path in the coming decades, Africa will prosper. If not, growing environmental and social strains may exacerbate urban poverty and conflict in the region.

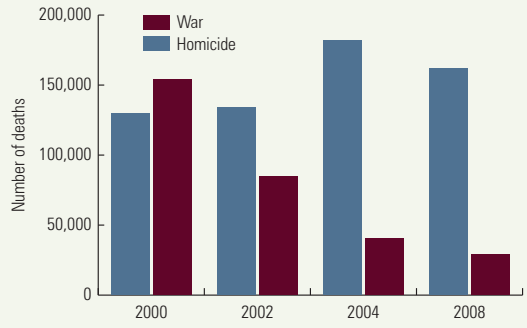
Socio-Economic Conditions and the Spectre of Urban Violence

Socio-economic development fundamentally depends upon successfully managing the conflicts that inevitably arise in societies. Challenges are particularly acute in cities where the needs, interests or grievances of individuals or groups are not always effectively addressed. The spectre of violence looms large and may become a critical obstacle to social and economic progress. Violence destroys valuable

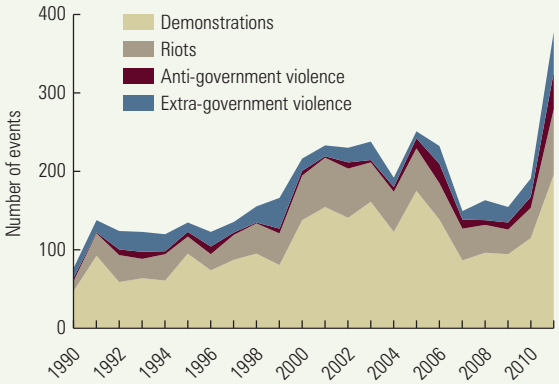
▲ Violence erupted in the Ngor area of Dakar after a power failure during televised transmission of an African Cup of Nations qualifier match between Senegal and Cameroon. Local youth took to the streets to vent their anger. **©Jeff Attaway.** Licensed under the Creative Commons Attribution 2.0 Generic License.

BOX 1.4: **VIOLENCE TRENDS IN AFRICA**

War deaths versus homicides in Africa



Social conflict events in Africa, 1990-2011



There is a dearth of reliable data on the burden of urban violence in Africa. However, some recent data sets suggest a rising trend in the region in this respect. The graph on the left shows a substantial decline in Africa's war-related deaths over recent years, as well as a moderate increase in homicide rates in the region. While these data are not specific to urban areas, it is reasonable to assume that they reflect trends in urban areas given that homicide rates tend to be positively correlated with settlement size.

The graph on the right draws on recent data from the Social Conflict in Africa Database. It suggests that there has been a steady increase in social conflict events in African cities, including demonstrations, riots, anti-government violence and extra-governmental violence (violence between social groups).

Sources: World Health Organisation; Hendrix and Salehyan (2012)[52]

assets, undermines social cohesion and erodes trust in public institutions. It generates uncertainties that inhibit the kind of investments that advance development objectives.[47]

In recent decades, there has been a marked decline in the frequency and intensity of the sovereign and civil wars that have plagued many African countries since independence.[48] This trend is good news for Africa and has contributed to improved economic performance in recent years. However, there are indications that the decline in warfare has been accompanied by a rise in urban violence (see Box 1.4).

Deadly protests and riots inspired by food and fuel price shocks swept across the continent in 2008 and in 2010. Ethnic and religious violence is on the rise in many cities; the frequency of terrorists attacks has increased in several sub-regions; organized crime is on the rise; and election-related violence has become commonplace. Less visible, but equally pernicious, are high rates of domestic violence. Boundaries between various forms of violence are often blurred and violence in the home often sets a precedent for that on the streets.[49]

While high rates of urban violence have accompanied Africa's urban transition, there is little evidence that urbanization or rapid urban population growth *per se* increase the risk of violent conflict.[50] Rather, rising urban violence should be understood as a consequence of the failure of cities to fulfil the basic needs, aspirations and expectations of their rapidly growing populations.

There is a dearth of robust research on the incidence and determinants of urban violence in Africa, but broader conflict and criminology literature indicates that poverty, inequality, economic shocks, social exclusion and weak political institutions are significant predictors of conflict and violence.[51] Many of these risk factors are prevalent, and in some cases worsening, in African cities.

South of the Sahara, exceptionally rapid urban population growth has outpaced economic development over the past 30 years, contributing to the "urbanization of poverty" in the region. This, coupled with a generally *laissez-faire* approach to urban management, has seen the proliferation of unplanned, underserviced settlements, where diseases, associated with poor water and sanitation, are rife; access to adequate health and education facilities is often limited; organized policing is *ad hoc* at best; and, employment is often informal, insecure and poorly paid. There is a large and growing gap between material conditions and opportunities in slums and those in more affluent neighbourhoods. Even in cities where

BOX 1.5: **URBAN DISCONTENT AND THE ARAB SPRING IN NORTHERN AFRICA**

▲
A protester gestures in front of the headquarters of the Constitutional Democratic Rally (RCD) party of ousted president Zine al-Abidine Ben Ali during a demonstration in downtown Tunis, January, 2011. **©Nasser Nouri.** Licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 2.0 Generic License.

In late 2010, protests and riots stimulated by rising fuel and food prices broke out in cities across Africa. In the North these protests quickly transformed into widespread social unrest, with citizens taking to the streets and demanding political reform.

This spasm of unrest was long in the making. Demographic trends in the sub-region had generated a large youth bulge. Despite a significant expansion in access to education in preceding years, unemployment remained stubbornly high - particularly among the youth - resulting in a yawning gap between capabilities and expectations on the one hand and opportunity on the other. Although levels of inequality are, perhaps, not as severe in the North as in the rest of Africa, the statist model of economic development dominant in the sub-region has served to suppress the emergence of a dynamic private sector. It has also concentrated extreme wealth and political power in the hands of a narrow elite. Government efforts to redistribute the national wealth generated by oil and foreign aid through infrastructure projects, food aid and public employment schemes, ultimately proved insufficient to quell simmering discontent, which rarely found public expression in a context of political repression.

It is generally less known or understood that the anger of Northern African youths also had a basis in the fact that governments throughout the sub-region had not adequately prepared for the latent urban household formation rates associated with the demographic youth bulge. A severe shortage of affordable urban rental units prevented many youngsters from marrying and starting a family of their own, simply because they did not have access to affordable independent housing. Rather, youths typically continue living with their parents until comparatively advanced ages. Given Northern African societies' views on premarital inter-personal relations, the Arab Spring resulted not only from lack of political participation, but was also embedded in sheer social frustration.

Combined, these conditions made the region vulnerable to violent conflict. In an already volatile atmosphere of public protest associated with inflation, the self-immolation of a Tunisian street vendor fed up with police harassment catalysed a region-wide movement. In Algeria, an immediate reduction in food and cooking oil import tariffs helped end rioting, while Morocco defused discontent by reforming its constitution and raising wages. In Tunisia and Egypt, which traditionally have permitted a degree of civic associational life, stubborn regimes confronted massive social mobilizations in their respective capital cities, ultimately resulting in regime change. In Libya, where civic associations of any kind were banned, wholesale civil war broke out, ultimately resulting in the collapse of the regime of Muammar al-Qadhafi.

Cities were at the centre of the storm in Northern Africa, and the Arab Spring offers a salutary lesson to governments across the world: if the needs, aspirations and grievances of the urban masses are not addressed, civic unrest is surely on the horizon.

Sources: Anderson (2011); Joffe (2011); Campante and Chor (2012); Malik and Awadallah (2011) [54]

income-based measures of inequality show a relatively narrow differential, fortified enclaves of wealth can be found in the midst of sprawling slums. Such conditions create the perfect storm of real and perceived uncertainty, insecurity and injustice that motivates individuals and groups to engage in violence.[53]

Although physical conditions are generally better in Northern African cities, the events of the Arab Spring revealed a powerful, simmering discontent among urban masses frustrated with limited opportunities; persistent socio-economic vulnerability; and restricted voice in public affairs (see Box 1.5).

For African cities to prosper and drive national development, they must be safe. Widespread insecurity is often cited as a key obstacle to investment in the region needed to expand secure employment opportunities and improve the quality of housing and infrastructure. If the situation is to improve, the political economy of urban underdevelopment must be reversed.

Managing Urban Environmental Vulnerabilities

The effects of global climate change on Africa are extremely varied, given the diversity of environments across this vast continent. The drier subtropical regions are projected to warm more than the moister tropics while northern and southern Africa will become much hotter and drier in summer, with increased drought risks.[55] Average rainfall in Eastern Africa and parts of Central and Western Africa will increase (with added risks of increased vector borne diseases - malaria, dengue and Rift Valley fever).[56] Droughts and resulting water quality declines will also lead to increased health and sanitation challenges.[57] Increased storm flooding will fuel landslides and erosion with concomitant risks to life and livelihoods. Conflict over water resources is also likely to increase.[58]

Urban areas are often the localities most vulnerable to disasters, due to dense populations, accumulation of assets and variety of activities within comparatively small geographical areas. Given the critical political, social and economic roles of cities, these risk factors bear on urban localities and often become national in outreach when disasters occur. The secondary impacts - including damage to infrastructure, disruption of services, food scarcity and an increasing prevalence of vector and water-borne diseases - are likely to worsen the condition of the most vulnerable.

Unguided urbanization, degradation of freshwater resources and failure of climate change adaptation strategies are among the most significant global environmental risks.[59] At the local level, environmental risk needs to be understood as a coincidence of physical risk and human vulnerability. For Africa's burgeoning cities and urban centres the nexus between the environmental crisis, the global economy, and the *second urbanization wave*[60] exacerbates the exposure of poor urban populations to increased physical risk. Analysis of the political ecology of urban poverty in Africa may lead to a polarized and luxurious debate of whether, for example, solid waste is a health hazard or a livelihood resource.[61] However, it is known that responses to the conditions of urban poverty, through unplanned and informal mechanisms of accessing land, water, food and sanitation services, puts poor urban residents further at risk.

There is a direct correlation between poverty and vulnerability to environmental risks.[62] Low-income groups in African cities are relatively disenfranchised from decision-making, having the least resources at their disposal to meet lifestyle challenges, even less during times of change or disaster. The urban poor, especially women and the very young are shown to be most at risk from disease, pollution[63] and disasters,[64] which might all be exacerbated by climate change.[65]

Ensuring Sustainable Resource Flows

Food Security

Agricultural productivity in many parts of Africa has been hard hit by economic recession. Conflict,[66] drought[67] and flooding[68] have also contributed to burgeoning urban populations and the reduction of rural livelihoods. Land degradation[69] is highly significant in 32 countries in Africa.[70] There is a strong correlation between population density (where land is continuously cultivated) and soil erosion, which also causes river and dam siltation. Erosion, as well as chemical and physical damage, has degraded some 65 per cent of the continent's farmlands,[71] reducing urban food security.

Urban dwellers in most of Africa presently rely predominantly on rural areas for food security[72] rather than imported foodstuffs. While this might be self-evident, the implications are manifold. Secure water supply as well as transport are critical to sustainable rural agriculture and continued food supply. Appropriate infrastructure for supply and distribution linkages is essential, since even surplus crops are useless unless delivered in time to consumers.

Urban and peri-urban agriculture, most noticeably small mixed crop-livestock ventures, is providing a much needed mechanism within the supply chain for urban dwellers. Reducing transport requirements and affording households the capacity to access fresh produce, closes some of the gaps where they are most needed. The conundrum is, however, that urban farmers tend to be higher income households than non-farmers. This appears to be a complex function of access to land (crop and livestock area); water resources; and markets (their neighbours or suburbs, leading to reduced or absent transport costs). Further, by producing for household consumption, families are able to reduce spending on foodstuffs from external sources, thereby improving their overall income.[73]

Water Security

Ten of the world's twelve most drought-vulnerable countries are in Africa.[74] Water scarcity and drought presently affect millions of people in at least 25 African countries,[75] and more than 13 million were affected in the Horn of Africa alone during the 2010/2011 drought.[76] Settlement in areas adjacent to water is characteristically a fundamental feature

contributing to the economic and demographic growth of a city. Since cities are dependent on biodiversity, for a variety of ecosystem services such as water provision, strategic planning for sustainability is vital to protect existing ecosystems or "ecozones" within or surrounding cities (such as wetlands, rivers and coastal areas), which an increasing city footprint might jeopardize.

Global environmental change will affect rainfall patterns. What is relatively certain is that rainfall is already less predictable, leading to uncertainty in timing for crop planting as well as crop failures and insecurity of water supplies. Changing seasonality, that is the earlier onset of summer and altered rainfall patterns, may indeed have the same effect as droughts. Water supply to urban areas will be severely tested in the future, since this is largely linked to rainfall, basic infrastructures and the capacity to use water resources sustainably. In cities where water volume is not climatically or seasonally limited – along large rivers, for example – the primary concerns might be water quality rather than quantity. Rising sea level is not only likely to cause flooding; fresh groundwater may become saline as rising sea levels penetrate low-lying aquifers as experienced in Beira, Mozambique.[77]

Energy Supply

Throughout Africa, poverty is caused or exacerbated by lack of access and/or inequitable access to energy resources, with scant household resources (including time) being spent on energy provision.[78] More than half of informal settlements in Africa rely on bottled gas, paraffin, diesel, coal and wood fuel. In some countries, biomass accounts for 80 per cent of energy use.[79] Some countries are providing incentives for reduced energy consumption (distribution of low energy light-bulbs; promoting low current appliances or subsidized domestic solar water heating). For example, the Kuyasa Project in the city of Cape Town, South Africa, is a project harnessing Clean Development Mechanism (CDM) support (see also Box 1.7).

Waste Management

Although African cities generate only between 0.3 kg and 0.8 kg of solid waste per capita/day compared to the global average of 1.39 kg/capita/day,[80] poor solid-waste management poses extreme hazards to health and water quality through pollution. In many African cities, waste management systems appear to be absent, with solid waste disposed of directly adjacent to informal settlements in mounds, trenches and near watercourses.

There is a relatively large proportion of organics in waste generated in African cities, typically well over 50 per cent.[81] The potential for "green economy" projects in waste separation and management is thus high and might reduce the waste disposed through reuse of organics for animal feed, such as in Kampala, Uganda, or the generation of biogas from waste. The capability for trading in the carbon market through the CDM, demonstrated for Matadi in the Democratic Republic of Congo,[82] can significantly offset the costs of collection and safe waste disposal. eThekwini Municipality (Durban) in South Africa has already implemented a waste-to-energy project at its Mariannhill Landfill.

Almost invariably, informal settlements and communities of waste pickers arise near formal solid waste landfills. Waste recycling can be lucrative where waste emanates from middle to upper income settlements. But waste-pickers live dangerously, with a high incidence of injuries and infection from sharp objects, medical waste and other hazardous substances in uncontrolled disposal sites.

"External" Threats and Shocks

There have been predictions of 200 million climate refugees (eco-migrants), with global environmental change viewed as a major driver of renewed rural-urban migrations.[83] However, natural growth of urban populations appears to be a far more significant driver of change and vulnerability in Africa than migration, including climate change induced migration.[84] Understanding the nature of urban demographics is essential to predicting trends and addressing urban environmental challenges and risks.

Health and Sanitation

Although recent trends indicate progress and even acceleration towards a healthier Africa, of concern are apparent inequities in the access to basic services which are skewed towards high-income groups and urban areas.

Although 42 per cent of the urban population of Sub-Saharan Africa has access to improved sanitation, low access levels in urban informal settlements can lead to higher risks of diseases. Lack of drainage and piped sewage do increase urban habitats for the anopheles mosquito, thereby increasing vector risk and spread of malaria even during dry seasons.[85] Rising temperatures and flooding through global climate change will increase, or certainly shift, the range and spread of the malaria-carrying mosquito potentially threatening previously unaffected highland cities such as Nairobi and Harare.[86]

Human health contributes to the indices used to determine least developed countries. Existing health and sanitation challenges (particularly those in urban areas) might be further exacerbated by climate change and variability.[87] South of the Sahara, only Madagascar and Malawi are on track to reach the Millennium Development Goal (MDG) target (see also Box 1.10) to reduce child mortality by two-thirds in 2015.[88] The lack of equitable access to resources and services across the board in African countries[89] provides an on-going challenge to health provision. This is particularly significant as urban populations increase.

Adaptation versus Mitigation

African countries are generally low-level contributors to greenhouse gases, with the Republic of South Africa being the only African country among the world's top 25 emitters of carbon dioxide over the past several decades.[90] Cities generate more than 80 per cent of carbon emissions globally.[91] Countries are largely governed from their cities, which also

house most industrial activities. Cities provide and fulfil nationwide activities and roles, which are often expressed as solely urban outputs. In general, African countries and cities need to ensure that they are resilient to the impacts of climate change through technologies that are appropriate in economy and scale to suit each city's specific needs. The relevance of adaptation in African cities is underscored by the number of mayors who committed their local government to implementing the *Durban Adaptation Charter* which was adopted by the Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC) in 2011.

Lessons learned in pioneering local adaptation planning programmes (e.g. the *Sub-Saharan Africa Five City Adaptation Network*[92]) indicate that the integration of adaptation planning and strategies for disaster risk reduction must be geared to achieving development priorities. Initial cost-benefit analyses show that ecosystem-based adaptation strategies and community-based and institutional responses might have advantages in enabling sustainable responses over capital intensive infrastructural solutions.[93]

Institutional Fragility

Key outcomes of institutional fragility in Africa include fragmentation between different spheres and levels of governance; tedious bureaucracy; lack of fiscal decentralization; corruption; political cronyism and nepotism; and private sector coercion, coupled with a severe lack of skills, technologies and organizational cohesion that are typically required to deliver successfully at scale. African institutional fragility can combine in various ways resulting in significant variance in local behaviour and conditions from one city to the next. In Eastern Africa resource scarcity threatens to exacerbate ethnic conflicts, while in Western Africa narcotics and child-trafficking exist in large measure.[94] Evictions and segregation are commonplace in Cape Town, Nairobi, Kinshasa and Harare.

Non-state Actors

Rebel groups target cities because control of these gives significant leverage in negotiation with central governments. Transboundary[95] cities, such as Goma on the Congo and Rwanda border, are especially vulnerable to conflict. In 1994, Goma received one million refugees who fled conflict in Rwanda.[96] A takeover of Goma by militants known as the Movement of 23 March in November 2012 required the response of regional and global actors. The fragility of the city is in part due to this vulnerability, despite the resilience of its residents in negotiating the duality of border existence.

Religious radicalization also plays a key role in generating conflict in African cities and regions alike. The Somali capital, Mogadishu, has endured the ravages of conflict, and the armed Islamic radical group Al-Shabaab occupied territories within the city until it was forced out in August 2011. The northern districts of Mogadishu are run by militias and vigilante groups, with murder and other forms of violence continuing to plague the city.[97] In response to the Kenyan army moving into Somalia, Al-Shabaab has undertaken further attacks in Kenyan cities such as Mombasa and Nairobi, with the September 2013 attack on the Westgate Shopping Mall receiving global media attention.

Boko Haram, a radical Islamist group in northern Nigeria has killed no fewer than 2,800 people. On 20 January 2012, over 180 people died in a series of state building bombings and armed attacks on civilians and government officials in the city of Kano, for which Boko Haram claimed responsibility. Religious conflicts in informal settlements in Lagos and Kano are likely to increase as a result of increased residential segregation, as well as lack of accountable, local governance structures.[98]

Mali, which recently underwent a *coup d'État*, has also experienced city invasions from secular and Islamic rebel groups, which are also in conflict with one another. During their brief occupation of Timbuktu, the Islamic rebels, known as Ansar Eddine ("defenders of the faith"), destroyed World Heritage sites and artefacts in this ancient town.

State and local institutions are ill-equipped to deal with conflict, whether emerging from forces external or internal to the city. Grenade attacks occurred in Kigali in December 2008 and January 2009, as well as February, March and May of 2010,[99] despite the modernization thrust of the state and city governments. These attacks threatened to destabilize the progress that had been made towards reconciliation and reconstruction in Rwanda.

Autonomous and "no-go" zones exist within city slums and informal settlements that effectively lie outside local and central government control. These include Bonaberi (Douala), Camp Luka (Kinshasa), Kanu (Abuja), Kibera (Nairobi), Soweto (Johannesburg) and also the "Jesus our Saviour" settlement in Lagos; all fall outside of the control of formal authorities and exercise a high level of self-governance. However, urban fragility is merely a reflection of state fragility and constitutes a security and developmental problem.[100]

Financial Capacity

Local authority governance in urban Africa often suffers under decentralization of responsibilities without adequate fiscal decentralization.[101] However, even when finances are available, mismanagement of funds, lack of service delivery and implementation of projects are commonplace. This is generally due to skills shortages within urban governance institutions. At the same time, the prevalence of informal systems of land settlement, housing acquisition, vast unplanned slums and informal settlements further compound the challenges of municipalities unable to collect adequate taxes.

The consequence of municipal financial insecurity is weak institutional capacity to act, adapt and react to circumstances, particularly where service provision is concerned. With 300 million Africans projected to suffer from sanitation shortages and 225 million lacking access to potable water by 2020, service delivery protests are key urban

threats. In 2007 and 2008 riots occurred in Burkina Faso, Cameroon, Senegal, Mauritania and other African countries in response to rising prices of food, clothing, and fuel.[102] Protests in South African cities have become commonplace, as failure to deliver housing, services and infrastructure has impacted communities who, in turn, vent their frustrations at corruption, nepotism, non-delivery and under-spending in local governments.

Lack of security is a critical issue in African cities. In Cape Town, spiralling gang violence has prompted communities to request deployment of the South African National Defence Force. High levels of vigilante killings (often for petty crimes such as mobile telephone theft) in Cape Town's informal settlements, such as Khayelitsha, have compelled the city government to adopt community-level participative approaches to resolve the crisis.

Some African institutions are hampered by outmoded leadership styles and display a reluctance to engage with innovative ideas. Yet this is what is required of all African institutions to respond successfully to multiple present and future challenges. In most sub-regions, cities will likely provide the opportunity to take a lead in development. As such, government, business and civil society leadership within African cities must embrace new, progressive ideas about how to engage with the key urban challenges that they face in the twenty-first century. Tendencies to replicate planning approaches that were conceived for cities in developed countries often result in piecemeal applications that fail to integrate into the local socio-economic and cultural context, despite grand master plans that emulate Western-style urban development planning.[103] What is clear is that "more of the same" strategy will not yield the required changes, and strong leadership at local, national and regional scales is required to shift the focus of African urban development onto newer, locally customized trajectories.

Institutions also suffer from lack of integration and coordination between sectors, different agencies, and within government departments and municipalities. Their efforts are mostly piecemeal and interventions in one sector can often be at odds with the intentions of other government departments. For example, the choices that are made in respect of transportation systems affect all sectors within a city, either increasing or decreasing reliance on petroleum and diesel (energy sector); improving or stifling access and mobility within the city; increasing or decreasing the cost of goods; and increasing or decreasing air pollution and emissions of greenhouse gases.

There are also vast gaps in available urban data in Africa and many cities remain without analyses of spatial change, material flow changes, service provision or public satisfaction levels etc. There is a dearth of information from which to make intelligent governance decisions and from which to pre-empt escalation of emerging or existing problems. Instead, short-term priorities prevail, hindering more sustainable developmental trajectories. As a result of a lack of information, and institutional and financial capacity, many African cities are unable to respond adequately to disasters.

To achieve greater urban stability and resilience, it is critical to: (1) recognize national and local fragility as a development and security challenge; (2) improve the capacity and accountability of local governance; (3) boost livelihoods and incomes; and (4) improve security of land tenure, especially for those living in slums and informal settlements with insecure land tenure where any.[104]

The Political Economy of Urban Underdevelopment

Maintaining order and promoting inclusive, sustainable development in cities requires concerted public action to mediate conflicts, minimize negative externalities and maximize the benefits associated with size, density and diversity. While rapid urban population growth has often overwhelmed the human and fiscal resources of urban authorities, the scope of public action is not only determined by resources; it is also a function of politics.

Indeed, one of the most common explanations for urban underdevelopment is that there is a fundamental lack of political will to establish the institutions, implement the policies and make the investments necessary for cities to thrive. However, this explanation is insufficient. In cities across the region it is often vested interests that are to blame for public inaction.

Under-regulation and underinvestment in urban areas create profitable opportunities for political and economic entrepreneurs. Squatters on public land often acquire a degree of tenure security by offering money or political support to local power brokers (such as traditional authorities, politicians, police personnel or bureaucrats)

TABLE 1.2: **PROJECTED POPULATION DYNAMICS OF AFRICA'S TEN MOST-POPULOUS CITIES (IN 2015), 1985-2025**

	Percentage of countries			
	Raise	**Maintain**	**Lower**	**No intervention**
1976	0	0	49	51
1986	0	0	48	52
1996	0	2	54	44
2007	0	0	77	23

Source: United Nations (2010) World Population Policies 2009, New York: United Nations, Department of Economic & Social Affairs.

in return for protection against eviction. In areas where water infrastructure is deficient, informal providers make handsome profits selling water - often untreated - at inflated prices. Deficiencies in public transport systems have given rise to a multibillion-dollar informal transport industry, often controlled by politicians. In other words, informality and inadequate infrastructures allow powerful groups to benefit from the status quo.

Effective urban governance can also be corrupted by international influences. The globalized nature of food, energy and financial markets renders cities vulnerable to politically destabilizing economic shocks. Organized criminal and terrorist networks depend upon the logistics, finance and communications infrastructure that cities provide. Where law and order is weak, these organizations can gain a foothold and influence policy, investments and regulations to their advantage and at the expense of citizen welfare. This has become a particular concern in West Africa and the Sahel, where a combination of chronic poverty, fragile political institutions and proximity to European markets has given rise to organized crime in recent years.[105]

There is, however, a more subtle but highly significant international influence that has contributed to apathy and neglect in the face of rapid urban population growth: the discourse of international development.

The Need for a New Urban Development Paradigm

Up to the 1960s, urbanization was largely associated with human progress and "modernization", with urban and regional planning at the heart of development strategies and development aid. However, in the late 1970s there was a profound shift in the ideas of development scholars and aid agencies. Cities were increasingly portrayed as parasitic islands of privilege, and urbanization in many developing regions - particularly Africa - came to be seen as socially destructive and an obstacle to economic development.[106] As a result, international support for urban development initiatives waned in the 1980s and 1990s, while governments increasingly adopted policies to restrict rural-urban migration (Table 1.2). In many cases, increased investment in rural areas was justified on the grounds that it would reduce urban poverty by encouraging people to stay in the countryside. These strategies have had little discernible impact on urbanization in the region because they were based on flawed theories of urbanization and development.[107]

The anti-urban turn in development theory coincided with the emergence of a neoliberal paradigm in the international development community that emphasized the primacy of markets (as opposed to states) in stimulating and sustaining economic development. Across the global South, governments were actively encouraged - and in many cases coerced through structural adjustment programmes - to cut public expenditure, privatize state assets and services, and scale back public regulation. In this atmosphere, urban and regional planning was generally sidelined despite the unprecedented growth rates of Africa's urban population.

Africa and the world community need to rethink what constitutes a "city" since the Western concept is no longer the sole legitimate template for its application in Africa. There is need to "re-imagine the African city" by creating new paradigms for modern African urbanism.

Urban economic growth in Africa has, so far, been mirrored by varying and increasing levels of urban poverty, inequality, inefficiency and concomitant impacts on vital renewable and non-renewable natural resources. Planning and financing for sustainable urban growth are therefore priorities that can generate opportunities towards higher employment elasticity, secure ecosystem services and affordable public services.

African cities may have a competitive advantage because their development could leapfrog conventional urban development paths to greener urban economies. All approaches to "Greener Cities" and the "Green Urban Economy" should focus on climate change adaptation opportunities through understanding the value of ecosystem services and improving energy- and material flows and loops. Caution is required, however, to avoid the often unintended consequences of the application of "expensive green techno-fixes", as there are concerns that budgets are being diverted from needful communities to provide elite green enclaves that entrench inequalities.[108]

There exists a real opportunity to cultivate an inclusive vision through identifying and embracing a new suite of paradigms that is appropriate to address the present day and future needs of African cities. These may incorporate aspects of "Western models" of engaging the challenges of increasing poverty and the urban poor. Since urban poverty is not a passing phase, alternative growth paths and scenarios need to be identified, analysed and interpreted to improve resilience and adaptation of African urban populations within the narrative of sustainable development. Numerous programmes and models exist for assisting the initiation and implementation of such visions. These programmes include those of Cities Alliance, Slum/Shack Dwellers International and the Urban Poor Fund International, as well as opportunities to review and renew governance through locally appropriate adoption and adaptation of the Lagos Model and the Kigali Plan of Action (and Kigali Declaration).

Planning theory in past African urban studies had been focused on removing informal development rather than identifying, and rectifying, existing segregatory practices. The rate and scale of urbanization in Africa requires a balance between embracing informality while planning for sustainable services delivery. The systemic drivers of dysfunctionality need to be rectified, which requires focus on urban reform, accountability and effective data analysis.

Sustainable urban planning is necessary to eliminate the causes of segregation and exclusion. Urban planning needs to review how investment is made in African cities to enable adaptive planning and management that is risk averse, pro-poor and sustainable.

1.3
Re-imagining African Urbanism

▲
Cape Town, South Africa, is often referred to as 'Africa's most liveable city'. **© /Shutterstock**

Harnessing Trends

Profound sociocultural, economic and political changes accompany urbanization in Africa which, around 2035, for the first time will cause the larger share of political constituency to reside in cities. Broad themes identified on African urbanism relate to aspects of colonial aftermath; increasing informality; socio-political exclusion; urban governance and service provision; warfare, violence and disease; connectivity; and urban culture.[109]

Africa is transitioning towards a whole new socio-economic and political landscape through urbanization. But African urban residents are amongst the poorest in the world and lack opportunities for improvement. Urban infrastructures, services and land markets cannot absorb newcomers at present rates of urbanization. Urban unemployment levels are dangerously high, especially amongst youth.

Improving the capacity of African cities to absorb population growth is one of the key challenges. Multiple considerations can be made in this regard, including:

- How should African cities negotiate the technological and infrastructure choices required to improve urban sustainability and liveability?
- What spatial patterns are most suitable for African cities in different regional contexts?
- How should resources and material flows be managed in and through African cities?
- How can liveable, safe and prosperous urban locales be developed within Africa?
- How can city development programmes alleviate urban youth poverty?
- How can African cities embrace social-, cultural- and economic pluralism and benefit from diversity and diversification?
- How can landlocked African cities improve their access to trade routes and the sea?
- How can migration be leveraged to improve the skills and labour bases of African cities?

- How can African cities and their poor households be made more resilient to exogenous shocks, especially in the costs of food, goods and services?

In the following sub-sections, key global, regional and local trends that are emerging in respect of African cities are explored with discussion on how the considerations listed above can be met by harnessing emerging trends.

The Demographic Dividend

African cities generally feature high rates of growth and relatively youthful populations. The two most desirable outcomes of the youth bulge are that it should constitute a large labour force, which can drive development, as well as provide a large emerging urban consumer market with global and regional relevance. The key challenges regarding Africa's youthful labour force include:

- Putting in place policies and mechanisms for greater inclusion of the youth in formal sector activities, as well as recognizing and supporting the potential for informal sector operators to semi-formalize their activities over time
- Improving education, skills development, literacy and vocational training opportunities for urban youth at local scales. Positive yields from the currently lagging African demographic dividend will likely only be possible if literacy and skills levels are significantly improved and match the growth trajectories of African national and local economies
- Improving mobility for African urban youth to access urban opportunities and operate beyond their immediate neighbourhoods. Spatial integration of youth constitutes a major challenge in Africa, where poor and low-income youth are marginalized or excluded from employment opportunities and are often "trapped" within their neighbourhoods by virtue of ethnic, class, religious and other types of segregation. Public transit systems should, for example, lower charges for youth
- Increasing access to information and communications technologies (ICT) which can improve access, mobility and situational awareness. This is evidenced by the "Map Kibera"[110] project, which draws on youth ingenuity and participation to influence development planning and encourage broader social inclusion in the daily affairs of Kibera (Nairobi), as well as providing more accurate population data and information for urban planning and management
- Providing diverse arenas for expression of popular youth culture and identity construction through sport, creative and other participation-oriented channels to ensure social change is shared, understood, and appreciated as part of the broader urban culture and identity of African cities. For example, the colloquial Swahili adopted by Tanzanian youth, especially in Dar es Salaam, should be drawn into the culture of the city rather than disparaged. Closing the generational gap requires sociocultural bridging mechanisms, so that a broader dialogue ensues within cities about rights and identity
- Developing youth citizenship is a necessary step in improving youth inclusion in African cities[111] by increasing the membership of youth into grassroots, civil society organizations as well as facilitating their involvement in urban development planning and management. To foster youth inclusion in communities and urban society, prepare and implement policies which stimulate youth-oriented civil society mobilization as well as youth inclusion in public, private, and especially joint public-private development initiatives in cities
- Stimulating youth involvement in urban agriculture, perhaps one of the most neglected opportunities in African cities, largely practised by the informal sector without the explicit support of city governments and the state. Despite their critical role in African urban food security, informal urban agriculturalists are mostly tolerated rather than supported. In this respect, the protection of valuable urban agricultural lands from encroachment is a linked challenge, one which requires a response to the broader challenges of unplanned informal settlement growth.

Youth-driven protests that sparked the onset of the Arab Spring (see Box 1.5 and Chapter 2) in highly urbanized Northern Africa have the potential to move into south of Sahara, where similar youth bulges and unequal social conditions persist. Marginalization and exclusion of youth from broader society and opportunities within the urban socio-economic fabric threaten to bring about even more severe reactions in sub-Saharan Africa. The youth are pivotal to sociocultural and economic change in Africa. Direct and inclusive measures are necessary to harness this role to realize the most beneficial outcomes to society, including the manner in which the future of urban African societies unfolds. This has potential to contribute positively if guided appropriately. If not, the consequences for stability in African cities may be dire.

Economic Growth Trends

Africa's GDP in 2008 was USD 1.6 trillion with a total consumer spending of USD 869 billion.[112] Continental GDP is projected to rise to USD 2.6 trillion, and consumer spending to USD 1.4 trillion by 2020.[113] Africa's GDP growth between 2000 and 2008 was evenly spread across a range of sectors, with resources in the lead at 24 per cent, followed by wholesale and retail at 13 per cent, transport and communications at 10 per cent and manufacturing at 9 per cent (Table 1.3).

The compound average annual growth rates of these sectors were also high, ranging between around 4 per cent and 9 per cent for all sectors (see Table 1.3). These high rates of growth are attributed to improvements in political and macroeconomic stability and microeconomic reforms,

TABLE 1.3: **SECTOR SHARE OF CHANGE IN REAL GDP BETWEEN 2002 AND 2007**

Sector	Share of Change in Real GDP (Per Cent)	Compound Average Annual Growth Rate (Per Cent)
Resources	24	7.1
Wholesale and Retail	13	6.8
Agriculture	12	5.5
Transport and Telecommunications	10	7.8
Manufacturing	9	4.6
Financial Intermediation	6	8.0
Public Administration	6	3.9
Construction	5	7.5
Real Estate and Business Services	5	5.9
Tourism	2	8.7
Utilities	2	7.3
Other Services	6	6.9

Source: Global Insight; Arab Monetary Fund; McKinsey Global Institute: in McKinsey 2010, 2 Exhibit A.

and to adopting policies that energize markets, including the privatization of state-owned enterprises, reduced trade barriers, lower corporate taxes and boosted regulatory and legal systems.[114] Despite these measures poverty persists and inequality has worsened, especially in countries that have experienced high growth rates such as Mozambique and South Africa. Bloemfontein, Buffalo City Metropolitan Municipality and Johannesburg (South Africa) have some of the highest Gini coefficients[115] in the world.[116]

Global Flows of Investment into Africa

The resources sector has traditionally played a key role in African economic performance and growth. The long-term implications are that resource depletion will likely take effect in African economies by 2060. Consequently, strategies for diversifying economies, particularly city economies, are of paramount importance in negotiating a more resource-scarce future in previously resource-abundant areas. Africa's most diverse economies are Egypt, Morocco, South Africa and Tunisia. In these countries, sectors like banking, construction, retail and telecommunications contributed to more than 70 per cent of GDP growth over the past decade. The least diverse economies in Africa are oil and gas exporting countries. Algeria, Angola and Nigeria alone earned revenues of USD 1 trillion between 2000 and 2008 from petroleum exports.[117] In these countries manufacturing and services account for only one-third of GDP growth on average.

Investment flows into Africa and its cities are projected to rise in the medium term. Returns on investment into Africa between 2004 and 2008 were higher than anywhere else on the globe.[118] In addition, labour productivity has risen by 2.7 per cent per annum between 2000 and 2010.[119] By 2040, Africa's youth is projected to constitute the largest labour force in the world at 1.1 billion, surpassing China and India.

By 2020, growth in Africa is projected to create consumer markets of sufficient size and spending power to attract multinational companies. It is projected that four opportunity categories (Table 1.4) could be worth USD 2.6 trillion by 2020. These include consumer facing, resource driven, agriculture and infrastructure sectors. The consumer-facing sector constitutes just over half of the revenue, with a compound growth rate of 4 per cent per annum (Table 1.4).

Indeed, many multinationals have already entered Africa in expectation of this boom, and more are expected to follow. The key attraction for multinationals looking to forge new customer bases is the global significance of the large consumer markets. Cities play a key role in producing this consumer base. By 2020 Alexandria, Cairo, Cape Town, Johannesburg and Lagos will individually have household spending powers exceeding USD 25 billion per annum, while a dozen other cities will have consumer markets with spending powers of USD 10 billion per annum.[121] These constitute key opportunities for global investors and speculators, and as the world's economically third fastest-growing region,[122] Africa will undoubtedly attract their attention as a prospect for investment, if political and economic stability levels can be guaranteed and cities hold significant power in determining the future trajectories of economic growth on the continent.

Infrastructure investment and sector growth in Africa is significant, especially as infrastructure development will occur largely around service provision in cities and towns as well as improving connections between them (particularly inland-coastal connectors). Infrastructure is projected to grow at the highest level – by 9 per cent per annum – between 2008 and 2020 (see Table 1.4). Currently, Africa's infrastructure services are twice as expensive as elsewhere around the world,[123] indicating demand pressure. An estimated USD 93 billion per annum is required to meet infrastructure needs, of which a third is for maintenance alone.[124] Currently, infrastructure spending in Africa is around USD 72 billion, and private investment in it grew from 7 per cent in 2000 to 13 per cent by 2010.[125] Nonetheless, the scale of investment

TABLE 1.4: **INDUSTRY OPPORTUNITY GROUPS PROJECTED TO REACH USD 2.6 TRILLION IN AFRICA**

Industry Groups	Estimated Annual Revenue in 2020 (in USD Billions)	Growth Between 2008 and 2020 (in USD Billions)	Compound Annual Growth Rate Between 2008 and 2020 (Per Cent)
Consumer (goods, telecoms, banking etc.)	1 380	520	4
Resources	540	110	2
Agriculture	500	220	5
Infrastructure	200	130	9
Total	2 620	~980	4

Source: McKinsey Global Institute.[120]

required to meet power, water and transportation needs is around USD 46 billion per annum,[126] and power is the greatest challenge.[127]

Infrastructure investments represent a significant area of future development in African cities, precisely because many of them lack basic infrastructure or, where they exist, are struggling to keep up with demand. How these investments are made would determine how multiscale and multilevel the economic activities that proceed from these large investments will ultimately become. The cities that adopt new spatial planning trajectories that depend on particular infrastructure choices will lock themselves into patterns of growth. This is especially the case where centralized bulk infrastructure offerings are compared with semi-decentralized and decentralized infrastructure and technology offerings. Different solutions may fit different local contexts more appropriately, but in the African urban context decentralized and semi-decentralized offerings have significantly more traction, precisely because they are able to operate independently of large centralized infrastructures, which city and national governments generally struggle to maintain due to lack of finances and skills.

Regional Linkages and Investment Flows

Investment flows into Africa are often intimately tied to former colonial relations, but intra-African city linkages can also be important. Mogadishu, for example, is heavily dependent on the decisions made by Somali traders in Nairobi. The mayor of Mogadishu has complained that Nairobi exerts too much control over his city, referring to the Somalis who have settled in Nairobi to escape war in their country.

Regionalism is vital to introducing change in Africa and developing new linkages among its cities as well as with global markets and emerging world economic powers. Motorists in landlocked Johannesburg, for instance, take just four hours to drive to the Mozambican port city of Maputo. This regional linkage between South Africa and Mozambique, once dictated only by a shared river catchment and water supply, has expanded into a transboundary trade region. Since the closest South African harbour town to Johannesburg is eThekwini Municipality (Durban), a six-hour drive, Maputo is likely to attract port business from Johannesburg provided Maputo's capacity and support for trade, industry and port activity improves. In the near future, it is conceivable that tourism between Johannesburg and Maputo might be restored to, or even surpass, its former level.

Through mobile phone use, Internet connectivity has increased.[128] The mobile revolution has played a role in governing urban slums such as Kibera (Nairobi)[129] and may eventually spread to a range of other sectors including health, agriculture, energy and education. Identified trends, which are predicted to fuel new business growth, include geolocation and mobile money; for example, money transfers and microcredit schemes. These allow for better monitoring and securitization of assets at lower data costs and improved reliability.[130]

The growth of Africa's energy sector is a prerequisite for sustained expansion in all others. Large energy projects have included the development of the Inga hydroelectric dam on the Congo River; the Desertec consortium-led establishment of 100 large concentrated solar power plants in the Sahara; wind farms in South Africa, Namibia and the Rift Valley; and the continued development of the fossil fuel sectors in Central and Western Africa, and the Republic of South Africa.

Investment in renewable energies and green technologies globally has surpassed all other conventional and emerging technology sectors (see also Chapter 1.1). The green technology revolution is likely to be the next global industrial transition.[131] Africa and Asia constitute the largest clients for these new services, as demand for energy- and resource-efficient technologies will be huge in their rapidly growing and expanding cities. Yet the question of whether all new technologies can successfully take root in developing African cities remains open since affordability and appropriateness have not been adequately assessed.

Developing and Financing Paths to Green Growth

A green economy may be defined as one that "results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities".[132] Any green development strategies undertaken in African cities must primarily recognize that development is a key priority for the urban citizenry, the majority of whom

often reside in slums and informal settlements that lack infrastructures, services, urban planning and management (see also Box 1.6). The dual goals of green urban development in Africa must be to meet these compelling needs through appropriate urban design, planning and management, as well as through the deployment of sustainable, low ecological footprint, infrastructure and technology. Green development in African cities must thus engage with these dual goals as mutually inclusive priorities.

Global funds can play a key role in facilitating sustainable urban development in Africa. It may be worth establishing a fund for African green urban development that can be accessed and leveraged by African central and local governments. The African Development Bank issued clean energy bonds in 2010.[133] Municipal bonds can play a key role in attracting finance for the introduction of clean energies, transportation, waste and other systems at local scales, but lack of skills among local authorities may be a major obstacle. Microfinance that targets the urban poor can also play a key role in this respect.[134] Africa's central governments must also reorient urban development trajectories and can play a key enabling role by prioritizing programmes aimed at green and sustainable growth. At local, city and national scales, the public sector has the potential to catalyse the private sector financial flows, and expertise needed to deploy to service green development.[135]

Local funds, although limited, can be leveraged and decentralized development (city to city) cooperation might be able to play a strong role in ensuring funding and expert support for local urban development in Africa. City-scale carbon banks (e.g. the Gwangju Carbon Bank in South Korea) may become viable should the price of carbon stabilize. Post-2012 carbon finance seems guaranteed in the short and medium terms; five leading European public financing institutions have established a EUR 125-million post-2012 Carbon Credit Fund.[136]

While carbon markets have showed signs of instability, there are no indications that the establishment of a carbon economy will be halted. It is viewed by some as a necessary instrument for large-scale conversion to low-carbon activities and by others as an "unstable financial risk" management instrument. Although carbon funding is difficult to access, it is one of many mechanisms that can be harnessed to catalyse much-needed scaling up of urban infrastructure projects in African cities.

Significant private sector interest has also emerged in response to Africa's high potential for the application of renewable energy technologies. Smaller systems for households include solar water geysers, smart grids, closed-loop sanitation, and biowaste-to-biogas systems. The sector can attract private investment, and participate alongside regional, national and local governments in diversifying energy markets.

The African Development Bank is well-positioned to facilitate this convergence and is already involved in many continent-wide non-renewable and renewable energy programmes. Given renewable energy's global significance, African cities and national governments must apply these technologies and develop the skills base required to be innovative and competitive.

Renewable energy is especially relevant for African cities, since they have the greatest need for local, decentralized energy capacity. These technologies can best be deployed, tested and improved within African urban environments, where the skill- and labour bases to implement decentralized systems are greatest. Given the projected demand for decentralized energy in African cities, the market for these technologies will ensure the growth to make these operations viable.

Good governance is essential to the successful development and growth of inclusive and well-managed cities. It is inadequate to depend on finance, technology and/or expertise alone.[137] UN-Habitat supports enabling approaches which rely on decentralizing authority, functions and fiscal responsibilities to local levels to ensure subsidiarity and accountability; to promote the inclusion and participation of civil society in the design, implementation and monitoring of local governance; encourage wide ranging partnerships and supportive networking across multiple levels of governance; as well as adoption of modern technologies to help improve efficiency and reduce cost.[138]

The Politics of Inequality

Urban politics will begin to dictate overall African politics in the medium and long-term as the level of urbanization increases. Participatory governance in urban Africa, or lack thereof, will likely determine the quality of politics and political action in the future. Cities are the engines of political and sociocultural change that will transform the polity of every African country with a high level of urbanization. Discovering and developing new modes of cooperation in urban political constituencies may well turn out to be a "politics of daily issues", where these coalesce around local problems with which they are particularly concerned.

Perhaps the greatest challenge to urban politics in Africa is the inequality that characterizes the "urban divide",[139] with urban dwellers highly segregated by class and ethnicity. Typically, African cities are economically controlled by small political or economic elites, while the vast majority of dwellers eke out a mere survival. Spatially, the urban divide in Africa is reflected in the high slum and informal settlement incidence. Inappropriate or deficient urban infrastructure and spatial planning choices can increase costs of municipal transportation, water, sanitation, waste removal and electricity services, and hamper the quest for more sustainability and liveable cities. Basic urban service and infrastructure provision may dominate urban politics to the detriment of greater political visions. The politics of the "here and now" is more immediate where the struggle for survival is a daily reality for millions of urban Africans, and where public protests over lack of service delivery or exploitative prices take priority over grander political goals.

Cultivating inclusive visions of African urbanism requires

BOX 1.6: **EXAMPLES OF URBAN GREENING STRATEGIES IN AFRICA**

▲
A Bus-Rapid-Transit stop on Market St, Johannesburg. **©Jeppestown.** Licensed under the Creative Commons Attribution ShareAlike 2.0 Generic License.

An example of a nationally driven greening strategy is the solar water heater geyser rollout programme that is being undertaken by the South African government. City examples include the establishment of bus-rapid-transit systems in Cape Town and Johannesburg in South Africa, and Lagos in Nigeria. With the support of national governments, a light rail system has been introduced in Johannesburg, while others are under construction in Addis Ababa, Ethiopia, as well as Lagos and Abuja.

Ecosystem-based development priorities have been adopted by some African cities. Cape Town and Addis Ababa have turned their focus to managing the mountain and river ecosystems that play an integral part in the provision of key ecosystem services to these cities (e.g. clean water and fuel wood). Accra (Ghana), Addis Ababa, Cape Town, eThekwini and Johannesburg (South Africa), Kampala (Uganda) and Nairobi (Kenya) have established priorities for green growth, but are grappling with the challenge of how to prioritize pressing development needs and challenges with making choices that ensure medium- and long-term sustainability.

bridging the politics of inequality to tackle and improve the operations of formal and informal urban institutions. African urbanism needs to be rethought "from the slums", as that is where the majority of urban dwellers live - and will continue to live as long as the capacity of cities and the political will to accommodate them are absent.[140] Engaging formal and informal systems to bring about more sensitively regulated and monitored economies that are fair and supportive raises a particular challenge; it requires that new modes of governance be negotiated with the greater social majority over whom they govern. The participation of communities in their own development choices is an increasingly attractive option for those seeking to bring about more active political constituencies in urban Africa. All too often, however, participation is weakly employed as a coercive mechanism to consolidate political power. Politicians make promises they fail to keep, thereby risking urban political disengagement and potentially inviting community power exercised in alternative ways, including public disobedience, social unrest or violent conflict.

Enabling participatory models of governance will require some incremental learning and revision. Realizing participatory governance may require a transition period, when models are tested and refined in different urban contexts. It will be important to promote peer learning by making analyses available and evaluating progress. Professional and expert

networks may be required to build the information, data and knowledge base from which the trajectories of different urban locales can be assessed and evaluated. These networks should be extended to include stakeholders. Participatory processes require strong feedback mechanisms between communities and institutions. Top-down strategies for urban change require grounding in grassroots realities, which is the primary role of participatory processes. A secondary, but equally beneficial, role is the engenderment of political constituency at the grassroots level.

Organizations such as Slum/Shack Dwellers International[141] and African affiliates such as the Ghana Federation for the Urban Poor[142] have implemented participatory-based development planning that employs peer-to-peer learning and exchange as a vehicle for replication and scaling up. These projects are usually focussed on specific local settlements and their needs. They engage directly with the urban poor in mobilizing savings, establishing skills and management capacity within communities, and facilitating partnerships between poor communities and municipalities wherein community-led development agendas take precedence. In Kitale (Kenya), the "Building in Partnership: Participatory Urban Planning" project worked with government agencies, civil society and the private sector, demonstrating that neighbourhood level participatory processes can be scaled up to municipal levels.[143] In Accra (Ghana) participatory water governance has been facilitated through establishing Local Water Boards to help overcome disproportionate access and exclusionary practices at local levels, as well as resolving difficult, conflicting demands over access to water.[144] Mainstreaming these community-led approaches more broadly, however, still requires concerted effort from funding agencies, local authorities and city governments that use the learning and momentum of such projects to broaden the scope of participatory governance in African cities.

Planning for Human Security

Planning for human security in African cities involves engaging with a wide range of destabilizing factors such as socio-spatial segregation, religious and youth radicalization, war, as well as transnational trafficking and crime.

Functional diversification (e.g. separation of residential and industrial zones) as well as history, class and ethnicity can play roles in urban segregation. With high rates of urban growth, however, segregation along class divisions will increasingly impose undesirable spatial segregation patterns and urban fragmentation. Overcoming this in African cities requires rethinking urban systems such as formal and informal public transport and putting in place systems that enhance mobility. This is particularly important for the urban poor who are generally those who must travel farthest to places of work, as well as to access services such as healthcare.

Overcoming spatial segregation requires engaging with all sectors of society, promoting inclusion in urban governance and development decisions, especially at local scales. It requires sharing the diverse opinions without fear or favour on matters critical to the citizenry and which requires inclusion to be resolved. Segregation is fed by particular perceptions of otherness, including fear, which can only be overcome through dialogue and inclusion, even if that may be difficult at first.

Climate Change and Disaster Risk Vulnerability Mapping

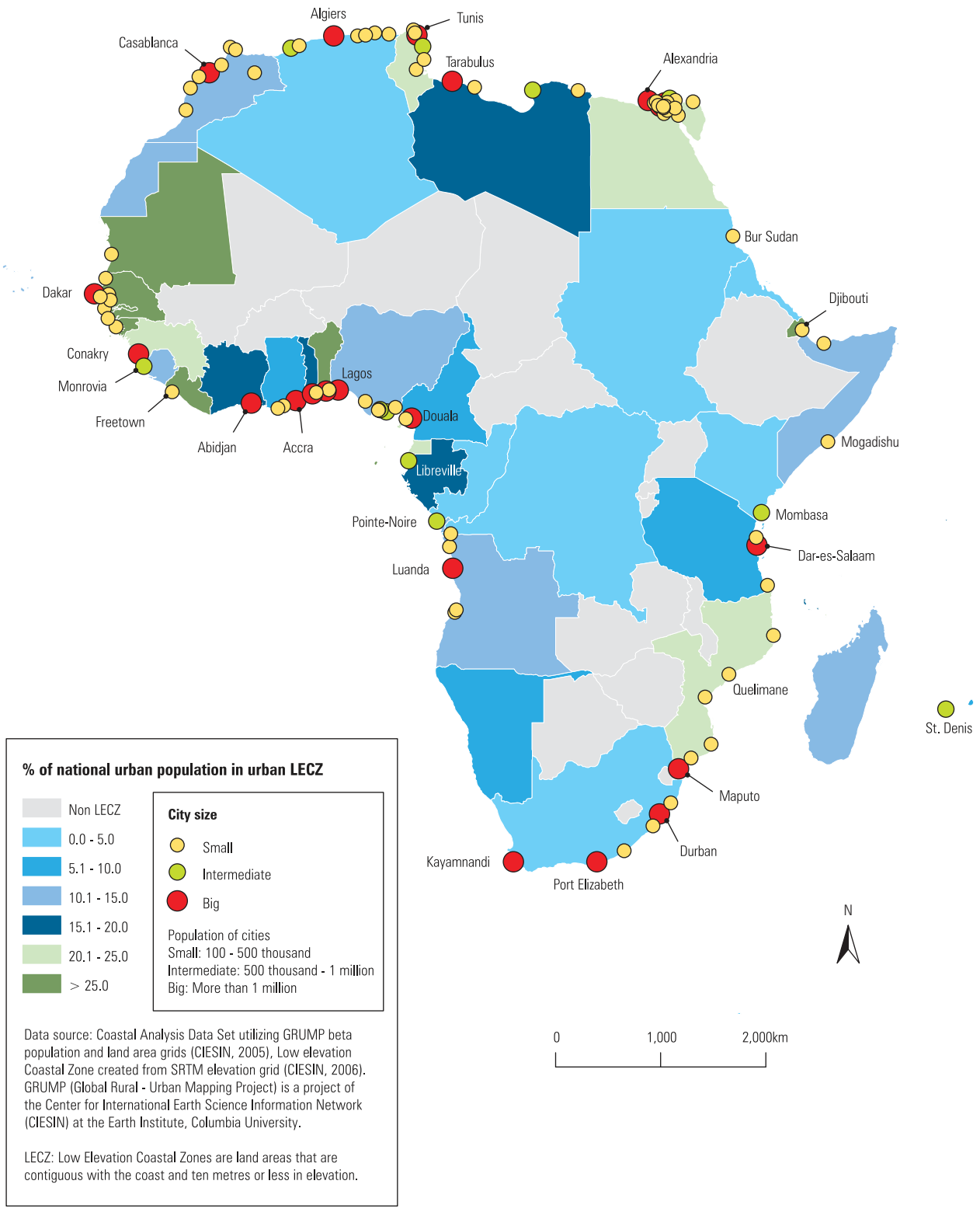
Africa is projected to be the world's region worst-affected by climate change due to pre-existing vulnerabilities and dependence on rain-fed agriculture.[145] Drying and desertification due to climate change constitutes one of the significant threats, since over 40 per cent of the continent receives less than 400 mm of rainfall per year. Understanding regional variation in vulnerability to climate change impacts is critical to informed decision-making at city scales. Accurate city-regional-scale modelling of climate change variations is necessary to plan for climatic extremes that may affect a city within the modelled region or sub-region, as specific contextual factors differ significantly from one city to another depending on location and other factors. In general, however, climate change introduces greater levels of variability and uncertainty into urban planning and development. Climate change impacts can also combine with other global or local change effects to produce unexpected outcomes. Planning for climate change thus requires greater appreciation of how this phenomenon integrates with other factors (e.g. changes in the global economy, or specific local factors) to impact at local scales. It also requires that urban planning and development are focussed on producing urban systems that have greater capacity to absorb shocks and adapt to impacts. Detailed discussion of the sub-regional impacts of climate change in Africa is included in the respective sub-regional chapters of this report.

Mitigation requires improving efficiencies in existing systems for reducing greenhouse gas emission;[146] for example through recapture (sequestration), recycling and reuse. Improving energy efficiency would constitute a key by-product of emission strategies.

Climate change adaptation focuses on how societies and economies may moderate the impacts of climate change, thus building adaptive capacity is a logical and appropriate response. Decentralization, whether of technology or governance, is essentially an adaptation. Its purpose is to build and reinforce adaptive capacity at local scales. It is critical to engender local resilience with supportive conditions. However, since the climate change threat is simultaneously global, regional and local, responses must be implemented at all levels. Regional and national cooperation is critical[147] for appropriately framing and funding local responses, combining top-down and bottom-up responses. Cities need multilevel governance strategies, including strong national policies; more experimentation at local scales; close cooperation between local and national authorities; and cross-sector regional and urban strategies to respond adequately to threats.

In urban Africa, climate change presents a very real and

MAP 1.1: **AFRICAN CITIES AT RISK DUE TO SEA LEVEL RISE**



Source: UN-Habitat Global Urban Observatory 2008.

immediate threat, not least because many large cities lie along the coast and are especially vulnerable to sea level rise, saline penetration, storm surges, flooding and coastal erosion. Additionally, cities in more remote areas are prone to climate change impacts such as failed crops and rising energy costs that can cause price hikes and food scarcity.

Building adaptive capacity at all scales is essential for ensuring future urban climate resilience. Participation and inclusivity are key elements of boosting adaptive capacity at local levels, to aid identification of the key existing and potential vulnerabilities in specific locales, and to link short-term priorities to long-term plans. Critically, climate change needs to be factored into all areas of development planning and not treated as a separate development issue. This requires building of the institutional capacity to identify and act upon the critical linkages that enable adaptation. For example, greater socio-political cohesion and stability will be achieved by harnessing cooperative and competitive linkages for greater economic cohesion and by strengthening inclusive processes of governance. Urban risk reduction policies can yield mutual benefits[148] including *in-situ* upgrading of informal settlements; zoning to protect areas at risk; development of new, less risk-prone land with efficient transport systems; and promotion of densification in urban areas.

Disaster Risk Reduction

Disaster records for Africa between 1974 and 2003 (Table 1.5) indicated that the East was worst hit while the central sub-region had the lowest incidence. The data further showed that the frequency of disasters in Africa was increasing.[149] Large-scale climatic phenomena, such as the El-Niño Southern Oscillation, introduce uncertainty into forecasts of weather variability for the region. As a result, climate change impacts are difficult to project reliably. Yet natural drivers of disaster are only part of the reason for Africa's particular vulnerability. Weak institutional capacity, low infrastructure provision and deep poverty incidence render Africa less able to prepare for, or adequately respond to, climate change and natural disasters.

It is important to differentiate between disaster risk and disaster vulnerability. Disaster readiness or preparedness does not reduce risk but can reduce vulnerabilities and actual impacts of disasters. Some disasters can be prevented, for example, urban flooding can be exacerbated by ecological degradation of upstream catchment areas. Thus, reducing degradation and improving catchment function can reduce *risk*. Likewise, citizen drills for post-disaster situations can enhance the chances of survival of communities and individuals, thereby reducing vulnerability. Increasing adaptive capacity and internal resilience depends on the ability of urban systems to respond to sudden loss of capacity in one area of the system (e.g. energy supply failures, water supply shortages, food price increases, energy price increases). Some of the key areas that can improve internal resilience to disaster events in African cities include:

- Improving response times through establishing early warning systems – this requires monitoring and measuring (e.g. of upstream river flows and rainfall patterns)
- Compilation of simple, yet effective maps and databases that highlight, for example, areas of exposure, hazard and vulnerability, indicating probability, magnitude and frequency of possible events, as well as the population and localities most likely to be affected
- Clearly designated lines of authority in times of disaster where institutions (e.g. military, police and aid agencies) have a clear, predetermined framework of cooperation and action
- Building adaptive capacity with greater flexibility, to defend against unforeseen threats, including by establishing functional network groupings, linkages and clusters
- Adaptation strategies that directly focus on the key vulnerabilities of the urban poor.

Re-imagining African Development Trajectories

Towards Local Scale African Urban Sustainability

Sustainable development in general and development of cities in particular depend on whether economic growth trajectories are able to decouple, significantly, from wasteful resource utilization and ecological degradation.[150] This requires strategy, policy and regulatory instruments including bodies to monitor and influence the development patterns of cities. Yet decoupling alone is not enough. Development

TABLE 1.5: **EMPIRICAL RECORDS FOR DISASTER INCIDENCES IN AFRICA FROM 1974-2003**

Region/Disaster Type	Northern	Western	Central	Eastern	Southern
Natural disasters	14	24	10	41	11
Hydro-meteorological disasters	13	25	10	41	11
Geological disasters	38	7	17	31	7
Drought hazards	28	101	31	128	45
Flood Hazards	7	9	4	16	3
Volcanic disasters	0	1	6	4	0
Disasters that caused economic damage	26	43	8	58	16

Source: Adapted from Lukamba 2010 pp. 485-489.

trajectories in Africa need to be rethought and recast so that the economic, social, ecological and infrastructural dimensions of sustainability are mutually ensured in development planning, with political stability acting as the source of integration and coordination.[151] Urban development planning and governance regimes that focus only on guaranteeing material sustainability may run aground by widening inequalities, deepening poverty and political instability. Material sustainability is ultimately contingent on maintaining consumption profiles that remain within ecological, economic and social thresholds, while at the same time seeking to maintain sociocultural and economic stability.

Cities can influence footprints due to high densities and potential for maximizing efficiencies through design and management of urban material flows such as goods, data, nutrients, people and money. To achieve urban material sustainability, it is critical to consider large- and small-scale infrastructure choices. Many African cities lack adequate formal infrastructure and service provision. Therefore they are best placed to adopt new options, whereas cities in developed countries are typically locked into existing infrastructures which they must retrofit. African cities thus need to seize opportunities to leapfrog to sustainable and resource-efficient urban designs, infrastructure, technology and service provision.

How can Africa embrace a kind of urbanization that produces competitive cities that take advantage of the demographic dividend and ensure green growth? Green urban growth trajectories, if adopted now, can help enhancing the competitiveness of cities and their residents in the medium and long term. Such growth paths could be attained by reducing material use and ecological impact footprints; lowering short-term material costs and medium-to-long-term ecological ones. This can be achieved through investments and partnerships with regional and global agencies, as well as with local actors, civil society and non-governmental organizations, especially those which engage closely with youth development.

The opportunities for green growth are numerous in African urban contexts, not least because of the large infrastructure deficits of many African cities. Infrastructure choices made today in African cities will lock them into patterns of behaviour for the medium to long term. Therefore, engaging with the infrastructure requirement of African cities in a global context of resource constraint and increased global economic and climate-related uncertainties will likely prove critical to the future sustainability and equitability of African cities. There is great potential to formulate local-scale solutions that can improve living conditions in African cities through improved access to services and infrastructure, enhanced urban mobility and access to opportunities. *In-situ* development in slums and informal settlements can stimulate a transition to lower material use and to high efficiency standards. However, this requires that decentralized *in-situ* developments are coordinated for broader transition to sustainability by scaling up these developments. Energy, water, food, waste and transport are all key thematic areas for greening and sustainability in African cities.

Energy

Local renewable energy sources such as biomass, solar radiation, hydropower and wind are all abundant in Africa. Decentralizing and diversifying energy markets, and improving off-grid resilience, are likely avenues through which energy transitions in African cities can take place. For example, especially Central Africa has immense hydropower potential, which if developed, can provide in excess of 40,000 MW of energy, enough to power Africa and much of Europe. Moreover, Africa's current main source of energy is biomass, which represents an opportunity to harness renewable energy biomass technologies that convert waste to energy, as well as to compost nutrient-rich material to close nutrient loops to improve soil fertility.

Decentralized renewable energy security technologies (e.g. biogas digesters, solar water heater geysers, solar photovoltaic panels), energy retrofits (e.g. energy-efficient wood-fuel and solar cookers, green and white roofs, home insulation and appliance energy-saving technologies), wind turbines and smart design principles (e.g. densification strategies) can help ensure local resilience to the cost and availability of energy from centralized systems (see Box 1.7). Boosting efficiency is the key to achieving urban electrical energy security.[152] It has been estimated that a 29 per cent reduction in baseline emissions can be achieved at zero cost in the building energy efficiency sector.[153] Hence, the chance to engage funding opportunities in the low-carbon development sector can also be seized to catalyse the transition of African cities to higher levels of building energy efficiency.

However, centralized systems are also required to improve energy efficiency, especially where mobility is concerned (see Box 1.8). Mass transit systems typically make a huge difference to urban energy efficiency and are large employers. Indian Railways, for instance, is the largest employer in the world. How cities make large-scale transport infrastructure design and planning choices over roads for vehicles, cycling routes, pedestrian access and mass public transport has obvious consequences for the energy efficiency footprint of the city. A critical element to energy transition in Africa is to convince centralized urban energy suppliers to embrace semi-decentralization and decentralization by their continued participation in future energy markets.

The growth of the information and communications technology sector in Africa, for example, is restricted mainly by access to electricity.[159] African cities have the opportunity to lead their national economies towards greater levels of energy sustainability and resilience, while at the same time developing the competences required to participate in and compete in the global renewable energy sector. Africa's renewable energy resource potential is impressive on almost all fronts[160] and cities can take the lead in developing this potential and, at the same time, improve their material sustainability in the long term.

BOX 1.7: **THE KUYASA PROJECT AND NATIONAL SOLAR WATER HEATER ROLLOUT PLAN**

▲
Solar water heating in Potchefstroom, in South Africa's north-west. **©Abri le Roux.** Licensed under the Creative Commons Attribution 2.0 Generic License.

The Kuyasa Project in Cape Town's informal settlement of Khayelitsha - the first gold standard clean development mechanism project in the world - undertook a participatory approach to introducing solar water heater geysers, energy-efficient lighting and insulated ceilings in 2,309 homes. At the same time the city developed skills and created 87 jobs in the community. Project costs were low, at around ZAR 36 million (USD 4.87 million). Kuyasa, a non-government organization, assisted in accessing carbon credits to enable a secondary funding stream for the project (i.e. its longevity and continuity) and the community.[154] The project was successfully piloted but faced challenges in attempting to scale up.

The South African government has since decided to support the rollout of one million solar water heaters by 2014, with a 40 per cent subsidy.[155] Although this programme has been slow to actualize a national strategy for a large-scale rollout of the geysers, the effort has recently gained momentum and the rollout has reached 330,000.[156] The South African government is supporting skills development and employment of youth in solar water heater assembly, installation and maintenance.[157]

Water

Future water shortages are projected for many African cities. Many are already engaged in upstream water catchment logging that can significantly endanger urban water security in this century. Moreover, many cities in Eastern and Central Africa also depend heavily on hydropower for their electricity supply. Water and rainfall shortages are further projected to impact heavily on rain-fed agriculture. Hence, water is a critical connector in ensuring food and energy security. Guaranteeing water security will require regional agreements and actions, especially for transboundary catchment areas (e.g. the Congo, Zambezi and Nile rivers), and the land-use activities and changes that occur therein.

Ensuring urban resilience to flooding and water supply depends critically on upstream catchment management practices and integration strategies and systems. In the Republic of South Africa, catchment management agencies have been established to increase coordination and integration in water catchments. The Inkomati catchment, for example, is a shared water resource critical to water-based services in South Africa's and Mozambique's major cities such as Johannesburg and Maputo. It is run by the Inkomati Catchment Management Agency. Johannesburg's coal-fired electrical plants require large amounts of water and Maputo's prawn fisheries industry depends on freshwater supply to Maputo Bay. Other African cities along the coast at the end

BOX 1.8: **MOBILITY**

Formal and informal transportation in Africa is often fragmented, disorganized, unsafe and irregular, offering urban residents few options. Private motor vehicle ownership is desirable because it absolves urban residents of the need to engage with low-quality public transportation. However, urban congestion can be debilitating to local economic production, efficiency and competitiveness. In cities such as Cairo, Lagos and Nairobi congestion has become a fact of life. There is immense potential for the revision of African urban transportation systems.

Yet there is a fundamental contention between formal and informal transport providers, as the latter are not subject to taxation and effective regulation. Negotiating changes in transport systems in African cities is complicated by existing informal and private service providers who are understandably reluctant to relinquish their market shares. However, improved transport systems between cities can offer significant opportunities for corridor development along inter-linking city routes through road and rail. This may include local and trans-local city linkages, as well as international connections between cities along regional corridors. In the long term, the development of these corridors offers the opportunity to leverage the functions of secondary cities and towns, to open up spatial development and link rural hinterlands more closely to large metropolitan areas as well as linking to secondary and smaller cities.

The United Nations Environment Programme's Transport Unit prescribes an "avoid, shift and improve" strategy. This consists of reducing demand for transport and emissions through improved urban planning and transport systems design; shifting modes of transport and fuel use towards mass public transit systems - and biodiesel and cleaner energy, respectively; and, improving vehicles and fuel that are used in cities for transport.

Negotiating the large informal transport sectors in African cities presents a critical challenge to "avoiding, shifting and improving". Hence, negotiating the socio-economic dimension is paramount, and inclusive participatory-based processes are necessary to achieve socially sustainable transitions towards improved transport systems in African cities. Lagos and Johannesburg have adopted Bus Rapid Transit (BRT) systems and Lagos has already identified that light rail systems will be required to meet demand in the city. Yet many questions exist about the eventual affordability of these systems, and private vehicle owners often contest the allocation of BRT-only lanes on which they are prohibited to drive. It remains critically important that Lagos is thinking about how to improve transportation within the city, as improvements in public transport help bring about improvements in competitiveness in service provision, efficiency and the cost of goods.

Source: Peter, C. and Swilling, M. (2012).[158]

of rivers, such as Alexandria in Egypt, require continued freshwater flows to mitigate saline intrusion into groundwater and aquifers.

Centralized wastewater systems need to be reviewed as an option for urban sanitation development. In an energy- and resource-scarce future, large centralized sewage and wastewater abstraction systems using potable water to transport sewage to treatment plants far away are likely to be crippling in the future as water and energy costs rise. Whereas developed countries are locked into high energy and water costs, African cities have the opportunity to avoid these, ironically as a result of its current large infrastructure deficits. However, changing values, beliefs and norms is the most critical factor in enabling a transition towards greater decentralized water resilience in African cities.

Closing wastewater loops at micro-scales amongst the middle class would be an important step. However, common perceptions that human dry waste facilities are inferior to flush toilet systems need to be eradicated. In vastly unequal African cities, perceptions of social status play a critical role in fostering identity and belonging. Therefore, mediating against such perceptions is required and can be achieved through participatory processes that work closely with society and communities.

The technologies for improving local scale water and wastewater adaptation for resilience are numerous. Rainwater collection, water efficiency systems and technologies, water recycling and reuse (e.g. grey water recycling), as well as biotechnologies for processing wastewater at the neighbourhood and municipal scales can play a key role in improving African urban water and wastewater resilience. At the same time, pathogen-free nutrient-rich outputs can be harnessed for improving soil fertility and extending urban agriculture to improve food security and household budgets, especially among the poor. Such technologies are available and further innovation is likely, but the key challenge is to engage urban communities in the technological transition. Simply deploying these technologies without adequate consultation and engagement can defeat the purpose by reinforcing the perception that inferior service provision is being forced upon the poor (see also Box 1.9).

Waste

African urban wastes provide many recycling and reuse opportunities and are a key area for development. Informal waste recycling already exists but jobs are often unsafe, poorly paid and taken up by the most marginalized among the urban poor. Waste removal and processing policies and other supportive instruments (e.g. regulations and strategies) for moving waste recycling towards safer, more profitable and socially valued occupations are needed. Biomass and organic wastes, which comprise the bulk of solid waste from African cities, can produce compost, biogas and biodiesel. Linkages between waste and energy sectors offer opportunities for

The Marianhill Landfill Conservancy is a unique initiative by the eThekwini Municipal Area (EMA) that is both a waste disposal site and an area of natural beauty.
Top: Photo courtesy of Landfillconservancies.com Bottom: **©BBC World Service.** Licensed under the Creative Commons Attribution-NonCommercial 2.0 Generic License.

migrating informal recycling and re-use to formalized operations, creating niches and employment along value chains that can be created by increasing integration between the urban waste sector and others. The global market for waste-to-energy was valued at USD 19.9 billion (2008) and sector growth of 30 per cent was projected for 2014.[161]

Composting facilities in cities such as Johannesburg are already overloaded. Building capacity to recycle solid urban waste in Africa requires measures that go beyond centralized composting. Diversifying to local, medium-scale waste markets can help migration towards (close to) zero-waste urban footprints if solid waste is reused. High energy costs may, however, prove prohibitive to small and medium operators and such operations must be coupled to lower-cost energy provision. Improved waste collection can also be achieved in sites that are difficult to access. In Curitiba (Brazil), for instance, the "green swap programme" exchanges recyclable wastes (glass and plastics) for food in informal settlements.[162] Socially-sensitive approaches to waste management may be necessary locally in African cities to complement larger-scale waste infrastructure.

African urban landfill practices also require serious attention as these are critical to human health and reliable ecosystem functioning. The Mariannhill Landfill, near eThekwini (South Africa), was registered as a national conservancy in 2002.[163] The facility receives over 450 tons of urban waste daily from which it produces electricity, treats and reuses leachates[164] as well as extracting toxic substances through artificial wetlands. In Kampala (Uganda) the Kasubi-Kawala neighbourhood entered into a partnership to recycle neighbourhood waste, of which 75 per cent was organic, into animal feed, compost and alternative fuel.[165] The Coptic Christian Zabbaleen in Cairo have traditionally collected the city's waste and now operate at scales large enough to bridge international price variations of recycled glass and plastic. The social value of focused waste management projects, such as these examples above, is critical to catalysing behavioural change necessary for Africa to move towards future urban zero-waste profiles. Policies, governance structures, infrastructures and technologies adopted at the city scale play key roles in stimulating the transition and influence behaviour at large as well as at local scales. African city governments may be required to enter into partnerships, for example, with the private sector or with regional and international donors to achieve the large-scale actions necessary to speed up the transition.

BOX 1.9: **IMPROVING LOCAL FOOD RESILIENCE**

Local food resilience is critical as African cities are heavily dependent on imported food (from rural areas or abroad) and therefore susceptible to exogenous shocks. Urban agriculture in Africa is largely informal and unplanned, while cities expand on the valuable agricultural land that feed them. African cities can support and encourage urban agricultural practices that draw on the vast amounts of local organic waste and biomass in cities to improve soil quality and nutritional content of produce.

Urban governance is critical to improving food security in African cities. Zoning of agricultural lands; formalizing informal urban agriculture; improving irrigation for urban farmers (including support for women farmers and youth); skills development and training; agricultural credit support for urban farmers; funding local advice and support agencies; as well as support for "upstream" (compost and fertilizer production) and "downstream" activities (markets, cold chain storage, solar fish drying systems) can all help improve critical urban food and nutrition security. At the same time, they would create new services and employment, especially through recycling and reuse linkages between different sectors. All this will require knowledge transfer and training to improve agricultural methods for small scale and urban farmers, and partnerships between farmers, civil society and NGOs as well as government agencies, to create and ensure supportive measures for urban agriculture.

Opportunities

Integration

There are interactions between food, energy, water, waste and transport systems that can be exploited for green growth. Material and waste flows from each sector can be taken up in other sectors, closing material flow loops and engendering closer cooperation and "clustering" between different sectors of the city. The key requirement in respect of achieving sustainability in African cities is integration.[166] In order for whole systems to be sustainable, there needs to be integration between the different subsystems and functions, controls and processes. The integrated approach is in keeping with the post-2015 development agenda (see Box 1.10).

Achieving this integration is critical for urban sustainability, in particular where a variety of often conflicting development actions can emerge. There are a number of success factors that can play a vital role in developing world city transitions to resource efficiency (decoupled urban growth) and sustainability at whole system scale. These success factors include and depend on:

- integration between different sectors and scales of governance (especially between formal and informal systems)
- focusing on tackling the "urban divide";
- improved governance systems and decision-making;
- identifying and implementing smart growth and smart urban design;
- reliable logistics and spatial planning;
- adequate finance and funding;
- appropriate technology transfers and skills development;
- and the capacity to innovate and implement solutions that fit local contexts.[168]

Integration between these objectives is hence critical for urban sustainability in Africa.

The following elements are proposed to aid decision-makers, urban planners, developers and communities to achieve this integration:[169]

- **Improve integration in leadership and institutions through thematic and iconic programmes and projects**. These might include large public transit system projects, which capture citizens' collective imagination about the possible futures that the city holds, and radically transform access and the urban spatial fabric. In cities where tourism is critical (e.g. Cape Town, Dar es Salaam and Mombasa), and is largely dependent on ecological features and eco-tourism attractions, thematic programmes which focus on urban ecosystem management can play a large role in integrating sectors such as urban waste and agriculture.

- **Ensure the existence of strategic sectorial, institutional, local community, and other intermediaries for innovation and integration through partnerships, participatory mechanisms and processes**. Sustainable development requires cooperation between urban governance, the private sector and civil society in order to actualize sustainability. Typically, intermediaries should focus on broad-level, interstitial or niche activities. These include participatory governance programmes, urban laboratories and observatories, as well as thematic and iconic projects that facilitate integration between sectors and arms of governance. They would typically innovate at all levels of society, from discursive and policy niches to process, system and technology innovations, as well as innovations in business models (e.g. microcredit innovations), cooperative (non-profit) models, as well as innovations in non-governmental and community organizations and their operation.

- **Improved monitoring and evaluation of urban sustainability.** Understanding resource flows and changes in demand for services, materials, goods and so forth that unfold in African cities is critical, especially because there are high levels of unplanned development

BOX 1.10: **AFRICAN CITIES AND THE MILLENNIUM DEVELOPMENT GOALS POST- 2015**

Since 2000, the Millennium Development Goals (MDGs) have served as a shared framework for global action and cooperation on development. Deliberation has begun on how to advance the global development agenda beyond 2015, the target date for achieving the MDGs.

The United Nations Secretary-General has established a System Task Team on the Post-2015 United Nations Development Agenda to coordinate system-wide preparations and to propose a unified vision of the future global development framework that will succeed the MDGs. The post-2015 process is running alongside that of the Sustainable Development Goals, which is meant to envision a more holistic and integrated agenda achieving universal human development while respecting the Earth's ecosystems and critical life support systems. Both processes are a follow-up to the Rio+20 Conference and aim to lead to a single set of goals.

In 2013, African countries convened in a series of regional and sub-regional consultations, initiated by the United Nations Economic Commission for Africa, to develop a common understanding and identify an African position on the post-2015 development agenda. Agreement was reached that this agenda should focus on three broad development outcomes as priorities: structural economic transformation and inclusive growth, innovation and technology transfer, and human development. The last of these also aims to strengthen capacity to implement disaster risk reduction and climate adaption initiatives.

UN-Habitat has joined forces with various United Nations agencies engaging in the post-2015 process to promote cities that are "environmentally safe, socially inclusive, economically productive and resilient", acknowledging that urbanization can be a driver for sustainable development as the future of mankind is one that is urban and cities consume more than half of the Earth's resources.

Targets that could be considered by African countries and cities to promote these goals include:

- increasing the number of countries implementing inclusive national urban policies
- reducing the proportion of people living in slums
- increasing the proportion of towns and cities using participatory approaches in public affairs
- reducing the rate of urban violent crime
- increasing the number of cities implementing inclusive policies to facilitate urban job creation
- reducing the average time and expenditure of urban dwellers on travel within urban areas
- increasing the share of renewable energy sources in cities
- improving access to safe drinking water supply and adequate sanitation in cities
- increasing the number of cities implementing policies or plans that integrate comprehensive and multi-sectoral measures to strengthen resilience.

Sources: Rippin (2012); UN-Habitat (2012).[167]

in these cities. Improved liveability, skills development, employment creation and innovation are also critical in order to ensure that broad-level urban sustainability can be achieved across multiple dimensions, from the material to the social, economic and ecological.

Other considerations can be taken into account in respect of green economic and sustainable development in African cities, including clustering and partnerships.

Clustering

Diversification can be achieved through clustering, which facilitates information exchange and shared resource use. Clustering seeks collective efficiency and cooperation. It improves supplier and market access as well as increasing niche specialization and output.[170] Green economic clustering can also increase competition[171] and clustering[172] can help improve urban adaptive capacity at local scales through harnessing diverse but complementary interdependencies in the urban sociocultural and economic fabric. It may potentially play a role in bringing about "bioregional economic diversification" and decoupling.[173] Working with nature,[174] leveraging density[175] and also optimizing infrastructure[176] are critical for the future sustainability of African and global cities.

Partnerships for Growth

Infrastructure choices that African cities make will determine whether this kind of sustainability is achieved, not least because they determine how functional specialization unfolds across the city. This is especially the case where large-scale infrastructure and development choices are made, especially bulk infrastructures, which are often deployed in the name of boosting economic competitiveness of cities and focus on areas where private sector and government activities are highest. Slums and informal settlements are neglected as a result.

Infrastructure choices need to be sensitively formulated in partnership with all stakeholders. Community-level partnerships and forums can also help to catalyse democratic participation and build local political constituency in cities. Broader engagement across different sectors is required between governance, business, civil society and institutions of higher learning. In addition, networks of actors, operating in niches, are critical to producing local, context sensitive innovations which can boost local capacity for sustainable development.

Partnerships with local communities and engagement at the city level hold potential for envisioning and negotiating

more equitable ways of engendering benefits from large-scale infrastructure, service provision and development choices. Organizations such as the African Development Bank are typically involved in making investments in large-scale, often regional infrastructures such as roads, rail, energy and water systems. However, these initiatives, while necessary, could be better complemented by linking them to national and local level strategies. Linking top-down driven initiatives to bottom-up priorities requires additional concerted attention, so that regional scale interventions link to local initiatives more cohesively. This necessitates the establishment of partnerships between regional, national and local actors, and decision-makers who manage these efforts.

Fostering Innovation

Africa is rich in renewable and non-renewable resources, with vast consumer potential emerging from the growth of national economies and cities. Africa also has the potential to produce large amounts of food, as evidenced by the large scale foreign purchasers of agricultural land. The necessary preconditions exist to stimulate new agro-ecological economies of scale, but these potentials have not yet been adequately realized. Boosting the innovation capacity of African cities may open up new avenues of development practice, technological design and implementation. Due to the severity and immediacy of urban challenges, innovative responses are required. Linkages between key knowledge and innovation activities need to be fostered. For example, regional cooperation among African institutions of higher learning, innovation hubs, the private sector and civil society has the potential to unleash bold and relevant innovations. Fostering links between activities in different regions enriches the quality of professionals and graduates. It also stimulates the formation of knowledge networks that can evolve and adopt new configurations.

Innovation occurs in networked niches of activities and operations where actors can form varied interrelationships to explore new ideas, opportunities, policymaking and frameworks for business and governance. Innovation requires catalysts and some degree of protection from direct market forces if it is to incubate with some degree of success. This incubation, in different milieus of innovation, supported by networks of actors probing different opportunity spaces and experimenting with different combinations of relationships, is critical for African cities. Firstly, it can play a large role in reorienting often underdiversified economies. Moreover, due to the special nature of African urban challenges, solutions developed on the continent may find markets in other developing world contexts. Lastly, local innovations that lead to the development of new local chains of production are desperately needed to boost employment and incomes in African cities, especially amongst the youth and semi-skilled.

Innovations for African cities must be customized to their context of implementation because local contexts are governed by complex realities and interacting interests that can undermine the application of new technologies and infrastructures, which are not sensitively oriented to these realities and interests. Local scale innovations that can boost small to medium-scale activities in African cities may well be more appropriate than the "grand" innovation models of developed countries that are too expensive and require scarce high skills levels. The possible exceptions are in cities where there is a proliferation of underemployed, or unemployed, skilled workers and professionals such as in Southern and Northern Africa.

"Innovation hubs" - such as Konza Techno City, some 60 kilometres southeast of Nairobi in Kenya (see Box 4.1), constitute attempts to establish secondary milieus of innovation that do not develop entirely new or innovative ideas, but link to innovation centres across the globe, and require outsourced assistance with activities. Typically, such developments are not integrated into the fabric of African cities, but are developed as stand-alone add-ons to existing cities. Access to these areas will be tightly controlled, and informality will likely be deterred from taking hold.

Sustainable Livelihoods

Ensuring sustainable livelihoods is a cornerstone of sustainability, as it is a key component of maintaining social stability. Perhaps the greatest pressure on them is reflected at the household level, where global exogenous changes in the prices of food, water and energy combine with the effects of climate change to render poor African urban households extremely vulnerable. Sustainable, integrated service provision is necessary to ensure that urban household resilience is boosted and that liveability is seen as pivotal to the success of urban transitions to sustainability.[177] A diversity of local-scale economic activities, which draws on existing modes of formal and informal occupations in a supportive and coordinated manner, is required to improve local level resilience to exogenous factors such as climate change impacts, changes in the global economy, global resource scarcities, or natural and man-made disasters.

Realizing development at this scale in Africa has been historically ignored as many development policies were formulated and imposed from outside the continent. Reorientating the support of external institutions will be required to actualize partnerships that bring about local scale diversification of African urban and national economies.

Ironically, though perhaps fortunately, the turmoil in the global financial system has increased the willingness of global financial institutions to consider, develop and accept new frameworks for economic growth. A critical opportunity has now emerged in which new, or previously ignored, directions can be considered. There has been a significant change of stance in the International Monetary Fund, in particular, with acknowledgement of the inadequacy of earlier developmental models to maintain global economic sustainability and in ushering lasting development in poor countries.

Pluralism in economic growth and the provision of livelihoods are needed if African urban development is to be reoriented towards greater local-scale diversity. It will be

necessary to rethink the social role of development on more equitable terms and engage with local actors in development to formulate more people-centred approaches that engender "new forms of local community".[178]

Existing regional economic and political bodies and programmes include: the African Union (AU), the Arab Maghreb Union (AMU), the East African Community (EAC), the Economic Community of Central African States (ECCAS), the Economic Community of West African States (ECOWAS), the New Partnership for African Development (NEPAD) and the Southern African Development Community (SADC). These can also help reformulate bi- and multi-lateral trade agreements that presently undermine local trade linkages. There is also a need to reformulate visions for regional development and redefine the role of African cities in these visions.

In more immediate economic terms, however, the role of large-scale public-private enterprises created to provide infrastructure and services needs closer scrutiny. Such enterprises put together to provide water and sanitation infrastructure and services do not create competitive markets at multiple scales in African cities and economies.[179] Yet this multi-scalar development is necessary to absorb the large workforce and reduce inequality in income and consumption profiles.

Africa is urbanizing rapidly and many cities are expanding unplanned. Demand for services, which most urban slum dwellers find unaffordable, is growing. Large-scale developments, which are co-funded by governments and the private sector, should be implemented in ways that create employment and incorporate existing, often informal and private small-scale operators. The opportunity exists to create more diverse partnerships, which will promote activities at different scales.

Early independence-era African governments had a philosophical orientation that gave priority to hauling their people out of poverty and thrusting them into modernity. In the desire to provide services and security, the supply of energy, water and sanitation became the responsibility of central governments.

Today, governments, cities and municipalities are constrained by the control of central government, which allocates city-wide responsibility to a single large provider. The result of this is that often only middle- and high-income households can afford services. Informal and small-scale private sector providers are left to service slums. Therefore, in sub-Saharan cities, infrastructure and service provision often fails to reach the places where they are most needed. Decentralizing infrastructure and service delivery options at multiple scales is necessary in order to create a more competitive market. This does not prevent the formation of large public-private partnerships. However, it disagrees with the centralized modes of implementation, as they do not create the outcomes desired in African cities and countries. Building local scale capacity for governance, and hence a decentralization of governance, may also be necessary to facilitate effective local scale function and efficiency. This would require skills development, the establishment of local institutions and partnerships that involve communities, civil society, small- to medium-scale enterprises, informal sector providers and innovative youth entrepreneurs.

Viewing infrastructure development as a chance to create lasting institutions within society that provide employment, enhance skills and create new scope for business and small operators, throws a different light on how public-private partnerships should be constructed to meet the developmental needs of African cities. The heavy reliance of governments on single providers of essential services in cities is an obstacle to creating urban societies engaged in all the major internal economic opportunities that exist within them in order to increase local scale resilience. Viewing waste, energy, water, sanitation, food and transport as vehicles for transforming African urban economies towards more distributed growth, income generation and consumption power is a significant departure from viewing large public-private partnerships as being solely service delivery engines. Yet new ways of conceptualizing how unequal growth and accumulation of benefits can be reversed are necessary in Africa. The same is true of decentralization, which must be accompanied by strategies to create different opportunities at varying scales along the value chain of infrastructure and service delivery. Municipalities need to get closer to their local economies; they also need to find ways to generate revenue for their budgets, and create business prospects for their residents and outside investors. Rethinking public-private partnerships and centralized service delivery in these terms may help conceptualize new ways of empowering African municipalities, diversifying local urban economies and increasing their competitiveness and levels of participation in the economy at the same time.

Establishing opportunities for sustainable livelihoods in African cities requires the formulation of new innovative development and economic growth pathways inclusive of the broader urban citizenry and their majority needs. This is especially the case because African urbanism has not been accompanied by the large-scale industrial transitions that accompanied urbanization in the cities of the developed world. Instead, Africa is characterized by a reliance on extractive or agricultural economies, as well as dual formal and informal economies and systems of governance. Identifying urban development opportunities that build on this understanding is of paramount importance to the future of African cities, since they will likely shape and lead the macro-economic transitions of African countries and sub-regions.

Lastly, careful consideration is required of how functional diversification of smaller cities and towns that spring up or expand rapidly along transport routes and development corridors takes shape; as this functional diversity (whether mining, tourism, storage, or agriculture-based) will likely determine how regional rural-urban linkages operate in future. This diversity will also determine the levels of success that are achieved in respect of spreading the benefits of urban development in Africa beyond city boundaries to the rural hinterlands.

ENDNOTES

1 UNDESA (2013), *World Population Prospects: The 2012 Revision*, United Nations Department for Economic and Social Affairs, New York.

2 www.un.org/en/development/desa/publications/world-population-prospects-the-2012-revision.html, Last viewed 19/08/2013.

3 UNDESA (2012), *World Urbanization Prospects: The 2011 Revision*, United Nations Department for Economic and Social Affairs, New York.

4 McKinsey (2010). *Lions on the Move: The Progress and Potential of African Economies*, McKinsey Global Institute, McKinsey and Company. Page 4.

5 AfDB (2011). *Africa in 50 Years Time. The Road Towards Inclusive Growth*, African Development Bank (ADB) (Tunisia, Tunis), September 2011. Page 13.

6 Ibid, Page 1; Swilling, M. and Annecke, E. (2012). Rethinking Urbanism, in – Just Transitions: Explorations of Sustainability in an Unfair World (Cape Town, Juta).

7 McKinsey (2010). *Lions on the Move: The Progress and Potential of African Economies*, McKinsey Global Institute, McKinsey and Company. Page 2.

8 Swilling, M. (2010). "Africa 2050: Growth, resource productivity and decoupling", Policy Brief for the 7th meeting of the International Panel for Sustainable Resource Management of the United Nations Environment Programme.

9 Ibid, Page 3.

10 AfDB (2011). *Africa in 50 Years Time. The Road Towards Inclusive Growth*, African Development Bank (ADB) (Tunisia, Tunis), September 2011. Page 13.

11 The African Development Bank (2011) Market Brief specifies that this is "an absolute definition of per capita daily consumption of $2-$20 in 2005 PPP US dollars to characterize the middle class in Africa."

12 AfDB (African Development Bank). (2011). "The middle of the pyramid: dynamics of the middle class in Africa."' *Market Brief*, April 20, 2011. p. 2.

13 McKinsey (2010). *Lions on the Move: The Progress and Potential of African Economies*, McKinsey Global Institute, McKinsey and Company. Page 4.

14 AfDB (African Development Bank). (2011). "The middle of the pyramid: dynamics of the middle class in Africa."' *Market Brief*, April 20, 2011. p. 1.

15 Africa Progress Report (APR) (2012). Africa Progress Report. Jobs, Justice and Equity. Seizing Opportunities in Times of Global Change, Africa Progress Panel. Page 17.

16 Ibid.

17 Hofmann, A. and Wan, G. (2013) *Determinants of Urbanization, ADB Economics Working Paper Series No. 355*, Asian Development Bank (ADB), July 2013.

18 Ibid, p.21.

19 Pan-Africanism is more important than ever, in The Africa Report, No. 50, May 2013, p.27.

20 Swilling, M. (2010). "Africa 2050: Growth, resource productivity and decoupling", Policy Brief for the 7th meeting of the International Panel for Sustainable Resource Management of the United Nations Environment Programme; UNCTAD (2012). Economic Development in Africa Report 2012. Structural Transformation and Sustainable Development in Africa, United Nations Conference on Trade and Development (UNCTAD), United Nations.

21 McKinsey (2010). *Lions on the Move: The Progress and Potential of African Economies*, McKinsey Global Institute, McKinsey and Company. Page 4; AfDB (2011). *Africa in 50 Years Time. The Road Towards Inclusive Growth*, African Development Bank (ADB) (Tunisia, Tunis), September 2011; UNCTAD (2012). Economic Development in Africa Report 2012. Structural Transformation and Sustainable Development in Africa, United Nations Conference on Trade and Development (UNCTAD), United Nations.

22 AfDB (2011). *Africa in 50 Years Time. The Road Towards Inclusive Growth*, African Development Bank (AfDB) (Tunisia, Tunis), September 2011. Page 20.

23 AfDB (2011). *Africa in 50 Years Time. The Road Towards Inclusive Growth*, African Development Bank (AfDB) (Tunisia, Tunis), September 2011. Page 27.

24 Beauchemin, C. and Bocquier, P. (2004). 'Migration and urbanization in Francophone West Africa: a review of the recent empirical evidence', *Urban Studies*, 41, 11: 2245-2272; Bryceson, D. and Potts, D. (eds) (2006). *African Urban Economies: Viability, Vitality or Vitiation?* (Houndmills, Basingstoke: Palgrave Macmillan); Bryceson, D.F. and Jønsson, J. (2010). "Gold Digging Careers in Rural Africa: Small-Scale Miners' Livelihood Choices" *World Development* 38(3) 379-392; Jones, G., & Corbridge, S. (2010). The continuing debate about urban bias: the thesis, its critics, its influence and its implications for poverty-reduction strategies. *Progress in Development Studies, 10*(1), 1-18; Mezzini, E. and Lindeboom, W. 2008. The urban transition in Tanzania: building the empirical base for policy dialogue. Washington DC, World Bank; Potts, D. (2005) Counter-urbanization on the Zambian Copperbelt? Interpretations and Implications, *Urban Studies*. 42 4, 583–609; Potts, D. (2010). *Circular migration in Zimbabwe and contemporary sub-Saharan Africa* (James Currey, Oxford; Cape Town, University of Cape Town Press); Potts, D. (2012a). "Challenging the Myths of Urban Dynamics in Sub-Saharan Africa: The Evidence from Nigeria." *World Development*, 40 (7): 1382–1393; Potts, D. (2012b). Whatever happened to Africa's rapid urbanisation? London, Africa Research Institute, Counterpoints Series; Potts, D. (2012c). What do we know about urbanization in sub-Saharan Africa and does it matter? *International Development Planning Review*, 34 (1): v-xxi; Potts, D. (2013). Urban economies, urban livelihoods and natural resource-based economic growth in sub-Saharan Africa: the constraints of a liberalized world economy, *Local Economy,* 28, 2:168 – 185; Satterthwaite, D. (2003). The Millennium Development Goals and urban poverty reduction: great expectations and nonsense statistics. *Environment and Urbanization* 15(2): 181-90.

25 UN-Habitat (2008). *State of the African Cities Report 2008: A Framework for Addressing Urban Challenges in Africa*, UN-Habitat, Nairobi. Page 5. In: Swilling, M. (2010). "Africa 2050: Growth, resource productivity and decoupling", Policy Brief for the 7th meeting of the International Panel for Sustainable Resource Management of the United Nations Environment Programme.

26 AfDB (2011). *Africa in 50 Years Time. The Road Towards Inclusive Growth*, African Development Bank (AfDB) (Tunisia, Tunis), September 2011.

27 www.unhabitat.org/pmss/

28 Pieterse, E. (2011). "Recasting urban sustainability in the south", *Development*, 54, 3, 309-316. (RAUS).

29 In this approach resilience encompasses capacity to withstand exogenous shocks e.g. due to climate change, global economic uncertainty, global ecosystem degradation, etc.

30 UN-Habitat (2008). *State of the African Cities Report 2008: A Framework for Addressing Urban Challenges in Africa*, UN-Habitat, Nairobi. Page 5. In: Swilling, M. (2010). "Africa 2050: Growth, resource productivity and decoupling", Policy Brief for the 7th meeting of the International Panel for Sustainable Resource Management of the United Nations Environment Programme.

31 ADB (2011). *Africa in 50 Years Time. The Road Towards Inclusive Growth*, African Development Bank (ADB) (Tunisia, Tunis), September 2011.

32 Slums can occur in formal settlements (e.g. in inner cities that have fallen into decay), and are hence not always strictly 'informal'. However, these terms are used interchangeably in this report, and refer broadly to both phenomena.

33 ADB (2011). *Africa in 50 Years Time. The Road Towards Inclusive Growth*, African Development Bank (ADB) (Tunisia, Tunis), September 2011. Page 37.

34 City of Johannesburg (2008). State of Environment Report for the City of Johannesburg, City of Johannesburg.

35 ADB (2011). *Africa in 50 Years Time. The Road Towards Inclusive Growth*, African Development Bank (ADB) (Tunisia, Tunis), September 2011. Page 20.

36 ADB (2011). *Africa in 50 Years Time. The Road Towards Inclusive Growth*, African Development Bank (ADB) (Tunisia, Tunis), September 2011. Page 27.

37 Pieterse, E. (2011). "Recasting urban sustainability in the south", *Development*, 54, 3, 309-316. (RAUS).

38 Swilling, M. (2010). "Africa 2050: Growth,

ENDNOTES

resource productivity and decoupling", Policy Brief for the 7th meeting of the International Panel for Sustainable Resource Management of the United Nations Environment Programme; UNCTAD (2012). Economic Development in Africa Report 2012. Structural Transformation and Sustainable Development in Africa, United Nations Conference on Trade and Development (UNCTAD), United Nations.

39 Smith, P. & Jobson, E. (2013). *African Union at 50*, in *The Africa Report,* No. 50, may 2013, p. 23.

40 There is an important distinction here. The European Union (EU) emerged gradually from actual operational agreements between strong states. The Organization of African Unity (OAU) and the African Union (AU) have tried to create the superstructure of the continental organization before filling it with content. Africa is still a continent of relatively weak states, jealous of their meager claims to sovereignty.

41 Meredith, M. (2006). The State of Africa: A History of Fifty Years of Independence, London 2006, p. 141.

42 Skinner, AE. (1998). "African Political Cultures and the Problems of Government". *African Studies Quarterly*, Vol 2(3) 17-25. www.africa.ufl.edu/asq/v2/v2i3a3.htm.

43 http://ffp.statesindex.org/rankings.

44 Skinner, AE. (1998). "African Political Cultures and the Problems of Government". *African Studies Quarterly*, Vol 2(3) 17-25. www.africa.ufl.edu/asq/v2/v2i3a3.htm.

45 UN-Habitat (2007). "International Guidelines on Decentralisation and the Strengthening of Local Authorities". Nairobi

46 Green, E. (2010). 'Patronage, District Creation, and Reform in Uganda', *Studies in Comparative International Development*, Vol. 45: 83-103; Goodfellow, T. and Titeca K. (2012). 'Presidential intervention and the changing 'politics of survival' in Kampala's informal economy', *Cities*, Vol. 29 (4): 264-270; Goodfellow, T. (2012). 'Urban planning in Africa and the politics of implementation: contrasting patterns of state intervention in Kampala and Kigali', in: Arlt, V. and Macamo, E. and Obrist, B., (eds.) *Living the City*. Zurich: Lit Verlag.

47 Fox, S. and Beall, J. (2012). 'Mitigating conflict and violence in African cities', *Environment and Planning C: Government and Policy*, Vol. 30, No 6, pp. 968-981.

48 Beall, J., Goodfellow, T. and Rodgers, D. (2011). 'Cities, conflict and state fragility', *Crisis States Research Centre Working Paper No. 85, Series 2*, London School of Economics and Political Science, Department of International Development, London, UK.

49 World Bank. (2010). *Violence in the City: Understanding and Supporting Community Responses to Urban Violence*, Washington DC: The International Bank for Reconstruction and Development/The World Bank; Geneva Declaration Secretariat. 2011. *Global Burden of Armed Violence 2011: Lethal Encounters*, Cambridge: Cambridge University Press.

50 Rodgers, D. (2010). 'Urban Violence Is Not (Necessarily) a Way of Life: Towards a Political Economy of Conflict in Cities' in *Urbanization and Development: Multidisciplinary Perspectives*, Beall, J., Basudeb, G.K. and R. Kanbur (eds.), Oxford: Oxford University Press; Muggah, R. 2012. *Researching the Urban Dilemma: Urbanization, Poverty and Violence*, IDRC and Department for International Development, UK.

51 Geneva Declaration Secretariat. (2011). *Global Burden of Armed Violence 2011: Lethal Encounters*, Cambridge: Cambridge University Press; Fox, S. and J. Beall. 2012. 'Mitigating conflict and violence in African cities', *Environment and Planning C: Government and Policy*, Vol. 30, No 6, pp. 968-981; Fox, S. and K. Hoelscher. 2012. 'Political order, development and social violence', *Journal of Peace Research*, Vol. 49 (3): 431-444. Muggah, R. 2012. *Researching the Urban Dilemma: Urbanization, Poverty and Violence*, IDRC and Department for International Development, UK.

52 World Health Organization (2012). "Global burden of disease database." www.who.int/healthinfo/global_burden_disease/en/; Hendrix, C.S. and Salehyan, I. "Social Conflict in Africa Database (SCAD)." Available at: www.scaddata.org, accessed on 1 March 2013.

53 Barnett, J. and W.N. Adger. (2007). 'Climate change, human security and violent conflict', *Political Geography*, Vol. 26: 639-655.

54 Anderson, L. (2011). 'Demystifying the Arab Spring: Parsing the Differences Between Tunisia, Egypt, and Libya', *Foreign Affairs*, Vol. 90 (3): 2-7; Joffe, G. 2011. 'The Arab Spring in North Africa: origins and prospects', *The Journal of North African Studies*, Vol. 16 (4): 507-532; Campante, F.R. and D. Chor. 2012. 'Why Was the Arab World Poised for Revolution? Schooling, Economic Opportunities, and the Arab Spring', *Journal of Economic Perspectives*, Vol. 26 (2): 167-188; Malik, A. and B. Awadallah. 2011. 'The economics of the Arab Spring', *CSAE Working Paper WPS/2011-23*, Centre for the Study of African Economies, Oxford.

55 Conway D. (2009). "The science of climate change in Africa: impacts and adaptation." Grantham Institute for Climate Change, Discussion Paper 1. Imperial College, London, p. 24.

56 Nyong, A. (2005). "Key vulnerabilities to climate change in Africa. Global Warming: Looking Beyond Kyoto." Yale Centre for the Study of Globalization; Myers J, Young T, Galloway M, Manyike P, Tucker T. (2011). "A public health approach to the impact of climate change on health in southern Africa; identifying priority modifiable risks." *South African Medical Journal*; 101:817-820.

57 Nyong A. (2005). "Key vulnerabilities to climate change in Africa. Global Warming: Looking Beyond Kyoto." Yale Centre for the Study of Globalization.

58 Nyong A. (2005). "Key vulnerabilities to climate change in Africa. Global Warming: Looking Beyond Kyoto." Yale Centre for the Study of Globalization; Brown O, Hammill A, & McLeman R. (2007). "Climate change as the 'new' security threat: implications for Africa," *International Affairs*, 83:6 (1141–1154).

59 World Economic Forum. (2012). "Global Risks 2012." Available at: www3.weforum.org/docs/WEF_GlobalRisks_Report_2012.pdf. Accessed 8 December 2012.

60 Robinson, B, Swilling, M, Hodson, M & Marvin, S. (2011). "Growing greener cities." Paper presented at UN-Habitat EGM on the green economy and sustainable urban development. 17-18 February, Nairobi, Kenya. Excerpt: "*In the 200 years starting in 1750, just over 400 million people around the world migrated to cities in what is often referred to as the 'first wave' of urbanisation. If UN Population forecasts are correct, the global population will grow from 6 to 9 billion people by 2050. The 'second wave' of urbanisation started in the mid-20th Century, and is expected to result in an additional 3 billion people entering the world's cities within 80 years.*"

61 Pelling, M. (2003). "Toward a political ecology of environmental risk: the case of Guyana." In: Political Ecology: an integrative approach to geography and environment-development studies. Karl Zimmerer and Thomas Bassett (Eds.). The Guildford Press.

62 Pelling, M. (2003). "Toward a political ecology of environmental risk: the case of Guyana." In: Political Ecology: an integrative approach to geography and environment-development studies. Karl Zimmerer and Thomas Bassett (Eds.). The Guildford Press; McGranahan, G, Mitlin, D, Satterthwaite, D, Tacoli, C. and Turok, I. (2009). "Africa's Urban Transition and the Role of Regional Collaboration," *Human Settlements Working Paper Series* Theme: Urban Change-5, IIED, London, p. 58.

63 Schwela, D. (2007). "Review of urban air quality in Sub-Saharan Africa." Clean Air Initiative in Sub-Saharan African cities, Washington DC: The World Bank.

64 World Bank. (2012). "Climate Change, Disaster Risk, and the Urban Poor." World Bank, Washington.

65 Bartlett, S. (2008). "Climate change and children: Impacts and implications for adaptation in low- to middle income countries", *Environment and Urbanization* 20(2): 501–519.

66 UNEP (2011). "Livelihood Security: Climate Change, Conflict and Migration in the Sahel." Geneva.

67 UNISDR (2012). "Disaster Reduction in Africa. UNISDR informs: Special issue on drought risk reduction 2012." UNISDR. Geneva.

68 UNEP (2012). "21 Issues for the 21st Century: Result of the UNEP Foresight Process on

ENDNOTES

Emerging Environmental Issues." United Nations Environment Programme, Nairobi.

69 Land degradation includes water and wind erosion, desertification, soil compaction and salinization as well as chemical pollution.

70 UNEP (2008), "Africa: Atlas of Our Changing Environment." Division of Early Warning and Assessment (DEWA). United Nations Environment Programme (UNEP).

71 UNEP (2008), "Africa: Atlas of Our Changing Environment." Division of Early Warning and Assessment (DEWA). United Nations Environment Programme (UNEP).

72 AFSUN. (2010). "Pathways to insecurity: Urban food supply and access in Southern African cities", Crush J., & Frayne, B. eds., Urban Food Security Series No.3., African Food Security and Urban Network (AFSUN).

73 Lee-Smith D. (2010). "Cities feeding people: an update on urban agriculture in equatorial Africa." *Environment and Urbanization,* 22: 483 DOI: 10.1177/0956247810377383 – Available online at: http://eau.sagepub.com/content/22/2/483.

74 World Bank. (2008). Biodiversity, Climate Change and Adaptation. Washington.

75 UNECA. (2008). "Sustainable development report on Africa. Five-year review of the implementation of the World Summit on Sustainable Development outcomes in Africa (WSSD+5)." Economic Community of Africa Report, Addis Ababa: UNECA.

76 UNISDR. (2012). "Disaster Reduction in Africa. UNISDR informs: Special issue on drought risk reduction 2012." UNISDR. Geneva.

77 INGC (2009). "Main report: INGC Climate Change Report: Study on the impact of climate change on disaster risk in Mozambique." [Asante, K., Brito, R., Brundrit, G., Epstein, P., Fernandes, A., Marques, M.R., Mavume, A , Metzger, M., Patt, A., Queface, A., Sanchez del Valle, R., Tadross, M., Brito, R. (eds.)].

78 United Nations Economic Commission for Africa. (2009). "Africa review report on sustainable consumption and production." United Nations. Economic and Social Council, ECA/FSSD/CFSSD/6/16, New York.

79 United Nations Economic Commission for Africa. (2009). "Africa review report on sustainable consumption and production." United Nations. Economic and Social Council, ECA/FSSD/CFSSD/6/16, New York.

80 Yom Din, G. and Cohen, E. (2012). "Planning Municipal Solid Waste Management in Africa: Case Study of Matadi - The DRC (April 7, 2012)." Available at SSRN: http://ssrn.com/abstract=2035845 or http://dx.doi.org/10.2139/ssrn.2035845.

81 United Nations Economic Commission for Africa. (2009). "Africa review report on waste management." Main Report. Available at www.uneca.org/csd/csd6/AfricanReviewReport. (18 July 2012).

82 Yom Din, G. and Cohen, E. (2012). "Planning Municipal Solid Waste Management in Africa: Case Study of Matadi - The DRC (April 7, 2012)." Available at SSRN: http://ssrn.com/abstract=2035845 or http://dx.doi.org/10.2139/ssrn.2035845.

83 Myers, N. (2005): Environmental Refugees: An emergent security issue. 13th Economic Forum, May 2005, Prague.

84 Parnell, S and Walawege, R. (2011). "Sub-Saharan African urbanisation and global environmental change." Global Environmental Change, doi:10.1016/j.gloenvcha.2011.09.014.

85 De Silva, PM and Marshall, JM. (2012). "Factors Contributing to Urban Malaria Transmission in Sub-Saharan Africa: A Systematic Review," *Journal of Tropical Medicine*, vol. 2012, Article ID 819563, 10 pages, 2012. doi:10.1155/2012/819563.

86 Haines, A., R.S. Kovats, D. Campbell-Lendrum, and Corvalan, C. (2006). "Climate change and human health: impacts, vulnerability, and public health." Lancet 367: 1-9; Confalonieri U, Menne B, Akhtar R, Ebi KL, Hauengue M, Kovats RS, Revich, B. and Woodward, A. (2007). "Human Health." In: *Climate Change 2007: Impacts, Adaptation and Vulnerability*. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Parry ML, Canziani OF, Palutikof JP, van der Linden PJ, Hanson CE, eds). Cambridge: Cambridge University Press, 391–431; Boko, M., I. Niang, A. Nyong, C. Vogel, A. Githeko, M. Medany, B. Osman-Elasha, R. Tabo and P. Yanda. (2007). "Africa." In: *Climate Change 2007: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J., and Hanson, C.E. (eds.), *Cambridge University Press*, (UK: Cambridge), 433-467.

87 UN-OHRLLS (2009). The impact of climate change on the development prospects of the Least Developed Countries and Small Island Developing States, UN-OHRLLS, New York.

88 World Bank. (2012). "Climate Change, Disaster Risk, and the Urban Poor." World Bank, Washington.

89 World Health Organisation. (2011). "Closing the gap: policy into practice on social determinants of health." Discussion paper of the World Conference on Social Determinants of Health, 19–21 October 2011. Geneva.

90 Olivier, J.G.J., Janssens-Maenhout, G., Peters, J.A.H.W. & J. Wilson. (2011). "Long-term trend in global CO_2 emissions." 2011 report, The Hague: PBL/JRC.

91 UN-Habitat (2012). "State of World's Cities." EarthScan. London.

92 ICLEI (2012). "Cities and Climate Adaptation in Africa." Available at: www.iclei.org/index.php?id=africa-adaptation.

93 Cartwright, A., Blignaut, J, De Wit, B., Goldberg, K., Mander, M., O'Donoghue, S., and Roberts, D. (2013). Economics of climate change adaptation at the local scale under conditions of uncertainty and resource constraints: the case of Durban, South Africa. Environment and Urbanization 0956247813477814, doi: 10.1177/0956247813477814.

94 Commins, S. (2011). "Urban fragility and security in Africa", *Africa Security Brief* No. 12, Africa Centre for Strategic Studies,

95 Beall, J., Goodfellow, T. and D. Rodgers. (2011). 'Cities, conflict and state fragility', *Crisis States Research Centre Working Paper No. 85, Series 2*, London School of Economics and Political Science, Department of International Development, London, UK.

96 Mumpasi, B.L. (2007). "Migrations in Central Africa: characteristics, issues and roles in the integration and development of the countries of the region", paper presented at the African Migration Workshop, 18-21 September (Ghana: Accra).

97 Saferworld (2012). "Mogadishu rising? Conflict and governance dynamics in the Somali Capital", Saferworld, August 2012. Page 11.

98 Best, S.G., & Rakodi, C. (2011). "Violence, conflict and its aftermath in Jos and Kano, Nigeria: What is the role of religion?" Religion and Development Research Programme (RaD), Working Paper No. 69, website: http://epapers.bham.ac.uk/1653/1/BestRakodiViolence.pdf. Page 2.

99 Beall, J., Goodfellow, T. and Rodgers, D. (2011). "Cities, conflict and state fragility", Working Paper No. 85 – Cities and Fragile States – Crisis States Working Paper Series No. 2, Crisis States Research Centre, London School of Economics Development Studies Institute (DESTIN). Page 16.

100 Commins, S. (2011). "Urban fragility and security in Africa", Africa Security Brief No. 12, Africa Centre for Strategic Studies, April 2011. Page 1.

101 Olowu, D. (2007). "Decentralization and urban governance in West Africa", *in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa*, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp. 23-52. Page 28.

102 Commins, S. (2011). "Urban fragility and security in Africa", Africa Security Brief No. 12, Africa Centre for Strategic Studies, April 2011. Pages 2-3.

103 Watson, V. (2009). "The planned city sweeps the poor away: Urban planning and 21st century urbanisation", *Progress in Planning*, vol. 72, pp. 151–193.

104 Commins, S. (2011). "Urban fragility and security in Africa", *Africa Security Brief* No. 12, Africa Centre for Strategic Studies, Page 7.

105 Ammour, L. (2009). *An Assessment if Crime Related Risks in the Sahel*, NATO Research Paper No. 53, NATO Defense College, Rome; Ellis, S.

ENDNOTES

(2009). 'West Africa's International Drug Trade', *African Affairs*, 108 (431): 171-196.

106 Beall, J. and S. Fox. (2009). *Cities and Development*, London: Routledge; Jones, G. and S. Corbridge. 2010. 'The continuing debate about urban bias: the thesis, its critics, its influence and its implications for poverty-reduction strategies', *Progress in Development Studies*, Vol. 10 (1): 1-18.

107 Fox, S. (2012). 'Urbanization as a global historical process: Theory and evidence from sub-Saharan Africa', *Population and Development Review*, Vol. 38 (2): 285-310.

108 Robinson, B, Swilling, M, Hodson, M & Marvin, S. (2011). "Growing greener cities." Paper presented at UN-Habitat EGM on the green economy and sustainable urban development. 17-18 February, Nairobi, Kenya.

109 Myers, G.A. (2010). "Seven themes in African urban dynamics", Nordiska Afrikainstitutet, Discussion Paper 50. Page 1.

110 This Kenyan programme may be viewed online at www.mapkibera.org/.

111 Shaw, M. and Tschiwula, L. (2002). "Developing citizenship among urban youth in conflict with the law", *Environment and Urbanization*, vol. 14, No. 2, pp. 59-70.

111 McKinsey (2010). "Lions on the Move: The Progress and Potential of African Economies." McKinsey Global Institute, McKinsey and Company. Page 1.

113 McKinsey (2010). "Lions on the Move: The Progress and Potential of African Economies." McKinsey Global Institute, McKinsey and Company. Page vi-vii.

114 McKinsey (2010). "Lions on the Move: The Progress and Potential of African Economies." McKinsey Global Institute, McKinsey and Company. Page 2.

115 The Gini coefficient, or Gini index, is "*the most widely used summary measure of inequality*." For a basic introduction to the Gini index refer to: UN-Habitat(2010/11). *State of the World's Cities 2010/11: Bridging the Urban Divide*, United Nations Human Settlements Programme, UN Habitat, London, Sterling, VA. Box 2.2.1, Page .62.

116 UN-Habitat(2010/11). *State of the World's Cities 2010/11: Bridging the Urban Divide*, United Nations Human Settlements Programme, UN Habitat, London, Sterling, VA.

117 McKinsey (2010). "Lions on the Move: The Progress and Potential of African Economies." McKinsey Global Institute, McKinsey and Company. Page 2. Page 5.

118 Pieterse, E. (2011). "Recasting urban sustainability in the south", *Development*, 54, 3, 309-316. (RAUS). Page 309.

119 McKinsey (2010). "Lions on the Move: The Progress and Potential of African Economies." McKinsey Global Institute, McKinsey and Company. Page 3.

120 McKinsey (2010). "Lions on the Move: The Progress and Potential of African Economies." McKinsey Global Institute, McKinsey and Company. Adapted from Exhibit D. Page 7.

121 McKinsey (2010). "Lions on the Move: The Progress and Potential of African Economies." McKinsey Global Institute, McKinsey and Company. Page 7.

122 McKinsey (2010). "Lions on the Move: The Progress and Potential of African Economies." McKinsey Global Institute, McKinsey and Company. Page 9.

123 ADB (2011). *Africa in 50 Years Time. The Road Towards Inclusive Growth*, African Development Bank (ADB) (Tunisia, Tunis), September 2011. Page 28.

124 ADB (2011). *Africa in 50 Years Time. The Road Towards Inclusive Growth*, African Development Bank (ADB) (Tunisia, Tunis), September 2011. Page 28.

125 McKinsey (2010). *Lions on the Move: The Progress and Potential of African Economies*, McKinsey Global Institute, McKinsey and Company. Page 8.

126 Ibid

127 ADB (2011). *Africa in 50 Years Time. The Road Towards Inclusive Growth*, African Development Bank (ADB) (Tunisia, Tunis), September 2011. Page 28.

128 Grosskurth, J. (2010). "Futures of technology in Africa", Study Centre for Technology Trends (Netherlands: The Hague). Page 49.

129 Through the Map Kibera project: www.mapkibera.org/.

130 Grosskurth, J. (2010). "Futures of technology in Africa", Study Centre for Technology Trends (Netherlands: The Hague). Page 56.

131 Swilling, M. and Annecke, E. (2012). Rethinking Urbanism, in – Just Transitions: Explorations of Sustainability in an Unfair World (Cape Town, Juta).

132 UNEP (2011). *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication – A Synthesis for Policy Makers*, United Nations Environment Programme (UNEP), Available at: www.unep.org/greeneconomy. Last accessed 26 August 2013.

133 UNEP (2011). Towards a Green Economy: Finance: Supporting the Transition to a Global Green Economy, United Nations Environment Programme (UNEP), Page 598.

134 UNEP (2011). Towards a Green Economy: Finance: Supporting the Transition to a Global Green Economy, United Nations Environment Programme (UNEP), Page 588.

135 UNEP (2011). Towards a Green Economy: Finance: Supporting the Transition to a Global Green Economy, United Nations Environment Programme (UNEP), Page 589.

136 These are the European Investment Bank (EUR 50 million); Caisse des Depots (EUR 25 million); Instituto de Credito Oficial (EUR 10 million); KfW Bankengruppe (EUR 25 million); and, the Nordic Investment Bank (EUR 15 million).

137 AMCHUD/UN-Habitat (2005). *Urban Governance in Africa: Experiences and Challenges*, African Ministers Conference on Housing and Urban Development (AMCHUD), 31 January to 4 February 2005, Durban, South Africa, Extract from background paper on urban governance prepared by UN-Habitat.

138 AMCHUD/UN-Habitat (2005). *Urban Governance in Africa: Experiences and Challenges*, African Ministers Conference on Housing and Urban Development (AMCHUD), 31 January to 4 February 2005, Durban, South Africa, Extract from background paper on urban governance prepared by UN-Habitat.

139 UN-Habitat (2010/11). *State of the World's Cities 2010/11: Bridging the Urban Divide*, United Nations Human Settlements Programme, UN Habitat, London, Sterling, VA.

140 Pieterse, E. (2011). "Recasting urban sustainability in the south", *Development*, 54, 3, 309-316. (RAUS).

141 www.sdinet.org/

142 www.pdfghana.org/

143 Chege, P. (2006). "Participatory urban planning and partnerships building: Supporting provision of access to basic services for the urban poor: A case study based on Practical Action's (ITDG) experiences in Kitale, a secondary town in Kenya", paper presented at 5th FIG Regional Conference on Promoting Land Administration and Good Governance, Accra, Ghana, March 8-11, 2006.

144 Harris, L.M., and Morinville, C. (2013). Improving participatory water governance in Accra, Ghana, CIGI - Africa Initiative Policy Brief Series, Policy Brief, No. 7.

145 APFSU (2007). "Climate change and Africa", Africa Partnership Forum Support Unit (APFSU), Briefing Paper No. 1, September 2007, paper presented at 8th Meeting of the Africa Partnership Forum in Berlin, Germany, 22-23 May 2007, website: www.africapartnershipforum.org.

146 APFSU (2007). "Climate change and Africa", Africa Partnership Forum Support Unit (APFSU), Briefing Paper No. 1, September 2007, paper presented at 8th Meeting of the Africa Partnership Forum in Berlin, Germany, 22-23 May 2007, website: www.africapartnershipforum.org.

147 APFSU (2007). "Climate change and Africa", Africa Partnership Forum Support Unit (APFSU), Briefing Paper No. 1, September 2007, paper presented at 8th Meeting of the Africa Partnership Forum in Berlin, Germany, 22-23 May 2007, website: www.africapartnershipforum.org.

148 World Bank (2011). "Summary. Climate Change, Disaster Risk and the Urban Poor. Cities Building Resilience for a Changing World", The World Bank/ The International Bank for Reconstruction and Development (USA, Washington). Page 14.

149 Lukamba, M.T. (2010). "Natural disasters in African countries: what can we learn about them? *The Journal for Transdisciplinary Research in*

ENDNOTES

Southern Africa, No. 6, vol. 2., pp. 478-495. Page 478.

150 *Swilling, M. and Fischer-Kowalski, M. (2010) ' Decoupling and Sustainable Resource Management: Towards a Conceptual Framework'. Paris: International Panel for Sustainable Resource Management, United Nations Environment Programme*

151 Pieterse, E. (2011). "Recasting urban sustainability in the south." *Development*, 54, 3, 309-316. (RAUS).

152 GER Buildings, (2011). *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication,* www.unep.org/greeneconomy, 328-371, United Nations Environment Programme. In: Peter, C. and Swilling, M. (2012). "Sustainable, resource efficient cities – making it happen!" United Nations Environment Programme (UNEP). Page 30.

153 IPCC (Intergovernmental Panel on Climate Change). (2007a). "Climate Change 2007: Mitigation of Climate Change", Contribution of Working Group III to the *Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, Cambridge, New York. In: Peter, C. and Swilling, M. (2012). "Sustainable, resource efficient cities – making it happen!" United Nations Environment Programme (UNEP).

154 Peter, C. and Swilling, M. (2012). "Sustainable, resource efficient cities – making it happen!" United Nations Environment Programme (UNEP).

155 OECD (2013). OECD Economic Surveys: South Africa 2013, Organization for Economic Cooperation and Development (OECD). OECD Publishing, website (last accessed 27 August 2013): http://dx.doi.org/10.1787/eco_surveys-zaf-2013-en.

156 Minster Ebrahim Patel (2013). Infrastructure Development and job creation media briefing, Issued by Government Communication and Information System (GCIS), 7 Mar 2013. Available at: www.info.gov.za/speech/DynamicAction?pageid=461&tid=100770. Last accessed 27 August 2013.

157 Government of South Africa (undated). *Green Economy Accord*, Website (last accessed 28 August 2013): www.nedlac.org.za/media/17514/finalgreeneconomyaccord.pdf.

158 Peter, C. and Swilling, M. (2012). "Sustainable, resource efficient cities – making it happen!" United Nations Environment Programme (UNEP). Page 36.

159 ADB (2011). *Africa in 50 Years Time. The Road Towards Inclusive Growth*, African Development Bank (ADB) (Tunisia, Tunis), September 2011. Page 28.

160 Kauffman, C. (2005). Energy and poverty in Africa, OECD Development Centre and African Development Bank, Policy Insights, No. 8, website: www.oecd.org/dev/africanoutlook.

161 GER Waste, (2011). *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication,* www.unep.org/greeneconomy, 284-327, United Nations Environment Programme. In: Peter, C. and Swilling, M. (2012). "Sustainable, resource efficient cities – making it happen!" United Nations Environment Programme (UNEP). Page 32,

162 Peter, C. and Swilling, M. (2012). "Sustainable, resource efficient cities – making it happen!" United Nations Environment Programme (UNEP). Page 32.

163 Peter, C. and Swilling, M. (2012). "Sustainable, resource efficient cities – making it happen!" United Nations Environment Programme (UNEP). Page 33.

164 Strachan, L. (2007). Mariannhill Landfill Conservancy – A 'Closed Loop' Design, Available at: http://landfillconservancies.com/docs/mlc_closed_loop_paper.pdf. In: Peter, C. and Swilling, M. (2012). "Sustainable, resource efficient cities – making it happen!" United Nations Environment Programme (UNEP). Page 33.

165 Peter, C. and Swilling, M. (2012). "Sustainable, resource efficient cities – making it happen!" United Nations Environment Programme (UNEP). Page 34.

166 Peter, C. and Swilling, M. (2012). "Sustainable, resource efficient cities – making it happen!" United Nations Environment Programme (UNEP).

167 UN-Habitat (2012). "UN System Task Team to support the preparation of the Post-2015 UN Development Agenda: Draft Concept Note" 6 January 2012. Available at: www.un.org/en/development/desa/policy/untaskteam_undf/concept_note.pdf; Rippin, N. (2012). "Progress, Prospects and Lessons from the MDGs." Background Research Paper. Submitted to the High Level Panel on the Post-2015 Development Agenda. German Development Institute. University of Göttingen. Available at: www.post2015hlp.org/wp-content/uploads/2013/05/Rippin_Progress-Prospects-and-Lessons-from-the-MDGs.pdf; UN-Habitat (2012). "Proposed Sustainable Development Goal: Sustainable Cities & Human Settlements." Available at: www.unhabitat.org/downloads/docs/11858_1_594728.pdf.

168 Peter, C. and Swilling, M. (2012). "Sustainable, resource efficient cities – making it happen!" United Nations Environment Programme (UNEP). Page 49.

169 Peter, C. and Swilling, M. (2012). "Sustainable, resource efficient cities – making it happen!" United Nations Environment Programme (UNEP).

170 Simone, A. (2002). "Principles and realities of urban governance in Africa", UN-Habitat Global Campaign on Urban Governance.

171 UN Habitat (2012a). Urban Patterns for a Green Economy. Clustering for Competitiveness, UN-Habitat, Nairobi.

172 For a more detailed study on clustering for competitiveness in service of green urban economic growth see UN-Habitat (2012). *Urban Patterns for a Green Economy. Clustering for Competitiveness*, UN-Habitat (Kenya, Nairobi)

173 Swilling, M. and Annecke, E. (2012). Rethinking Urbanism, in – Just Transitions: Explorations of Sustainability in an Unfair World (Cape Town, Juta).

174 UN Habitat (2012b). Urban Patterns for a Green Economy. Working with Nature, UN-Habitat, Nairobi.

175 UN Habitat (2012c). Urban Patterns for a Green Economy. Leveraging Density, UN-Habitat, Nairobi.

176 UN Habitat (2012d). Urban Patterns for a Green Economy. Optimizing Infrastructure, UN-Habitat, Nairobi.

177 Swilling, M. and Annecke, E. (2012). Rethinking Urbanism, in – Just Transitions: Explorations of Sustainability in an Unfair World (Cape Town, Juta).

178 Pieterse, E. (2011). "Recasting urban sustainability in the south", *Development*, 54, 3, 309-316. (RAUS). Page 313.

179 WSB & WBI (2000). *Independent Water and Sanitation Providers in African cities: Full Report of a Ten-Country Study*, World Sanitation Programme (WSP) and World Bank Institute (WBI), Bernard Collignon and Marc Vezina.

PART TWO

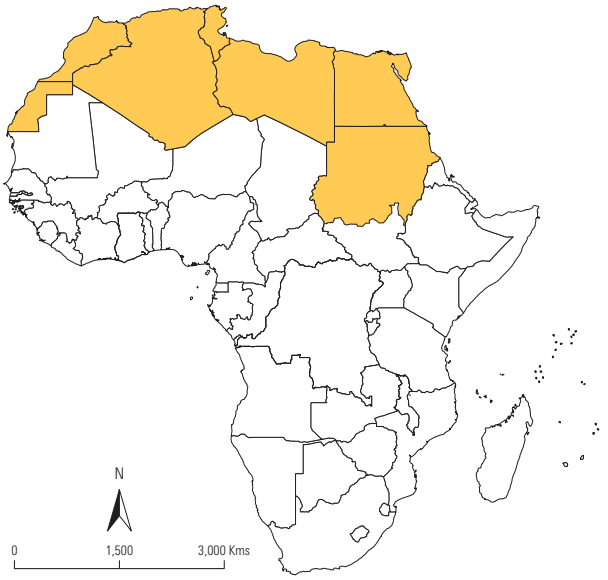
THE STATE OF **NORTHERN AFRICAN CITIES**

Sunset over Cairo, by far the sub-region's largest city.
©Bart Acke/Shutterstock

2.1
Population and Urbanization

Congested early morning traffic blocks Sharia Pasha al Mek, a main thoroughfare in Souq Al-Arabi in central Khartoum. **©Andrew McConnell/Panos Pictures**

MAP 2.1: **THE NORTHERN AFRICAN SUB-REGION**



For the purposes of this report, the Northern African sub-region includes seven countries: Algeria, Egypt, Libya, Morocco, Sudan, Tunisia and Western Sahara.[1]

The population of the sub-region increased from just under 200 million in 2010 (Table 2.1) to 202.7 million in 2011. Of these, 104.4 million (51.5 per cent) lived in areas classified as urban and 98.3 million (48.5 per cent) rural. As a result of the sub-region's largely arid and desert conditions, its cities are quite unevenly spread with most urban settlements located along the southern Mediterranean coastal rim and in the Nile River Valley and Delta. More specifically, the Nile Valley and Delta concentrate 35.0 per cent of the sub-region's urban dwellers, while Egypt's 82.5 million inhabitants represent over 40 per cent of Northern Africa's total population.

Urbanization Levels (2000-2050)

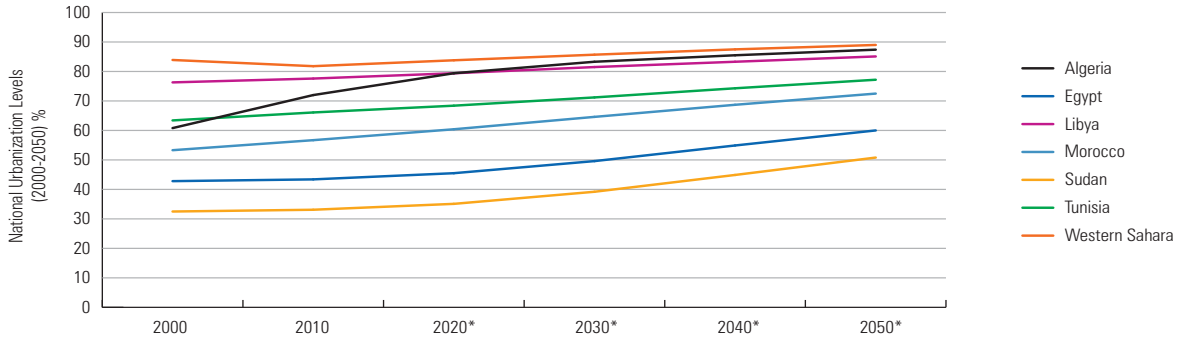
The high share of rural-urban migration in urban population growth of the 1980s and 1990s has now largely abated in Northern Africa. The majority of the Northern African population now lives in cities (Figure 2.1), except for Egypt (43.4 per cent) and Sudan (33.1 per cent).[2] Consequently, more modest annual growth rates of around 2.0 per cent associated with predominantly natural urban growth now prevail in the countries with urban majorities. At the national

TABLE 2.1: **NORTHERN AFRICA POPULATION DATA (2000-2050)**

Population	2000	2005	2010	2015*	2020*	2025*	2030*	2035*	2040*	2045*	2050*
Total (*000)	169,535	184,384	199,511	215,377	231,210	245,756	259,029	271,092	282,024	291,715	299,888
Urban (*000)	82,079	91,896	102,249	113,307	125,030	136,873	148,941	161,152	173,175	184,850	195,877
Urban (%)	48.4	49.8	51.2	52.6	54.1	55.7	57.5	59.4	61.4	63.4	65.3
Rural (%)	51.6	50.2	48.8	47.4	45.9	44.3	42.5	40.6	38.6	36.6	34.7

** Projections*
Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York 2012.

FIGURE 2.1: **EXISTING AND PROJECTED TRENDS IN URBANIZATION OF NORTHERN AFRICAN COUNTRIES 1950-2050**



** Projections*
Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York 2012.

level, these growth rates are anticipated to decline to 1.7 per cent annually from 2020 to 2030.

The clear exception is Sudan, where a projected average annual urban growth rate of 2.78 per cent for 2010 to 2020 is still comparatively high and expected to reach an annual average of 3.0 per cent from 2020 to 2030. Sudan's urban growth rates are expected to start declining after 2035. However, these growth figures for Sudan may change at short notice since significant numbers of urban residents are migrating to the newly-independent Republic of South Sudan and, to a lesser extent, the reverse. The impacts of these outflows on Sudanese cities like El Obeid, Kadugli, Nyala and, especially, Khartoum are still unclear. Until better insight into these migrations can be obtained, the Khartoum agglomeration remains projected to grow from 4.52 million in 2011 to 7.09 million by 2050.

Despite the reduction or elimination of urban slums, cities of Northern Africa continue to face many challenges. The events of 2011, which became known as the "Arab Spring" (see Box 1.3), anticipated in the 2008 issue of this report,[3] indicate that Northern African cities still need to produce many more affordable homes rapidly, as well as the associated basic services, to meet future demand. The large demographic youth bulge, characteristic of many Northern African nations, continues to translate into latent and actual high urban household formation rates by youngsters desiring to start their own families and seeking access to affordable homes with municipal services.

As the repeated urban demonstrations in Northern Africa show, the Arab Spring is far from over. The ousting in 2011 of political leaders, who had failed to cater adequately for the needs of their large, young and mostly urban-based cohorts, was only the start of currently unfolding and profound social, economic and political transformation processes in the sub-region. The sub-region's stability will critically depend on the establishment of governments delivering responsive urban governance and offering real economic and affordable housing alternatives to large numbers of politically, socially and culturally disenfranchised urban youth. It is imperative that Northern African cities continue to deliver adequate housing units, urban services, efficient and affordable urban mobility and gainful urban-based employment opportunities in line with the demands of their young urban masses. That is especially the case since there are indications that a new urban trend is emerging in Africa's large cities, as explained below.

The Largest Northern African Cities

Although urbanization rates in Northern Africa are mostly decelerating at sub-regional and national levels, the dynamics of several individual cities exceeding 750,000 inhabitants show a somewhat different picture. Cairo remains by far Northern Africa's largest and only mega city. It is the fastest growing in *absolute* terms, with a projected average of 222,000 new citizens each year until 2020 (Table 2.2). Recent projections[4] indicate renewed growth acceleration among Africa's largest cities, and Cairo is no exception.

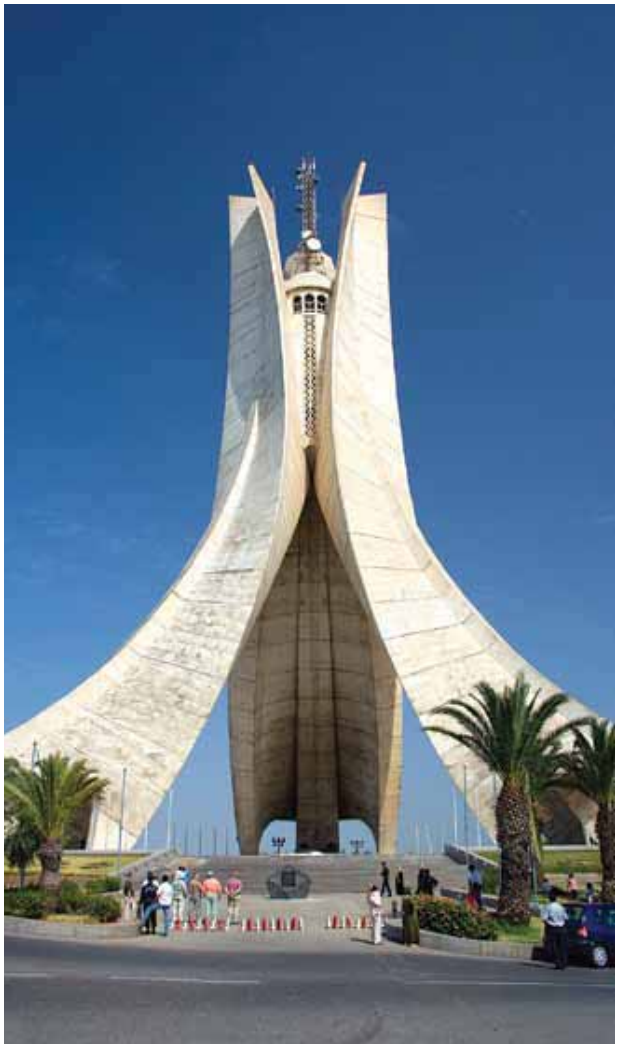
After an urban growth deceleration trend from 1970 to 2010, during which Cairo's average annual growth rates hovered around 0.8 per cent, a renewed urban growth acceleration cycle is now predicted, increasing to an average

TABLE 2.2: **POPULATION DYNAMICS FOR SELECTED NORTHERN AFRICAN CITIES OF MORE THAN 750,000 INHABITANTS**

City	Country	2011 Population (*000)	Average Annual Growth Rate 2010-20* (%)	% of Urban Population 2011	% of Total Population 2011	Average Annual Population Increase 2010-20*	2025 Population (*000)
Cairo	Egypt	11,169	1.84	31.1	13.5	222,300	14,740
Khartoum	Sudan	4,632	2.89	22.6	17.6	151,200	7,090
Alexandria	Egypt	4,494	2.13	12.4	5.4	111,700	6,189
Casablanca	Morocco	3,046	1.74	16.7	9.5	57,100	3,911
Algiers	Algeria	2,916	2.36	11.1	8.1	75,700	3,977
Rabat	Morocco	1,843	2.03	10.0	5.7	40,600	2,429
Tripoli	Libya	1,127	1.76	22.6	17.5	21,300	1,456
Fes	Morocco	1,088	2.14	6.5	3.7	25,500	1,455
Marrakech	Morocco	939	2.17	5.1	2.9	22,300	1,262
Tunis	Tunisia	790	1.99	11.1	7.3	15,800	1,018
Oran	Algeria	783	1.71	2.8	2.2	14,400	1,026

** Projections*

Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York, 2012.



▲ Monument of the Martyrs, Algiers, Algeria. **©David Bjorgen.**
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of around 2.11 per cent annually over the 2015-2025 decade. Whether this accelerating growth is considered merely "inconvenient" or an "opportunity for change" will depend on the nature and depth of urban governance reforms and the associated responses to increasing demands for affordable housing, municipal services, mobility and employment for Northern Africa's urban youth.

Khartoum (in 2011 the second-largest agglomeration in the sub-region) remains the sub-region's fastest growing large city in relative terms with average annual growth rates of close to 2.9 per cent for the current decade (See Table 2.2). That will add, on average, some 151,000 residents to Khartoum's population every year until 2025. These figures for Khartoum do not yet reflect current population outflows to the newly-indepentent Republic of South Sudan, and actual growth of the city agglomeration is therefore likely to be lower than 2.9 per cent.

Algiers is also projected to experience renewed acceleration of its annual growth rates, projected to peak between 2015 and 2020 at an annual average of 2.38 per cent over that half decade. The city could be heading for a significant 1.13 million more residents between 2011 and 2025, equivalent to a 39.6 per cent increase over its 2011 population. If this growth materializes, it will lead to a city size-ranking change around 2019 when Algiers' projected population will overtake Casablanca's.

In Morocco, concerted attempts to steer urban growth away from Rabat-Salé and Tangier are now taking effect and growth rates are decelerating in both agglomerations. Casablanca, Fes and Marrakech, however, are projected to see a secondary urbanization rate increase, peaking at just over 2 per cent annually between 2015 and 2020 after which their growth is projected to start decelerating once more. Tripoli and Tunis are projected to experience brief growth acceleration, peaking at just over 2 per cent and 1.88 per cent respectively between 2015 and 2020.

2.2
Global Change and Implications for Urban Development

▲ The ENI Oil Bouri DP4 in the Libyan Bouri Field is the largest platform in the Mediterranean sea. Libya's oil revenues combined with a small population have given Libya the highest nominal per capita GDP in Africa, though GDP has still not recovered to pre-war levels. **©Cipiota.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

The urban development of any region will depend largely on changes in the global political economy. For a region integrated into the Mediterranean and the Arab worlds this is particularly valid. Although countries in Northern Africa have tended to insulate themselves politically and economically from each other, anxiously preserving most aspects of their sovereignty, they share a number of vulnerabilities. Whether oil-exporters or importers they remain hostage to fluctuations in energy prices. As food importers they are vulnerable to movements in global grain markets. As part of the Muslim world in the Middle East and Northern Africa, all were affected by the Arab Spring.

Northern Africa's Macroeconomic Prospects

Most of Africa's economies have recovered quite well from the immediate effects of the global economic crisis of 2008-2009. However, the subsequent global slowdown, together with concerns about the political consequences of austerity measures in the United States' and European budgets, may constrain growth. Not only is it expected that the international economic environment will remain difficult in the immediate future, but recent global projections have revised economic growth figures steadily downwards, and have not ruled out a protracted recession in Europe's economies.[5] This is particularly true among the countries of Mediterranean Europe, where a contagion or spread of debt crises has created political and social distress on a scale not seen for decades. From a macropolicy perspective, the systemic crises involving low or negative growth; rapidly growing unemployment; and curbs on social welfare spending will concentrate the minds of Europe's political leaders on issues such as competitiveness, fiscal balance, productivity and jobs. This is likely, in the foreseeable future, to distract attention from longer-term concerns about climate change and sustainability.[6]

The economic crisis has revealed the fragility of cooperation at international and regional levels, and the tendency of

TABLE 2.3: **NORTHERN AFRICA COUNTRY FORECASTS, GDP ANNUAL PERCENTAGE GROWTH AT MARKET PRICES**

Country	Average 1995-2004	2005	2006	2007	2008	2009	2010	2011	2012	2013*	2014*	2018*
Algeria	4.1	5.9	1.7	3.4	2.0	1.7	3.6	2.4	2.5	3.3	3.4	3.9
Egypt	4.8	4.5	6.8	7.1	7.2	4.7	5.1	1.8	2.2	2.0	3.3	6.5
Libya	0.6	11.9	6.5	6.4	2.7	-0.8	5.0	-62.1	104.5	20.2	10.1	5.0
Morocco	3.4	3.0	7.8	2.7	5.6	4.8	3.6	5.0	3.0	4.5	4.8	5.8
Sudan**	15.8	0.4	8.9	8.5	3.0	5.2	2.5	-1.9	-4.4	1.2	2.6	4.0
Tunisia	4.8	4.0	5.7	6.3	4.5	3.1	3.1	-1.9	3.6	4.0	4.5	4.8

**Projections*
***Data for 2011 exclude South Sudan after 9 July 2011. Data from 2012 onward pertain to current Sudan.*
Source: International Monetary Fund (2013). World Economic Outlook April 2013: Hopes, Realities, Risks (Washington, IMF) p 154.

democratic systems to respond to the immediate fears and concerns of electorates, which tend to manifest themselves in parochial or narrow ways. Ironically, this was probably of less concern to policymakers in Northern Africa before the Arab Spring, when the state's direct role in socioeconomic matters went largely unquestioned. Although that situation may now be changing, democratic states do not necessarily facilitate the adoption of long-term plans or policies, because political horizons are mostly defined by the next election or public uprising, whichever comes first. This tendency is exacerbated by the role of the media in politics, as well as the simplification of complex and inter-related issues in the public realm. All of this will have an impact on the willingness of governments to adopt policies whose long-term gains are difficult to quantify but whose short-term costs are quite visible. This applies particularly to the field of climate change mitigation and response.

Calculations of gross domestic product (GDP) are especially difficult to make in countries where informality and family businesses play a major role in the national economy. Where political considerations and state propaganda requirements come into play, these problems are compounded. Nevertheless, GDP figures (see Table 2.3) are often taken as a proxy for economic growth if not development, and they often help guide public policy. This is important, for GDP takes little account of alterations to or degradation of the natural environment. Environmental costs inflicted by economic growth are usually ignored.[7]

Taking these reservations into account, the figures suggest only a slow recovery from the effects of uprisings in Egypt, Libya and Tunisia and other Northern African states not directly involved. Any continuation of unrest in these three countries will reduce their chances of resumed economic growth. Per capita GDP in Algeria, Egypt and Morocco were lower at the end of 2012 than immediately prior to the uprisings. Tourism has fallen off in reaction to civil unrest and violence. Migrant workers' remittances, however, have held up remarkably well. What has been notable is the rapid recovery of the Libyan economy as oil production has returned to almost pre-civil war levels, resulting in projected GDP growth of 104.5 per cent in 2012.[8] Deepening of the political and constitutional crises in Egypt, Libya and Tunisia will impact adversely upon sustained economic recovery in those countries.[9]

The future of Northern Africa's states depends on a number of unquantifiable variables, including the trajectory of energy prices. Oil-exporting Algeria, Libya and Sudan will be affected very differently if compared to oil importers Morocco and Tunisia. Given the location of the world's principal known oil reserves – the Middle East – its proximity to Northern Africa and the region's volatility, oil prices are subject to unpredictable and sudden change. A great deal will depend on events in the violently troubled geopolitical zone comprising Syria, Lebanon, Israel and Iran. Planned exploitation of massive gas fields based on new fracturing technologies, particularly in the United States, will make an appreciable difference to oil prices, though such developments are often economically predicated on oil prices remaining relatively high.

Northern African governments have to tackle the root causes of social and political unrest to appease legitimate and highly popular expectations in the short run while at the same time providing citizens with real democratic alternatives in the longer term.[10] It is evident that economic growth figures would be revised downwards should political and economic stability not return in the near future.

The creation of a more open and competitive business environment, especially for small enterprises, as well as the provision of more equal access to financing and job or business opportunities seem key to achieving sustained and more inclusive growth throughout the sub-region. How this is to be achieved in the current global economic climate remains to be seen. New administrations in Northern Africa, even if they manage to ride out continued waves of protest, are unlikely to embrace radically innovative solutions, especially if these fail to attract financial capital from investors who are increasingly averse to high risk enterprises offering uncertain returns.[11] Foreign direct investment from rich Arab Gulf states and China is increasingly important. A good proportion of this investment will be in construction and high-end real estate, although the Chinese have also assisted with building government-subsidized housing in Algeria. Given the recent history of urban modernization in the Gulf and China, it seems unlikely that more investment from these areas will do much to promote traditional or indigenous models of city development.

There has recently been speculation about the closer integration of Mediterranean economies. At present, the prospect of some Northern African states joining the European Union seems increasingly distant. At best, it appears that the eurozone crisis could promote the development of multiple levels of politico-economic association under the European Neighbourhood Policy and other European Union instruments, rather than any form of membership status for Northern African states. The impact of economic and fiscal crises in Southern Europe is likely to continue for many years, raising the further question of whether closer relations might be achieved among Northern Africa's states. Collaboration on climate change related issues seem to be essential, if not globally, then at least among all states bordering the Mediterranean. The benefits from such cooperation are more apparent and easier to share than the building of trade blocs, though these may also emerge should regions feel compelled to return to openly protectionist practices.

The presence of several million Muslims in Western Europe and their continued connection with the ideological struggles in their countries of spiritual if not physical origin further complicates the anticipating of outcomes.

The Arab Spring: Opening Political Space for Urban Reform?

In many respects the Arab Spring of 2011 (see Box 1.3) was the latest of a series of popular protests against social and political exclusion among city dwellers of Northern Africa. These earlier events had provided experience and organization for elements of labour and student society that were remobilized as the momentum of protest carried the largely youthful crowds into demands for regime change, particularly in Tunisia and Egypt.[12] The fall of governments in Egypt, Libya and Tunisia has resulted in more protracted political, social and economic turbulence than anticipated by those celebrating the Arab Spring. As new governments attempted to introduce new constitutional dispensations, they faced the resistance of deeply ingrained vested political and economic interests. Incoming governments also had to cope with opposition from political rivals who felt their concerns were being ignored in the reform processes. This expressed itself in continued urban unrest in Egypt, Libya and Tunisia, and in the case of Egypt resulted in the military retaking power in August 2013.[13]

Increasingly violent protests continue as new and inexperienced governments struggle with difficult policy choices. The slow pace of reform and the continued concentration of political and economic power in the hands of established elites led to renewed trade union demonstrations, revealing public impatience with the lack of positive change in living standards, as well as the continued political importance of public opinion in the cities. The poorer districts of Marrakech have also seen repeated outbreaks of violence in protests against high electricity fees.[14] The new governments are attempting to revive country economies and, at the same time, satisfy immediate popular demands, many of which are based on high expectations and unrealistic timeframes. These are especially urgent with regard to tackling massive youth unemployment, creating access to affordable housing and urban services, or dealing with ingrained corruption.[15]

▲ An Egyptian protester acknowledges the influence of the Tunisian revolution on Egypt's own. The fall-out from the Arab Spring has been protracted political, social and economic turbulence across the sub-region. **©Sherif9282.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

The outside world is slowly coming to grips with events across Northern Africa. The many wide-ranging impacts hold various implications for urban areas. Has the apparent demand, initially led by young urbanites, for a measure of democratic space opened the way for meaningful debate about the preferred shape of Northern Africa's urban development? Have the street protests, with their often dramatic consequences for incumbent regimes, created an environment in which grassroots concerns about the liveability of Northern Africa's cities will be considered seriously by their countries' rulers?

Some commentators, well-versed in the politics of Northern Africa and the Middle East, warn that the recently unleashed forces are more likely to favour actors with an essentially undemocratic outlook, including the rather sudden emergence into public life of previously suppressed Islamist parties.[16] Although Algeria has escaped the most violent of the democratization protests, there are warnings

of security threats in the south of the country from militant Islamist groups in neighbouring states in the Sahel. Egypt and Tunisia have already seen a backlash against the imposition of stricter Islamic codes, though in the case of the former this seems unlikely to herald a smooth transition to a democratic dispensation.[17]

Whatever the future holds, Northern Africa's cities, mosques, universities, businesses, trade unions and public media will play a key role in shaping what will continue to be an often inchoate debate. Rural revolts have certainly played their part in historical change, but most of the present day key contests for power and influence take place in the urban milieu. Sudan may provide an exception, in that the opposition to the current dispensation draws much of its strength from the country's periphery, although the strategic aim of Sudan's various rebellions is to seize power in Khartoum as a precursor to making new political arrangements that might dilute the political dominance of the capital city. Recent violent protests against the removal of fuel subsidies in Sudan, however, although they started in the small central Sudanese city of Wad Medani, quickly spread to the capital Khartoum and its twin-city Omdurman. These protests should serve as a wake-up call for the need for political dialogue.

Even though absolute poverty and deprivation may be more severe in the countryside, it is in Northern Africa's urban areas that inequality and inequity are politically most acute. Capital cities provide the headquarters for government and administration in highly centralized systems. Cities also house the major commercial enterprises and host millions of people subsisting in underserviced informal settlements. It was the potent alliance of frustrated middle class youth and the urban poor that provided fuel for the political upheavals in 2011.[18] There was nothing essentially new in the protests that toppled governments in Egypt and Tunisia; Libya was an exception. Protests, strikes and food riots had become increasingly common over the past decade as the tacit compact between the rulers and the ruled, based on the provision of basic needs by the former in exchange for the political acquiescence of the latter, slowly unravelled, especially in countries without the vast revenues created by hydrocarbons.

By the end of 2012 there were many indications that the battles to define the political transitions in much of Northern Africa had opened public space for an ideological debate, which remained chaotic and was reflected in a struggle for control of the streets of the principal cities. Though the removal of some autocrats may have promised a period of renewal and an ability to reconsider and reconfigure the political space more democratically, debate is still too violent to ensure a fair hearing for the voices of reason about the existential future of Northern Africa's cities. Even though issues of urban planning and sustainable development lie at the heart of many of the popular protests, these tend to be articulated at too elevated a level to move the masses. Until such times as political platforms can be framed coherently, and in broad consultation with those affected by them, this is likely to remain the case. Politics is always largely about power – for the present, across much of Northern Africa, it is all about power – and until these battles show signs of resolution, further consideration of sustainable urban reform is likely to be stalled.

The Economic Role of Cities

Major cities are prominent in the affairs and the economies of Northern Africa. Even where hydrocarbons dominate national economies, one must bear in mind that such resources are finite and that economic transformation will involve massive changes in the roles cities will assume. Morocco and Tunisia, for example, have wisely shifted their economic emphasis from agriculture to industry and services, particularly tourism, reinforcing the role of their cities in the national economy. Algeria has also launched a 15-year tourism development plan, partly to attract visitors and investments to its cities. Here, and elsewhere in the sub-region, there is rehabilitation of historic medinas (see Box 2.1), which had often been allowed to decay.

Most of the economic activities of the sub-region are concentrated in a few large cities along the coast, but the recent upheavals have drawn attention to the needs of secondary cities where much of the Arab Spring was incubated.[20] The Tunisian government is acutely aware of the developmental gap between primary and secondary cities and is targeting urgent interventions in the latter. Algeria, too, is trying to shift economic activity towards the smaller cities. The new Egyptian government has also emphasized the need to achieve more balanced geographical development by giving more attention to the needs of the country's secondary cities.[21]

Morocco is the only Northern African country where the capital city is not demographically and economically dominant, the principal city being Casablanca and not the political capital Rabat-Salé. Most of Morocco's urban areas have been expanding relatively slowly with the most rapid growth occurring near existing urban agglomerations and along the coast, especially along prominent highway corridors. Urbanized areas around Agadir and Casablanca have been growing rapidly, as have other urban areas in the coastal provinces. Most of Morocco's economic activities and wealth are concentrated in Greater Casablanca. Eighty per cent of economic activities in industry and services are in Casablanca, Rabat-Salé and Tangiers, which account for 75 per cent of all urban employment, yet harbour only 10 per cent of the country's population.[22]

In Algeria, much urban expansion has been the result of richer residents migrating to the periphery as private car ownership increases.[23] Algeria's economy is almost totally dependent on hydrocarbons, which have a very limited direct multiplier effect in terms of economic activity and job creation. Most other Algerian economic activities are in Algiers and there are regional development plans to promote growth outside the city to reduce pressure on the Algerian capital.[24]

Tunisia's fastest-growing urban areas have been on the coast near Sousse and Tunis.[25] Tunis, the major economic and

BOX 2.1: **MEDINAS 2030 INITIATIVE**

Bab Mansour, Meknes, Morocco. Meknes was once the capital of Morocco and the old medina of Meknes is a UNESCO World Heritage Site. **©Karol Kozlowski/Shutterstock.**

The Medinas 2030 Initiative was launched by the European Investment Bank in cooperation with international organizations, city associations and assorted experts. In the historic Arab city the *medina* (literally town or city in Arabic – yet often derided in colonial times as the "native quarter") fulfilled a specific role in the social and religious life of urban communities. The initiative aims to promote awareness among policymakers of the need to rehabilitate historic city centres as part of an integrated approach to governance, urban rehabilitation and spatial, social and economic planning.

The imitation of foreign architectural and town planning styles has been a dominant theme in the modern Arab city for the last century and competition with traditional Islamic forms is partly responsible for the chaos of urban settings in Northern Africa and beyond. The resulting aesthetic and social confusion is reflected in the social and ideological dilemmas characterizing the Islam's social and intellectual engagement with the modern world. For most of the past century the dense urban form of the traditional Arab city became associated with backwardness and opposition to progress.[19] This resulted in the often uncritical acceptance of modernist urban planning models, and in urban sprawl facilitated by the apparently limitless desert hinterlands. By the 1990s, city centres had become increasingly depopulated as those with means sought to escape traffic congestion and air pollution. The result was a perpetual process of social and economic deterioration, most notably in the historic town centres of the Maghreb countries.

By the beginning of the 21st century, urban densification emerged as a new planning paradigm conducive to low carbon, sustainable urban development in an inclusive and more equitable city. Such ideas have yet to take root in many Arab States and more compact design appears to result from private community initiatives rather than grand planning. Despite some who deride *medinas* as informal settlements, these are dense and multifunctional urban neighbourhoods.

Local consultations on the Initiative emphasized that to be sustainable the programme must focus on the needs of residents and incorporate housing, local economic development and heritage conservation. Attempts to revitalize the historic centres of Arab cities and the traditional economic activities with which they are associated are expected to promote tourism, create jobs and revive pride in local heritage. Some 16 historic *medinas* have been identified by the project for further documentary study, though the list is not final. Selected Northern African *medinas* are in Egypt (Cairo), Morocco (Casablanca, Fez, Meknès, Tetouan), and Tunisia (Kairouan, Sfax, Sousse, Tunis) with Meknès selected as the focus of the pilot project.

Sources: *Center for Mediterranean Integration (2010), Medinas 2030: Rehabilitation of Historic City Centres, Marseilles; (Seyyed Hossein Nasr, (2010) Islam in the Modern World: Challenged by the West, Threatened by Fundamentalism, Keeping Faith with Tradition, Harper One, New York, pp 227-241)*

Constantine, the third largest city in Algeria, is home to several important historical sites. It is often referred to as the "City of Bridges" due to the numerous picturesque bridges connecting the mountains the city is built on. **©Pichugin Dmitry/Shutterstock.**

industrial pole, produced a quarter of the wealth in 2002 and 69 per cent of the job opportunities, mainly in services. The ending of media censorship after the fall of President Zine el Abidine Ben Ali revealed starkly the regional imbalances of Tunisia's economic and social development. The new administration has re-emphasized the priority of promoting inland economic development for local employment creation in the traditionally labour-exporting regions. As part of its 2006-2016 industrialization strategy, Tunisia has begun clustering export-oriented economic activities in specialized competitive poles in cities like Sfax and Sousse, in cooperation with private enterprise.[26]

Libya is the most urbanized country in Northern Africa, with almost 40 per cent of its urban population concentrated around the competing poles of Tripoli and Benghazi, each of which has historically distinct hinterlands in Tripolitania and Cyrenaica, respectively.[27] After Colonel Muammar Qadhafi seized power in 1969, Libya's political centre shifted gradually towards Tripoli, though most of the country's oil is in Cyrenaica. Under Qadhafi's rule, Libya limited its exposure to the world economy and other external influences as much as possible. With its limited exposure to the world economy, Libya was affected more by falling commodity and oil prices than by direct impacts of the 2008-9 crisis.

Cairo and Alexandria dominate the Egyptian economy, with 57 per cent of all manufacturing located in Greater Cairo and 22.5 per cent in Alexandria - the country's main seaport. Cities such as Damietta, Port Said and Suez produce textiles, furniture, chemicals and non-metallic mineral products.[28]

The city of Khartoum and its resident political and economic elites have dominated Sudan's history since the end of the 19th century. The Khartoum authorities have spent much time and effort, since independence in 1956, trying to cope with rebellions from the periphery.

South Sudan, with its capital in Juba, gained independence in 2011 and 75 per cent of Sudan's oil now falls inside the new republic. This, and the failure of Juba and Khartoum to reach agreement on a number of outstanding issues, including the shipment of landlocked South Sudan's oil through Port Sudan on the Red Sea, has resulted in an economic catastrophe for both countries. In Khartoum this has necessitated severe budget cuts and austerity measures that do little to commend the government to its citizens, particularly in urban areas. Generally, urban areas in Northern Africa offer better income levels; access to healthcare; literacy; and lower percentages of people living in poverty. Strategic intermediaries that focus on rural-urban linkages are urgently required. However, linking economic activities in the large metropolitan areas and capitals to their secondary cities and rural areas is also important. Agencies and mechanisms are needed to build these linkages and distribute growth more evenly throughout Northern African cities and regions.

This requires consideration of how the functional specializations of secondary cities and towns can be best orientated to give them the highest levels of resilience to exogenous shocks while enabling adaptive capacity and, hence, sustainability.

2.3
Social and Environmental Challenges

Driving through the narrow streets of Khan Al-Khalili, also known as Islamic Cairo. Although the district is a popular destination for visiting tourists it is overpopulated and suffers from poor services. **©Teun Voeten/Panos Pictures**

Socioeconomic Inequality

Northern Africa's high rates of urbanization date to the 1930s, but accelerated from the 1950s onwards. Development policies adopted in the 1960s led to an exodus from neglected agricultural communities and a flow of manual labour to newly established urban industry. However, since the late 1970s the broader economic policies that informed regional, national and urban development growth strategies were heavily influenced by preconditions for funding support from the International Monetary Fund and the World Bank. Although the resulting market-oriented economic reforms led to high rates of GDP growth across much of the sub-region they also caused higher socioeconomic inequality and marginalization, further entrenching and exacerbating existing structural inequalities, especially in the sub-region's cities.[29]

At present there is little reliable research on inequality in Northern Africa, though partial data are available for Egypt, Morocco and Tunisia (Table 2.4). The entire Arab region remains deficient in the microdata necessary for current and historical analysis essential to understanding the causes and determinants of inequality. Tax evasion by the wealthy is common, which distorts the official statistics while informal economies are difficult to measure without massive household surveys. Available data, however, suggest that the sub-region shows moderately high inequality in the narrow terms of

TABLE 2.4: **POVERTY AND INCOME DISTRIBUTION INDICATORS**

	National poverty line Population below poverty line %				International poverty line Population below poverty line %			Gini coefficient (income distribution)		Share of consumption %	
Country	**Year**	**Rural**	**Urban**	**National**	**Year**	**Below USD 1**	**Below USD 2**	**Year**	**Index**	**Lowest 10%**	**Highest 10%**
Algeria	2000	…	…	15.0	2000	0.9	…	2000	0.353	2.8	26.9
Egypt	1999-2000	…	…	16.7	2005	2.0	43.9	2005	0.321	3.9	27.7
Libya	2000-2005	…	…	14.0	…	…	…	…	…	…	…
Morocco	1999	27.2	12.0	19.0	2007	2.5	14.3	2007	0.409	2.7	33.2
Sudan	…	…	…	…	…	…	…	…	…	…	…
Tunisia	2005	…	…	3.8	2000	2.6	6.6	2000	0.408	2.4	31.6

Sources: African Development Bank (2012); African Economic Outlook 2012

household expenditure in comparison with other parts of the world.[30] There is little to indicate that this pattern of inequality has altered significantly over the past three decades.

Even if the reliability of data and its comparability across time and countries could be trusted, the limitations of Gini coefficients as a measure of inequality, in terms of income and expenditure would remain.[31] Such figures fail to take other components into consideration, such as perceptions of horizontal inequality or inequality of opportunity, which are closely associated with politically significant perceptions of equity. Countries and urban areas with high levels of informality resist accurate measurement.[32] Besides being difficult to calculate with any degree of accuracy, Gini coefficients are obviously too crude a measure to capture the full range of development inequalities.

Accessing current data is difficult with latest surveys being from 2003 for Tunisia; 2007 for Morocco; and, 2008 for Egypt. There are no country surveys for Algeria, Libya or Sudan and statistics at city level are lacking throughout the sub-region.[33] A sophisticated and comparative approach to the multifaceted issues of poverty and development has been attempted with the Multidimensional Poverty Index, which is calculated across three dimensions and 10 indicators. A person is considered to be multidimensionally poor if deprived of one-third or more of the dimensions. The Index is a particularly useful tool for analysts and policymakers, since it reveals the relative components of poverty as well as the interconnections among deprivations, and can illustrate the different patterns of poverty between and across countries, including the rural-urban divide.[34]

Unless the dearth of reliable historical data is remedied and efforts are made to improve data collection, policymaking for Northern Africa's urban development will remain difficult.[35] As might have been expected, studies on Egypt, Morocco and Tunisia reveal that multidimensional poverty is far more rife in rural than urban areas.[36] What is most interesting, however, is the manner in which the components of poverty differ in relative value and intensity across states.

Climate Change

Climate projections for Northern Africa up to 2030 indicate that increases in temperature are expected to continue for the remainder of the century. It is probable that these will exceed the global average. The Mediterranean has therefore been identified as a "hot spot": a region very responsive to the effects of climate change. The ecological and socioeconomic characteristics of Northern Africa make it particularly vulnerable, since climate change will exacerbate existing desertification and water stresses.[37] Climate change simulations suggest a general decrease in rainfall across Northern Africa with a median of 12 per cent in the coastal regions.[38] This trend will, however, be marked by seasonal variations across the sub-region. Increasing population, economic development and urban population growth will add to water stresses, while salt water intrusions in aquifers in coastal areas and a deterioration of water quality will further complicate the provision of adequate supplies of fresh water to urban and rural communities and may also harm the economically important tourism sector.[39] A lack of adequate historic data makes it difficult to estimate the extent and impact of sea-level rise accurately but floods are expected to become more frequent and severe, which will predominantly affect the densely populated and economically important coastal cities.[40]

Projected climate effects on agricultural productivity differ according to causal models used and crops studied but, combined with water stress, suggest an overall reduction in domestic output and the need for increased staple imports to feed urban populations. This is particularly important in Northern Africa, where food riots occurred in 2008 and 2011. Food subsidies now account for heavy stresses on government budgets as a result and while this is perhaps of little significance to an oil exporter like Algeria, Morocco spends 0.7 per cent of its GDP on food subsidies.[41]

It is also possible that the now relatively slow rates of Northern African urbanization could once more accelerate through climate change-induced hardships in the countryside, as well as a result of immigration from other African states affected by climate change.[42]

▲
The 2011 food riots in Tunisia. © **Magharebia.** Licensed under the Creative Commons attribution 2.0 Generic License.

Water Stress

Northern African countries are depleting their renewable water sources at unsustainable rates. Demand will exceed the sub-region's maximum economically usable land-based water resources before 2025. By then, concentrated rainfall patterns and erosion will also have reduced dam capacity by silting; disrupted river flows; decreasing natural outlets for water tables; and increasing salinity in coastal aquifers. A 10-15 per cent reduction in water resources is anticipated in Algeria and Morocco, while Tunisia's water resources are expected to decline by 28 per cent by 2030 with groundwater reserves severely affected.[43] Northern African water resources are used primarily for agriculture; the sub-region accounts for over 40 per cent of Africa's irrigated acreage and over half of Africa's agricultural water withdrawals. Any substantial decline in rainfall will thus reduce agricultural production in Northern Africa. Climate change will also reduce growing season length and reduce yields for most crops. Many Northern African governments will have to make difficult choices between the imperatives of water security and food security.[44]

By 2025, climate change will probably have a greater impact on water security in Northern Africa than population growth or urbanization, with consequences for food security, importing of staples (virtual water) and employment. In Egypt, the banks of the Nile are often fertile enough to allow for two or three annual crops, but 95 per cent of Egypt and Libya is desert, with Libyan agriculture largely dependent on rainfall. Algeria farms only 3 per cent of its land, though 25 per cent of its population is employed in the agricultural sector.[45] Morocco is almost self-sufficient in food, though increasing incidence of drought necessitates more frequent grain imports.

Morocco intends to incorporate climate change adjustment measures in various sector-based strategies, such as combating desertification and soil erosion and developing water infrastructures. Implementation of the national charter for the environment and sustainable development has been slow, however, both because of the massive funding required and lack of public awareness and involvement.[46]

Regional Implications of Climate Change

Water Supply and Climate Change

Governments may feel compelled by climate change-related pressures on water supply to divert major rivers, build new dams or tap cross-border aquifers. Large fossil water aquifers beneath the Sahara include the Eastern Erg artesian aquifer (under Algeria and Tunisia) and the non-renewable Nubian Sandstone Aquifer (underlying Chad, Egypt, Libya and Sudan (see Box 2.2). The latter aquifer is already exploited by Libya and Egypt and a project was launched in 2005 to provide more information and to create an international management and legal framework for its exploitation.[47]

Egypt depends on the Nile for 95 per cent of its water needs and this river and its tributaries flow through 10 other countries[48] before entering Egypt. The Nile Agreement of 1959, signed between Egypt and Sudan, is no longer adequate, having been concluded while most of the other riparian states were colonies. Arguments over Nile water use rights therefore constitute a potentially inflammatory ingredient in regional

BOX 2.2: LIBYA'S GREAT MAN-MADE RIVER

In 1983, Libya launched one of the largest engineering projects ever undertaken: the Great Man-Made River (GMR). This project, initially budgeted at USD 25 billion, consists of a vast network of underground pipes linking the coastal cities of Benghazi, Sirte and Tripoli and agricultural projects with the aquifers of the interior, principally the Nubian Sandstone Aquifer System. This system of aquifers, extending over 2 million km^2 is believed to contain an estimated 150,000 km^3 of water deposited during the last Ice Age. This volume of water is, given the arid climate of the region's interior, essentially non-renewable.

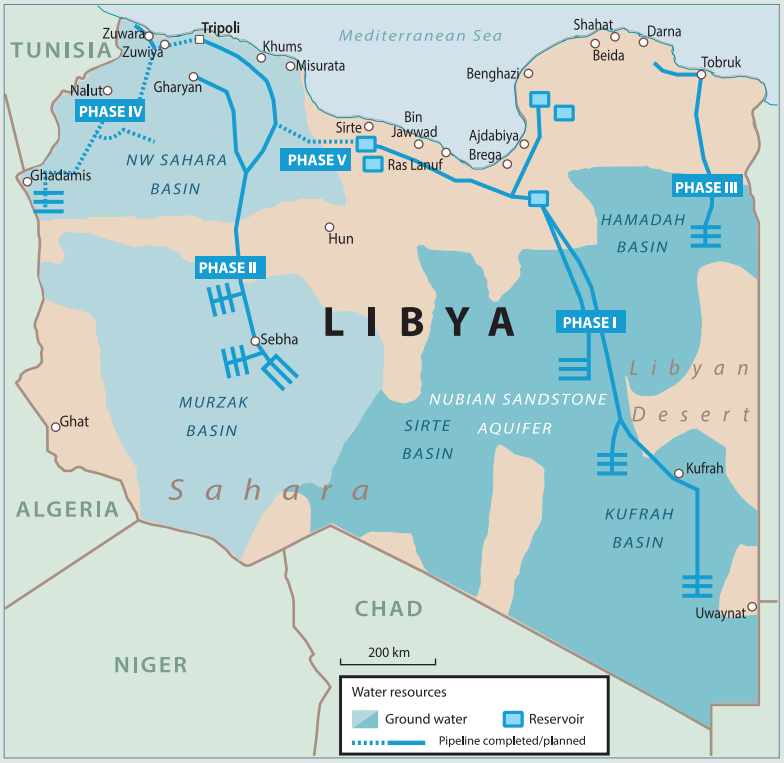
Libya has no continuous water sources and in the past depended on coastal aquifers or desalinated sea water for its drinking water. Desalination is extremely expensive while excessive removal of fresh water from coastal aquifers resulted in sea water intrusion that rendered the supply unusable for agriculture and human consumption. By 1980, Benghazi's local water supply was non-potable and the lack of usable water supplies negated expansion of irrigated agriculture to feed the country's burgeoning urban population.

Some 1,300 wells of the GMR are linked by 4,000 km of pipes to five reservoirs, which provide major coastal cities with 6.5 million m^3 of fresh water daily. The water supplied through the GMR is 10 times cheaper than desalinated water. Experts differ on the depletion rate of this finite resource and, although government authorities state the supply could last 1,000 years, independent analyses indicate that the aquifer could be depleted within 60 to 100 years. A great deal will also depend on water demands by other countries overlying the Nubian aquifers: Chad, Egypt and Sudan. A 1992 agreement to establish a regional body to manage this shared resource has remained virtually dormant. Aquifers that feed into the GMR include the Murzuk Basin system, straddling the borders of Libya, Tunisia and Algeria, and the Kufra groundwater basin. Algeria and Tunisia also draw extensive water supplies from the North-West Sahara Aquifer System.

Phase One of the GMR project began in 1984 and aimed to transport 2 million m^3 of water daily over the 1,600 km from the wellfields to Benghazi and Sirte. The second phase brought a 1,227 km pipeline from the north-west Sahara Basin in western Libya to Tripoli, carrying 2.5 million m^3 of water daily. Phase Three extended the initial pipeline deeper into the desert, adding another 1.68 million m^3. The next two phases will extend the network to Tobruk and link the eastern and western systems at Sirte.

Though agriculture uses 80 per cent of Libya's water and between 65 and 70 per cent of the GMR's water supply is essential to the country's food security, oil wealth would make it possible to substitute imported food more easily than in other Northern African countries. Potable water for urban areas, however, is an entirely different matter and municipal consumption is expected to increase by 10 per cent every five years up to 2025.

Delays in construction have been caused by the Libyan conflict, which affected the operation of pumping stations, the destruction of infrastructure and by NATO's bombing of the Brega pipe-building plants in July 2011. This led to serious disruptions to the water supply to urban areas, where recourse was made to emergency supplies of bottled water, and served to highlight the vital role of the GMR in maintaining urban life.



Source: MJS- based on data from The Economist, 11 March 2011

Source: Jaap Berk/Public Domain

Source: Civil-Military Fusion Centre, Libya's Great Man-Made River and the Supply of Water during Libya's Conflict, November 2011.

diplomacy, with the need for resolution heightened by climate change.[49]

The various Nile River basins are sensitive in different measure. In the Eastern Nile (Atbara and the Blue Nile) a 10 per cent reduction in rainfall results in a flow reduction of 31 per cent by the time the river reaches Khartoum, in Sudan. The Equatorial Nile, which flows from Lake Victoria at Jinja, Uganda, is far less vulnerable to climate change, and a 10 per cent decrease in rainfall results in only a 4 per cent flow reduction. The Bahr-el-Ghazal basin (White Nile at Malakal) in South Sudan is moderately sensitive, with a 10 per cent decrease in rainfall resulting in 11 per cent less flow.[50] It is estimated that a 20 per cent decline in rainfall would cause the flow of the Egyptian Nile to decrease by 63 per cent. Besides rainfall, the Nile is extremely sensitive to changes in temperature and it is estimated that a simultaneous rise of 2°C would reduce flow by 88 per cent in aggregate. The Eastern Nile remains the key to the Nile River's waters under any scenario. The availability of water would be especially compromised should upstream riparian countries begin major extraction. Given the riparian countries' demographic, industrial, agricultural and urban developments, increased upstream water extractions will be inevitable (the political economy of the Nile River is dealt with more extensively in the chapter on Eastern Africa).[51]

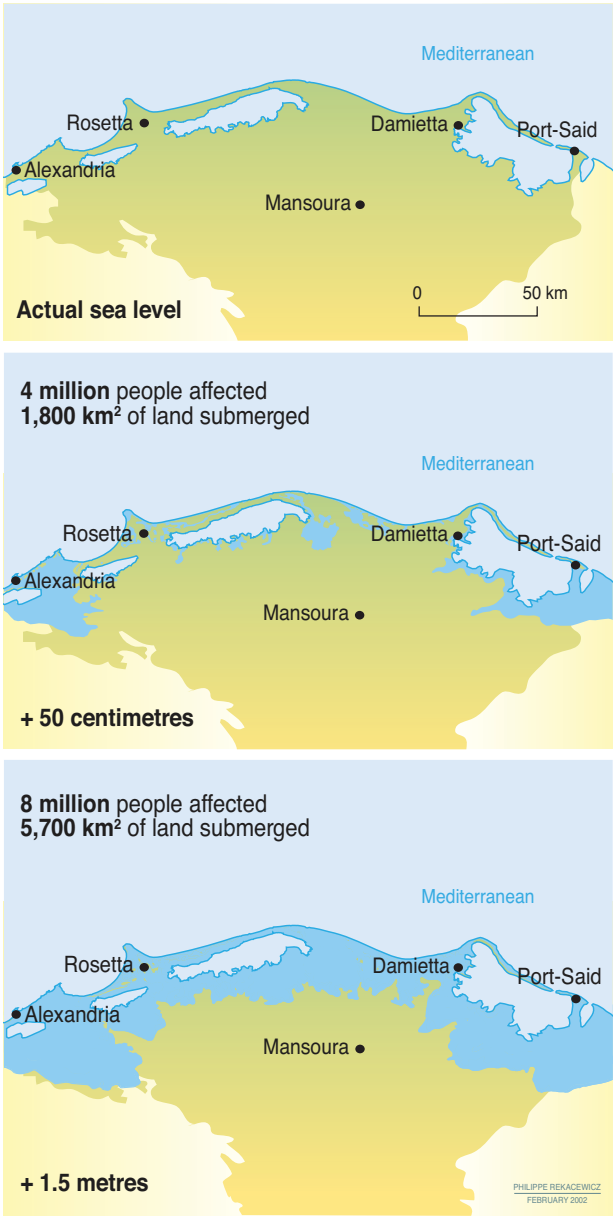
The treatment and reuse of wastewater is already common in Egypt, Morocco and Tunisia, while desalinated water is commonly used in Egypt and Libya. Most Northern African countries have also devoted a substantial part of their public sector investment to construction and maintenance of water infrastructures.[52] Algeria's short-term water management plans focus on desalination; improving efficiency of use; reducing water losses; and reusing water for irrigation. Over the longer term, it intends to develop new reservoirs and transfer water from the High Plateaux. Tunisia's strategy includes increasing wastewater reuse to 50 per cent for irrigation; increasing agricultural efficiency; and, reducing agricultural water allocations by 1.3 per cent a year. Morocco's 2008 Green Plan was based on making agriculture the country's main economic engine, by increasing private investment in high-value agriculture for 400,000 farms, and providing public support to 600,000 to 800,000 smallholder farms, to increase productivity and reduce water demands.[53]

Coastal Cities and Climate Change

There are indications that Northern African coastal cities will become increasingly prone to disasters associated with variable and extreme weather patterns. Rapid urban growth and the consequential geographic concentrations of population, physical assets and economic activity add to vulnerability, risk and likelihood of losses due to extreme weather patterns.[54] Extreme weather events in past decades have alerted authorities to these dangers. The governments of Algeria, Egypt, and Morocco have responded by framing plans to provide institutional and physical protection for the inhabitants of their coastal settlements. It is evident that they will need to continue monitoring climate change with a view to mitigating the impacts as far as deemed possible and affordable (see Box 2.3). Nevertheless, it is far easier to make plans than to implement them, especially during periods marked by acute political disturbance.[55]

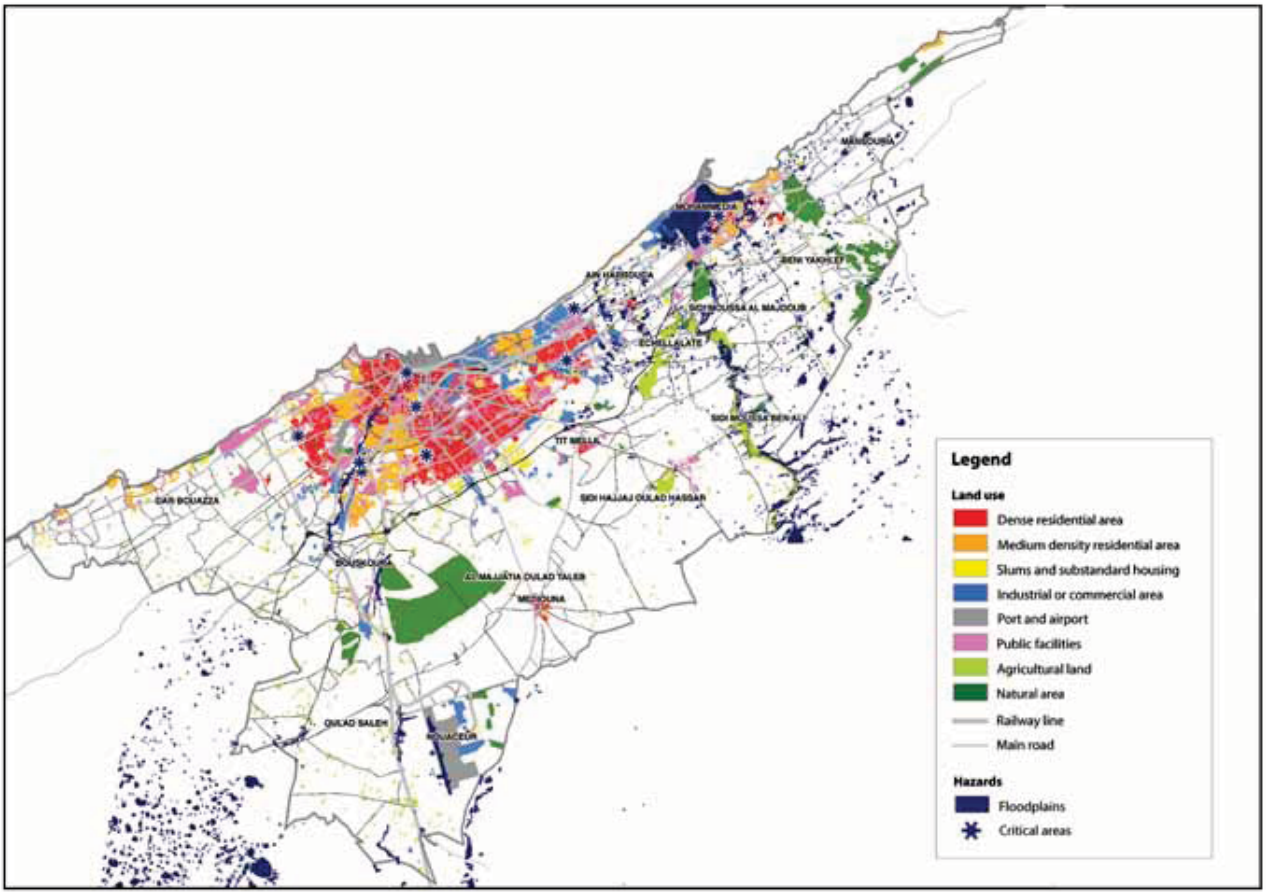
Alexandria's immediate hinterland consists of low-lying areas, lakes and wetlands. Much of it is below sea level; subject to flooding; and controlled by pumping stations. By 2030 it is anticipated that Alexandria's population will have increased by 65 per cent to 6.8 million. The city's expansion will occur mainly to the west and south, with poorer communities

MAP 2.2: **EFFECTS OF SEA LEVEL RISE ON THE NILE RIVER DELTA**



Sources: The Sea elevation model has been calculated by Otto Simonett (UNEP/GRID, Arendal and Nairobi) at the beginning of the 1990s. See also http://blog.mondediplo.net/2008-01-22-Le-delta-du-Nil-menace-par-les-eaux

MAP 2.3: **FLOOD PRONE AREAS IN GREATER CASABLANCA**



Source: World Bank / Center for Mediterranean Integration, Egis BCEOM/IAU/BRGM.

settling along the shores or in low-lying areas, exposing more people to flooding. The recent construction of a broad coastal highway, as well as marinas along the Mediterranean coast, have exacerbated coastal erosion, further exposing the city to damage from extreme weather events.[56]

From Alexandria to Port Said the Nile River Delta has a smooth wide coast of 240 km with several fishing and commercial harbours. Substantial areas of the Nile Delta lie below sea level, where they are partially sheltered by sand dunes or human-made constructions. Any rise in sea levels would threaten large areas of the Delta with flooding and intrusion of salt water (see Map 2.2), which would have serious human and economic consequences.[57]

The Egyptian government is aware of climatic and seismic risks to its cities and has instituted administrative reforms including the creation of multi-ministerial teams up to Cabinet level. It seems, nevertheless, that this disaster response command and control structure places too little emphasis on communication, early warning and local capacity for response.[58] The cumulative potential damage from natural disasters and the impact of climate change in Alexandria for the period 2010-2030 is estimated to be USD 1.7 billion at current values. Careful urban planning can reduce the impact of disasters, and Alexandria is preparing a 2030 Greater Alexandria Master Plan in response.[59]

Greater Casablanca's population is expected to grow to 5.1 million by 2030, with the urban area expanding annually by up to 1,000 hectares. Much of this new development will occur in areas vulnerable to sea storms and flooding, especially densely populated informal communities in areas protected for water catchment (see Map 2.3). In recent years, Casablanca has experienced higher temperatures and a drier climate. By 2030, average temperatures could rise by 1.3 C and even though average rainfall continues to decline more frequent heavy downpours may overwhelm drainage systems already under stress. Following heavy rains and flooding during 2009 and 2010, the Moroccan government responded with major improvements to disaster preparedness and early warning, incorporating environmental considerations in the 2030 Master Plan.[60]

The population of Tunis is growing more slowly than many others in Northern Africa and will probably total just over 1 million by 2025 (see Table 2.2). A projected 25 per cent increase in extreme weather events by 2030 will raise

BOX 2.3: **THE BOUREGREG VALLEY DEVELOPMENT – PLANNING TO MITIGATE CLIMATE RISK**

Morocco's Bouregreg Valley initiative has been hailed as an example of planning to mitigate climate risk before infrastructure is built or buildings erected. Various development plans mooted over the past 50 years had ended in failure, but in 2001 King Mohammed VI gathered a multidisciplinary team to draft a plan for the river's steeply banked estuary, from the Sidi Moulay Ben Abdallah Dam to the Atlantic Ocean. Bouregreg Estuary lies between the coastal agglomerations of Rabat and Salé, in an area vulnerable to flooding, marine submersion and landslides, but climate-resistant land-use policies and building designs should help to mitigate these.

The project is one of the largest to be attempted in Northern Africa, and aims to cater for 140,000 new inhabitants and create 90,000 new jobs. Physical construction began in 2006: the river was dredged; marshland and riverbanks rehabilitated; historic city ramparts restored; and new roads and rail links established between the twin cities. Trade and tourism will be boosted by the construction of the new port and yachting marina.

Not all has gone smoothly, however. The inadequate compensation after the expropriation of private property across more than half of the project's area met with resistance and protests in Salé in 2008. There are also many who fear that upmarket modernization will lead to adverse changes for poorer local communities, whose people may not be able to afford access to the tourist enclave.

Source: Agence pour l'Aménagement de la Vallée du Bouregreg (AAVB).

With a dedicated land area of 47 000 m^2 and a gross floor area of 27 000 m^2, the Rabat Grand Theatre will be an landmark cultural venue.
Source: Agence pour l'Aménagement de la Vallée du Bouregreg (AAVB).

flood risk in the city from "high" to "very high". Inadequate drainage systems and urbanization, in areas vulnerable to flooding, will add to run-off problems, and climate sensitive planning will need to take this into account. The cumulative potential natural disaster damage in Tunis for the period 2010-2030 is estimated to be USD 1.05 billion at 2011 dollar values, of which roughly 25 per cent might be attributed directly to climate change. Some 60 per cent of the estimated total is from submersion, 14 per cent from storm damage and 26 per cent from seismicity.[61] As a city vulnerable to tectonic shifts and subsidence as well as climate change,[62] Tunis has formulated new disaster response plans and improved infrastructure. However, Tunisia is on the whole less well prepared than Algeria, Egypt or Morocco, having failed to make adequate institutional or operational changes in the aftermath of previous disasters. In addition, much of the necessary cartographic data required for informed policymaking are lacking.[63]

Until now, Tunisia has probably given too little attention to the alarming vulnerability of its coastal settlements and the diversion of resources to the interior to deal with structural problems of gross inequality between regions. Coastal erosion is already a serious threat to the shoreline of the Gulf of Tunis and, by 2030, almost 30 km of urbanized seafront could be jeopardized by erosion and submersion, especially as sea-level rises damage protective barriers.[64]

Sudan represents something of an outlier as it forms part of a weather system entirely different to the *Maghreb* or *Mashreq*. It is difficult to gauge the relative impact of climate change upon population movements in Sudan, given the continuing conflicts.[65] The expansion of Khartoum by 250 times in area and 114 times in population during the past century owes much to the combined effects of drought, civil war, and the displacement of people by mechanized agricultural schemes.[66]

It is evident that climate change has already played a major part in the movement of populations in Sudan, besides its significance in aggravating conflict over resources. Nyala lies in the western state of Southern Darfur, an area that has experienced intense drought. The international public first became aware of Darfur because of the famine of 1984-1985, which resulted in some 100,000 deaths and the scattering of nomadic populations in search of water. Rainfall across this state has dropped by between 16 and 30 per cent in the last 40 years, a period that coincides with the warming of the Indian Ocean. Between 1920 and 1984, rainfall in Nyala declined by an average of 3 mm per year.[67] Desertification represents a major worry for Sudan's rural economy and food production. The region of desert and semi-desert has moved southwards by between 50 and 200 km since 1930. This trend is expected to continue, threatening 25 per cent of Sudan's agricultural land and reducing food production by 20 per cent - a development exacerbated by demographic pressure and the depletion of poor soils.[68] In terms of the 1959 Agreement, Sudan is entitled to use 22 per cent of the Nile's waters but the country has long since passed from water scarcity to water stress.[69]

Energy

The fortune and future shape of the energy sector, which is important to Egypt but vital to Algerian and Libyan economies, will be determined largely by international market trends with respect to oil prices, apart from shifting demand towards renewable energy. While the hydrocarbon sector anticipates a gradual shift from oil to natural gas, Northern Africa is beginning to realize its vast potentials of solar and wind power generation. An abundant supply of solar energy exists and the potential for embracing solar technologies is high, although expensive to install. Solar water heater geysers, for example, can make a significant contribution to energy efficiency and there is good overall potential for wind and solar renewable energy production for some Northern African countries[70] in the *Maghreb* (see Table 2.5).

Northern Africa's potential for the production of renewable energy is being included in ambitious plans, including the export of power. The World Bank's Concentrated Solar Scale-up Programme (CSP) includes plans for 20 GW of solar generation around the Mediterranean by 2020, most of it in Northern Africa. This will require a greater degree of cooperation between countries in which cross-border economic ties have remained underdeveloped.[71] Much of this CSP power, however, will be too expensive for local consumers and will be exported to Europe.[72]

Egypt's energy strategy is decided by central government, which has invested in a number of "green initiatives" including exchange of data between southern and eastern Mediterranean countries. As a beneficiary of the Clean Technology Fund,[73] Egypt announced a USD 350-million investment plan in April 2011. This included renewable energy projects, which it hopes will meet 20 per cent of its energy needs by 2020. Of this new capacity, some 7,200 MW will be supplied by wind turbines.

TABLE 2.5: **POTENTIAL FOR WIND AND SOLAR ENERGY PRODUCTION IN MAGHREB COUNTRIES**

	Power Potential (GW)			
Energy Source	**Algeria**	**Libya**	**Morocco**	**Tunisia**
Wind	20	8	9	4
Solar	62,600	51,700	7,800	3,900

Source: Booz Allen Report 2009; adapted from Table 40 in State of Arab Cities 2012

2.4
Urban Planning and Resource Management

As part of its promise to build 1.2 million new homes by 2014, Algeria is partnering with international consortiums to speed up the process and improve quality. **©Magharebia.**
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Urban governance in Northern Africa faces a wide variety of challenges. The sub-region's cities are chronically vulnerable to food and water insecurity as well as to global price fluctuations, especially for food and energy. Northern Africa's countries are characterized by high levels of urbanization; large youth bulges; high incidence of poverty, inequality and unemployment; and (with the exception of Sudan) coastal settlement. Overcentralized and bureaucratized administrative systems reinforce the importance of political patronage as opposed to efficient governance, contributing to weak public service provision and management in urban areas. Selective urban policies, despite attracting foreign investment, have favoured established and politically connected businesses. The construction of gated enclaves and western-style malls for the affluent have led to displacement and fragmentation of some urban communities and their cultures, entrenching inequality in living standards and opportunities.

Weak governance impedes development through, *inter alia*, failure to identify the needs of the citizenry or to deliver the public goods and services required, especially to the poor and vulnerable.[74] In Northern Africa's cities, a confusing mixture of religious and colonial laws and influences has prevailed in respect of urban land tenure and property rights. Overlapping and contradictory regulations offer opportunities to overstaffed state bureaucracies to extract personal income by exercising discretion over the implementation, or evasion, of regulations. Generally, accessing property is a tedious and difficult process that necessitates engaging with corrupt and procedure-heavy bureaucracies and paying multiple fees. High land values in the sub-region have stimulated land speculation. Ostensibly, authorities have taken measures to prevent speculation and land price instability, but lagging property registration rates and high levels of informality have prevented municipalities and central governments from drawing on land and property transaction-related revenues

TABLE 2.6: **RANKING SERVICES AND GOVERNANCE IN NORTHERN AFRICAN CITIES**

	State of City Services and Management (Selected Cities)				
Services and Governance	**Well Below Average**	**Below Average**	**Average**	**Above Average**	**Well Above Average**
Air Quality			Alexandria Cairo	Casablanca Tunis	
Energy & CO_2		Tunis	Alexandria Cairo	Casablanca	
Environmental Governance			Alexandria Cairo Casablanca Tunis		
Land Use		Alexandria	Cairo Tunis	Casablanca	
Sanitation			Alexandria Cairo	Casablanca Tunis	
Transport			Alexandria Casablanca	Cairo Tunis	
Waste		Cairo	Casablanca	Tunis	Alexandria
Water		Alexandria	Cairo Tunis	Casablanca	
Overall			Alexandria Cairo		

Source: African Green Cities Index (AGCI 2012, 9)

TABLE 2.7: **PERCENTAGE ACCESS TO SERVICES FOR SELECTED CITIES IN NORTHERN AFRICA**

Country	**City**	**Year**	**Piped Water**	**Sewerage**	**Telephone**	**Mobile**	**Access to Electricity**
Egypt	Alexandria	1995	94.2	61.0	--	--	99.8
	Alexandria	2008	99.4	99.9	61.4	61.9	99.8
	Cairo	1995	94.8	56.0	--	--	99.0
	Cairo	2008	99.5	99.9	61.7	52.8	98.9
Morocco	Marrakech	1992	84.0	87.8	--	--	90.4
	Marrakech	2004	88.8	99.7	17.7	--	96.3
	Rabat	1992	86	91.7			83.9
	Rabat	2004	89.7	99.7	69.7		99.0
Sudan*	Khartoum	2007		28.0			

Sources: UN-Habitat (2012) Global Urban Indicators; Table 12;
**HPG Khartoum (2011)*

and taxes. This, in turn, reduces the means available for the upgrading of public services. Accurately compiled and updated data on housing settlements are deficient in the absence of formal systems, hence efficient municipal tax collection is virtually impossible. The implication is that municipal revenues may be inadequate, poorly collected and managed, despite urban land prices having doubled in existing urban areas every three years since 1970, and having doubled every year in new urban areas. The prohibitive land prices constrain access by the poor to formal land ownership, relegating them to informal modes of land acquisition.[75]

There is a worrying lack of collated data on access to services in the sub-region's cities, as well as at the national scales. Although limited, there has fortunately been some analysis of a selection of cities in the sub-region, mainly in the *Maghreb* (Tables 2.7 and 2.8).[76]

In the resource-scarce and weather-uncertain future facing Northern Africa, decentralized governance, technologies and municipal services are necessary for improved functional capacity of municipalities at local scales. The scale and nature of urbanization that has unfolded in Northern Africa (for instance, high levels of sprawl, slums and informal settlements) suggests the unsuitability of highly centralized systems, except in specific cases where centralized systems are mediated with semi-decentralized and decentralized systems. Decentralized revenue collection (i.e. fiscal decentralization to municipalities and city governments) can enable municipalities to generate their own revenue, thereby enabling them to determine their own development trajectories at the local level.

Slums and Informal Development

Rural-urban population movement abated after the 1980s to be replaced by movement between cities and an exodus to intermediate cities. These trends were accompanied by unplanned settlement that led to the expansion of slums and informal settlements.[77] Public policies were developed over this period to target slum reduction and were pursued through public-private partnerships. Egypt's "Orascom Housing Communities", Morocco's "Cities without Slums", and Tunisia's "*Société Nationale Immobiliére Tunisienne*" (SNIT) and "*Agence de Réhabilitation et de Rénovation Urbaine*" (ARRU) programmes are some examples from the sub-region, enabled by large government subsidies.[78]

Morocco's programme has contributed to a 65 per cent decrease in slum populations measured between 1990 and 2010, employing consultative, participatory processes with slum communities as a key element of the project methodology. Egypt established a similar entity dedicated to the upgrading of informal settlements that essentially acts as a strategic intermediary which performs knowledge management; project scoping and scheduling; technical aid; and partnership building while giving priority to land-based finance as a means of generating revenue. Tunisia's SNIT and ARRU programmes focus on formalizing housing and land ownership.

SNIT and ARRU, working together in heavily subsidized public private partnerships, constitute a nexus between communities; private sector entrepreneurial spirit; and the leadership, administrative and technical aid of state institutions. However, it is to be expected that the difficulties and vagaries of community participation and state bureaucracy slow processes to some extent. So despite the high levels of progress that have been made, housing delivery still lags behind targets, and the capacity of public-private partnerships to deliver housing on a large scale on a yearly basis still does not exist. It is thus perhaps prudent to focus on building capacity to improve roll-out of housing and land formalization, construction and service provision, and on streamlining the multiple processes with which communities and developers must engage in order to expedite project timelines.

Housing and land ownership are in high demand in Northern Africa, because property prices and land values are notably high. Complex, bureaucratic systems of governance and high land values combine to make formal land ownership difficult for the urban poor. Hence, informal land markets have burgeoned in the sub-region's cities. Strategic intermediaries have been created between government, public and civil society sectors to speed up land and housing ownership formalization and housing delivery. Northern African cities have responded to these pressures with cross-subsidization, cooperation between public and parastatal organizations, and private sector developers, leveraging public funds for the development of mixed-income housing. Moreover, countries such as Egypt, Morocco and Tunisia have put in place programmes to formalize informal land settlement and eradicate the slum living conditions of the urban poor and there appear to be downward trends in at least some countries in the sub-region (Table 2.8).

Despite Northern African governments' claims that social housing projects have significantly reduced the proportion of slum settlements in the sub-region, inequality persists and informality is still pervasive. In part, this reflects a general weakness in formal (and informal) institutions and a need for systems for land management and housing acquisition unencumbered by bureaucracy, nepotism and inefficiency.

There are some reasons to question the accepted orthodoxy about successful slum clearance, noting that this term covers a multitude of practices, some involving gross violations of human rights.[79] Claims that the numbers of slum dwellers in Northern African cities had been reduced by some 43 per cent between 1990 and 2010, with particular success noted in Egypt, Morocco and Tunisia, are accompanied by an acknowledgement of the difficulty of agreeing on a common definition of "slums".[80] UN-Habitat defines a slum household as being in an urban area and lacking one or more of the following: durable housing of a permanent nature that protects against extreme climate conditions; sufficient living space – no more than three people sharing a room; easy and affordable access to sufficient amounts of safe water; access to adequate sanitation in the form of a private or public toilet shared by a reasonable number of people; and, security of tenure that prevents forced evictions.[81] The complex wording of this definition demonstrates the difficulty of arriving at a commonly agreed norm, however, slum reduction or "clearance" in practice often fails to provide security against forced evictions. It is, however, important to distinguish between older dilapidated urban areas and informal settlements, both of which may be regarded as subcategories of slums requiring different treatment, especially when it

TABLE 2.8: **PERCENTAGE OF URBAN POPULATION LIVING IN SLUMS**

	1990	1995	2000	2005	2007
Northern Africa	**34.4**	**28.3**	**20.3**	**13.4**	**13.4**
Egypt	50.2	39.2	28.1	17.1	17.1
Morocco	37.4	35.2	42.2	13.1	13.1
Sudan	--	--	--	94.2	--

Source: Global Urban Indicators (GUI) 2009, Table 7

A slum in Casablanca, Morocco. **©Magharebia.** Licensed under the Creative Commons Attribution 2.0 Generic license.

comes to the provision of public utilities.[82]

Unsurprisingly, reliable comparative city-level data on slums and informal settlements is difficult to obtain for the sub-region. Official data is also likely either to under-represent an embarrassing problem, or to exaggerate the administrative success in dealing with it. Region-wide restrictions on the operations of national and especially international non-governmental organizations prevent critical analysis of official statistics. Cairo and Alexandria still have large urban slums and absolute numbers of slum dwellers. The greater Cairo region hosts around 17 million inhabitants, a large proportion of whom are slum dwellers and whose informal dwellings cover half the area of the city. The resettlement of poor urban slum dwellers to the peripheries of the city, where "new towns" will be built on state-owned land is central to Cairo's official strategy to reduce its slum levels. However, the private sector does not adequately cater to the low-income market. Private sector housing developments in and around Cairo are too expensive for the poor, and the new towns are too far from their places of work.[83]

Increasingly, the debate is moving towards accepting the permanence of informality, concentrating instead on ways in which the marginalized can be involved in decisions affecting their lives, and seeking to provide services to all urban dwellers regardless of socioeconomic status. Some new actors emerging in Egyptian civil society intend to revolutionize urbanism. Improving living standards in urban areas, especially for the many Greater Cairenes living in informal settlements, was one of the core demands of the protestors, yet urban issues were never seriously tackled during Egypt's legislative and presidential election campaigns of 2012. Certainly, broad promises were made by President Mohamed Morsi in the Muslim Brotherhood's manifesto: traffic reduction; the construction of a million social housing units; and municipal elections. Yet, by mid 2013 no progress had been noted towards any of these objectives. There is also the question of how the new social housing would be financed since it is unlikely to offer attractive profits to private investors.[84] The answer would seem to lie in accepting informality as the norm and finding ways to accommodate and build on that idea.[85]

Electricity

Urban Northern African households have high levels of access to electricity, with the exception of those in Sudan. The principal cities of Northern Africa are large consumers of electric power and have extensive grids. Most of this electricity is generated using natural gas.[86] High levels of access to electricity translates into high levels of consumption (Table 2.9) and per capita energy use in Northern Africa is the highest in Africa and set to double from 2006 to 2030.[87] Improving efficiency standards for energy infrastructures is hence a critical component of decreasing energy losses. Climate change and more variable temperatures will exacerbate uneven use patterns and high losses. Ensuring

TABLE 2.9: **ENERGY/POWER CONSUMPTION AND LOSSES IN NORTHERN AFRICAN COUNTRIES**

Country	Consumption Per Capita (kWh in 2009)	Transmission and Distribution Losses (Percentage of output in 2009)
Algeria	971	21
Egypt	1,549	11
Libya	4,170	14
Morocco	756	12
Sudan	114	28
Tunisia	1,311	13
Western Sahara	--	--

Source: WHO WDI 2012, pp. 324-326

TABLE 2.10: **ACCESS TO DRINKING WATER AND SANITATION**

Country	Improved Drinking Water Coverage Urban (TOTAL per cent)		Household Connection to Improved Drinking Water Urban (TOTAL per cent)		Improved Sanitation Coverage Urban (TOTAL per cent)	
Year	**1990**	**2008**	**1990**	**2008**	**1990**	**2008**
Algeria	100	85	87	80	99	98
Egypt	96	100	90	99	91	97
Libya	54	--	--	--	97	97
Morocco	94	98	74	88	81	83
Sudan	85	64	76	47	63	55
Tunisia	95	99	89	94	95	96
Western Sahara	-	-	-	-	-	-

Source: Global Urban Indicators (GUI), 2009: Table 11

urban energy efficiency, from buildings to the construction of infrastructures, is critical if urban energy footprints are to be reduced significantly. In addition, smart choices have to be made regarding how infrastructure choices impact on the behaviour of urban residents in particular.

Renewable energy sources provide roughly 12 per cent of Egypt's electricity production and almost all households in Cairo and Alexandria have access to electricity for at least a portion of the day. Energy saving remains a problem in Cairo, however, and in March 2011 the government decided that to meet surges in demand during summer, additional generators powered by natural gas, would be incorporated into the system.[88]

In Morocco's largest city, Casablanca, virtually all inhabitants have access to electricity, with services provided since 1997 by a private-sector consortium which also handles the city's water and sanitation services. Though electricity consumption remains relatively low, possibly because of high prices, the sector's ecological footprint is large, as coal is used for more than half the city's electricity consumption and renewable sources only account for 8 per cent.[89]

In Tunis, the electricity network now reaches 99 per cent of households. Demand is high, and most of the power is generated using natural gas, though solar production has been promoted by the government since 2005. The aim is to increase the proportion of energy produced from renewable energy resources from the current 0.5 per cent to 10 per cent by 2020.[90]

Water and Sanitation

Water scarcity is the greatest single physical problem facing Northern African development, yet throughout the sub-region water tariffs remain low, partly out of fear of public protest. Water utilities say this denies them the resources to maintain, or replace, aging supply networks. Leakages, which can lead to contamination, and illegal tapping of the system further aggravate water scarcity.[91]

Egypt's major cities rely heavily upon the River Nile for their water needs and new initiatives are aimed at protecting the Nile from industrial, agricultural and sanitary pollution. In Alexandria, for example, industry sometimes flouts anti-pollution regulations. Some 94 per cent of the city's population has access to sanitation, though wastewater treatment still remains a problem despite massive foreign funding. On-site monitoring of sanitation facilities in homes and communal areas also needs to be undertaken.[92] Virtually all of Cairo's inhabitants have access to potable water. Water quality is sometimes low and can result in disease among poorer residents unable to afford filtration systems or bottled water.

In Morroco, Casablanca's sewage management system has been improved by the Lydec consortium, though industrial pollutants remain a problem. Water consumption is relatively low, at 89 litres daily per person. Work is under way to reduce water loss from leakage (see also Chapter 6), and water quality standards have also been established. Almost all of the

city's population has access to sanitation services, which are governed by a monitored code.[93]

Data show relatively high levels of access to drinking water and sanitation amongst urban populations of the sub-region's countries (Table 2.10). Improvements have been registered between 1990 and 2008 in all urban populations of these countries with the exception of Algeria and Sudan. The latter exhibit more drastic drops in levels of service following years of war and conflict.[94]

Transport

Northern African cities consume high levels of energy in the provision of public and private transport and also suffer similarly from congestion and air pollution. Their overburdened road transport systems will not be eased by building new roads or by improving existing ones. A transition towards more reliable and cost-effective public transport systems is necessary. Ensuring access for the peri-urban poor to markets and opportunities in the city centres and overcoming segregation patterns within the city through improved access and mobility is imperative.

Some of the cities in the sub-region already place great emphasis on public transport systems. In Cairo, a taxi-recycling scheme scrapping vehicles older than 20 years will later be extended to public transport vehicles. Alexandria is also considering adopting this option.[95] The Egypt Urban Transport Infrastructure Development Plan and the Carbon Finance Vehicle Scrapping and Recycling Programmes are working with the World Bank and the Clean Technology Fund to provide 1,100 new fuel efficient buses for Cairo, promoting transport along the river and a bicycle scheme in Greater Cairo.[96] In Casablanca, Morocco, a 30-kilometre tramway has come into operation that will eventually transport 250,000 passengers daily. The Moroccan government also plans to connect Casablanca to Tangiers and Rabat with a high-speed train.[97] The residents of Tunis have access to "above average" transport services, and already have access to bus, light rail and suburban rail services.[98]

Mass public transport systems reduce dependence on oil and petroleum; reduce air pollution; encourage access and mobility; and increase social interactivity in cities. Cost and energy efficient public transport should thus constitute a key element of city-level sustainability strategies in the populous, sprawling and fragmented cities of Northern Africa, as in the rest of Africa's cities.

▲ Cairo's famous black and white taxis. **©Oleg Storozhenko.** Licensed under the Creative Commons Attribution 2.0 Generic license.

Waste Removal and Recycling

Urban solid waste management services have generally improved in the *Maghreb* countries, and are implemented by local governments in Algeria, Libya and Morocco. The key challenge is the disposal of waste in open dumps, as opposed to sanitary landfills. Algeria and Morocco dispose of 58 per cent and 95 per cent, respectively, of their waste in open dumps.

Cairo has introduced recycling and reuse policies, moving 15 million cubic metres of municipal waste to controlled dump sites and improving waste management in two poor areas in Greater Cairo. Alexandria surpasses most other large African cities in waste management and can be commended for its robust policies on recycling and reuse, as well as environmental standards for waste in the city. A public-private partnership for waste management is focused on integrated waste management, thereby reducing the government's role in monitoring.[99] Tunisia is the best performing country in waste management in the *Maghreb*. The national government agency is responsible for waste management and a great amount has been achieved. Tunis's landfill capacity has increased and new sanitary landfills have been built in nine cities. Algeria, Libya and Morocco also have plans to improve waste management in a number of their cities.[100]

It is clear that going beyond sanitary landfill disposal can open up new economic opportunities, through recycled materials and waste-to-energy generation. Northern African cities need to consider what opportunities can be leveraged from harnessing systemic waste flows. This might include how waste technologies - for example those that close material flow loops at local scales such as sewerage to biogas and fertilizer - can be put to the benefit of households and sectors such as agriculture, through returning nutrients to the soil (see also Box 1.9).

Aiming for a zero-waste, or at least a low-waste, profile requires considering new opportunities for the reuse of waste, and consideration of how decentralized technologies and systems can close waste loops at source, or as close to source as possible. To this end, understanding material flows of waste through improved monitoring and measuring systems is critical in the long-term, since better integrated waste management is primarily contingent on how well decisions are made, as well as on the quality and understanding of information upon which such decisions are based.

2.5
Urban Culture and Change Agents

Young people play music in the Parc de la Liberte in Algiers to celebrate the anniversary of the outbreak of the liberation war. **©Magharebia.** Licensed under the Creative Commons Attribution 2.0 Generic license.

If Northern Africa is to foster healthy urban democracies, its cities need to maintain space for social activism and political participation. The energy that was drawn politically into the "leaderless protests" that led to the initial uprisings in the sub-region and specifically into critical city locations that could accommodate large protests, must now seek more formal and programmatically structured avenues for expression in daily life to ensure the future stability of cities and regions. This must then set the foundations for political constituencies to form, and participate in, the new future of the sub-region. There must be no lapse into hastily conceived "electoral" democracies where institutions reproduce "more of the same" development; where technocrats dictate the nature of development; and, where no grassroots political constituency can grow. The opportunities for advocates of alternative policies, including those relating to urban development, will have to be seized if a relapse into the default mode of business as usual is to be avoided.

Urban strategic intermediaries, who can take action regarding urban development concerns in Northern Africa, include youth, political, environmental, women and non-governmental organizations; central and city governments; informal trader and homeless people associations; and religious organizations as well as charities. Many organizations already exist in cities in the sub-region and played a key role in the Arab Spring, so there is a foundation upon which to build a broader and more entrenched, active civil society within the cities of Northern Africa. The importance of building an aware and conscious political urban constituency in Northern Africa cannot be overemphasized. Ultimately, the sustainability of these urban societies is contingent on the decisions made in the present around how urban lifestyles will be constructed in future. What urban societies will consume, produce, waste, compete and how they will collaborate will largely be determined by how well the current transition unfolds and what ultimately results from the Arab Spring. Ensuring meaningful change is the object of revolution, yet this is often forgone in the practicalities and realities that

unfold in the desperate human circumstances accompanying extreme sociopolitical change. Ensuring a sustainable future for Northern Africa requires change in its urban centres and populations, as well as in national governments and institutions.

Culture and Identity: Urban Trends and Regional Change

Despite apparently successful slum eradication in the region, high levels of informality persist in trade, apprenticeship, service provision and settlement. The working urban poor, unemployed and youth have few avenues for improving their situation, regardless of whether they enjoy higher levels of literacy or possess tertiary qualifications. This suggests that developmental challenges are not simply a matter of economics. Widespread institutional corruption and patronage strangle state and private sector institutions and the average citizen (whether urban or not) is unable to access either without recourse to informal networks of influence. The resulting frustrations partially explain the youth-led call for accountable, democratic rule in many Northern African countries.

Radical improvements in the lives of the urban poor and political stability in much of Northern Africa and its cities remain distant. In Egypt, Libya and Tunisia, the political transition to democratic dispensations remains contested. It is not yet obvious what, or how, institutional changes will unfold over the next decade or two. What is clear is that without strong, cohesive institutional action, informed by effective grassroots participation, Northern African cities may well experience a reverse in some of the gains claimed in respect of slum eradication. The widespread and robust public action that emerged from the social fabric of Northern African cities is perhaps the most powerful force for change in the sub-region. It is critical that local and regional forums for public participation in local development are engaged or established to build upon the existing social capacity that has emerged. They must be involved in structured engagements about development and the right of urban citizens to participate in all aspects of life and development in the city.

The Youth: A Force for Change

The youth bulge in Northern Africa and the Middle East contributed overwhelmingly to the Arab Spring. It follows, therefore, that the youth are a critical asset in the transition to a new future for the sub-region.[101] They have broken with the past by becoming a large and potentially overwhelming force for social change; can organize at local levels; and have experience and knowledge of how to take political and social action. Still, should the youth remain excluded from the processes of power that are shaping the future, fragmentation may result. This may either be group fragmentation (ethnic, religious, clan), or individual fragmentation (individualism and retreat into the private realm). Any failure to realize opportunities to create a new future, with the youth as a spearhead, will render the future poorer and less capable of finding the solutions to sustain urban populations in Northern Africa. Youth equality and inclusion will depend on promoting effective education; providing quality services; creating employment and income-generating opportunities; improving the ability of the youth to access resources; as well as building community and higher level forums for youth participation in local, state and national governance.[102]

The political and social upheavals of the last two years have left an indelible impact upon the aspirations of Northern Africa's educated urban youth. The effective use of Internet and mobile phone technologies has integrated youth social networks regionally and globally in novel ways, still pregnant with possibilities. Significant changes in how youth identity is constructed may have been the "invisible" social force behind the widespread resistance to the suppression of free expression by prevailing states and governments. It seems likely that a shift is occurring towards a more plural construction of identity in Northern Africa. There is also resistance in the cities to the formal traditional Arabic of Saudi Arabia and the Middle East in favour of a local Arabic vernacular, which is viewed as "less sterile" and more expressive. Whether in Algiers, Egypt, Libya, Sudan or Tunisia, in cities such as Cairo, Casablanca or Khartoum, there has been significant youth mobilization around rights-based movements, creativity, art and expression.

The popular evolution of urban youth culture is also interesting. In Egypt, the Internet-based April 6th Youth[103] were a key sociopolitical force in energizing local political protest and action and catalysing the momentum of the Egyptian revolution. They were originally constituted in support of the 2008 textile workers' strikes in the Delta city of Mahalla el Kobra, setting up communication platforms and Internet fora to support workers. Youth movements for artistic, social and political expression have also emerged in Morocco and Tunisia, to capture spaces within the cities. In Casablanca, old industrial warehouses have been converted into artist workshops and spaces for exhibition.

Musical styles, especially previously suppressed western musical genres such as rap and rock, have emerged as key popular and political avenues for expression, with many musicians playing a key role in rallying and inspiring protests during the revolution. The energy of these revolutions is now being transferred into other activities in Northern African cities, resulting in a proliferation of music and art, and city governments with the vision to capitalize on this will likely develop robust creative cultures and economies. Casablanca hosts the third largest annual hip-hop concert in the world called *Casanayda*, drawing more than 100,000 youth from Northern Africa and the Middle East. Northern African and Middle Eastern youth have the opportunity to engage with global popular culture, disregarding the notion that this might be polluted by western cultural norms and engaging with these norms on their own terms; appropriating and remaking them for their own cultural purposes.

Youth mobilization has great social power because of sheer numbers and because they are still strongly connected with

▲
International Women's Day in Egypt, 2011. **©Al Jazeera English.** Licensed under the Creative Commons Attribution-Share Alike 2.0 Generic license.

family networks, from which they draw support for the democratic freedoms they seek. The youth are driving new social initiatives. For example, Sudanese youth have initiated partnership-building with their South Sudan counterparts, using music, art and creative expression to build cooperation and reduce the potential for future conflict.

Gender: Women in Post-Arab Spring Society

Women in Northern Africa continue to face many challenges to their participation in the political realm as well as in the private and public sectors. This is despite the improved education of women in Egypt and Morocco, and nearly reached, or exceeded, gender parity in Tunisia and Libya.

Women played a key role in the Arab Spring uprisings, yet were subjected to systematic rape in conflict zones such as the Libyan cities of Benghazi and Tripoli and to beatings and virginity tests in Cairo's Tahrir Square. Even though women played a full part in the Egyptian revolution, in post-revolutionary Egypt women obtained only nine of five hundred seats in the Egyptian parliament, losing more than 50 seats in the new legislature. In the Egyptian election, pictures of women candidates for the Hizb al Nour party were not shown on ballots, but were replaced either by a flower or by a picture of the candidate's husband.[104]

In post-revolutionary dispensations there is a risk of hibernation of women's rights agendas in countries such as Libya, Egypt, Tunisia and Algeria.[105] The general empowerment of women within the cities of Northern Africa is likely to spur broader change in the sub-region since cities offer them the most diverse opportunities for inclusion and participation in social, economic and political roles. Although education is a clear enabler of women's emancipation in society, overcoming the traditional gender bias that is normative in urban and rural societies is the most critical challenge to gender equality. Developing new gender norms and standards within urban society should not be top-down directed exercises but should result from bottom-up processes of participation and inclusion. These processes must initiate changes that target the core challenges that women face in Northern African urban societies. Diverse participatory forums are necessary to enable the involvement of women (and the youth) in all realms of urban society, whether through donor-funded or state-funded efforts, ideally both. Without spaces where a greater number of voices can be heard, inclusion can become meaningless and dispersed. For instance, bottom-up change remains unaddressed where there is a small group of very senior women being recycled between top posts. These organizations may ultimately open up avenues to challenge laws, change policies and improve gender representation in all avenues of life in Northern Africa.

2.6
Emerging Issues

The River Nile, Cairo. The Nile provides 85% of Egypt's water supply and is the main source for several countries along its course. **©Bzzuspajk/Shutterstock.**

Thirsty and Hungry Cities?

In water-scarce Northern Africa, access to the element is commonly viewed as a human right and scarcity increases contestation over this right. Sub-regional water supply restrictions are likely to intensify in the 21st century. Resolving existing and potential tensions requires sub-regional cooperation around water resources, as well as actions to improve water use efficiency, recycling and reuse at city, neighbourhood and household levels. Even in Egypt, where precipitation is likely to increase, runoff is set to decrease due to higher average ambient temperatures. Rapidly increasing urban populations in Northern Africa will intensify these climate change effects. As urban areas expand and populations grow, so too does urban water demand. As cities sprawl, losses from water distribution infrastructures are also likely to increase, as will the cost of delivering water over larger distances. In Northern Africa, where there is water there are people, whether in cities or rural areas. For example, agricultural land is restricted to areas where water is accessible; whether through dams such as the High Aswan, or through rivers such as the Nile on whose banks are many cities.

Potable water is a key issue for Egypt, as the Nile is heavily polluted by upstream agricultural and industrial activities. In addition, Egypt is dependent on the Nile for 85 per cent of its water supply, so managing transboundary water-sharing agreements with Ethiopia and other upstream riparian nations is critical to its long-term survival. Ethiopia has embarked upon a number of hydropower and dam-construction projects in its highlands, in order to boost development, but this has raised the ire of Egyptian authorities. Ethiopia seeks to develop 10,000 MW of hydropower from the Nile in order to modernize villages and cities, reducing the Ethiopian power deficit by up to 30 per cent. On the whole, Egypt is still using water at unsustainable levels and *Maghreb* countries in general have already used a large portion of their aquifer reserves.

The following summarizes results of a water and sanitation assessment in four Northern African Cities:[106]

- *Alexandria* is heavily reliant on the Nile for freshwater supply. Industrial pollution is not well regulated while 36 per cent of Alexandria's water is lost through systemic leakages. The city's sanitation scored an "average" rating, because of a lack of regulation of decentralized sanitation facilities in "homes and communal areas" and room for improvement in wastewater management.
- *Cairo's* water system has a leakage level of 35 per cent, and water quality levels are low, thus ranks "average" in water management. Widespread access to sanitation (98 per cent) exists in Cairo, yet the standards of service are unevenly distributed citywide.
- *Casablanca* scored "above average" on water and sanitation

services. A private sector-run water system provides access for the city and consumption levels are low. Some 28 per cent of its water is lost to leakage. Policy on efficiency is emphasized by city authorities and water quality standards are relatively high. Access to sanitation is very high, at 99 per cent, and a sanitation code has been put in place. However, the drainage capacity of the city's water system is questionable, and pollution from industrial sources into marine and coastal systems is cause for concern.

- *Tunis*' water services scored "average" and sanitation services scored "above average". Leakages are around 28 per cent, while access to sanitation across the city is at 95 per cent.

Because of Northern Africa's high urbanization levels, especially along the coast, increasing volumes of water need to be delivered. Northern African countries are faced with regional water scarcity challenges, over which conflict and contestation is commonplace. Regional agreements over the use of aquifers, underground and above-ground rivers are critical to ensuring peace in the sub-region, as clearly evidenced in the case of the Nile, whose water resources sustain the lives and livelihoods of a wide range of countries along its course. Providing universal sanitation coverage in Northern African cities faces the same challenge: that of meeting the increased and concentrated demand that accompanies high levels of urbanization. Infrastructure efficiency and maintenance standards for potable water provision as well as sanitation require more attention from national and city governments in the sub-region.

Local water security is increasingly likely to depend on regional cooperation, as shared water sources are the key to the sub-region's future water security. Catchment management and shared aquifer resources should be key foci at the national scale, while programmes for mitigating the effects of climate change on the sub-region's water supply at household, city, city-region, national and sub-regional scales are essential. Water-scarce Libya requires supply and sanitation gap analyses and needs assessments for transboundary aquifer management.[107] More research, monitoring and measuring is required so that the implications of transboundary water systems can be better understood. Regional water sharing agreements should include incentives for sustainable water use (guaranteeing ecological flows, water quality, and supply to meet future demand), especially in countries where unsustainable water use patterns prevail.

Although water and sanitation coverage in the Greater Cairo area is relatively high, the city's water delivery and management systems remain inadequate, requiring significant upgrading and maintenance. Should there be a failure in taking appropriate policy measures, and if underfunding continues, the Greater Cairo city's water infrastructure is at great risk of further deterioration over the next two decades. Efficiency measures alone will be insufficient to finance the systems given the low user charge rates in the sub-region. The user charges could potentially be raised to cover the operations of the system without necessarily affecting the ability of the urban poor to access water.[108]

Given continued unrest in the sub-region, it is likely that increasing pressures upon household budgets will result in more instability. Social stability, food security and economic growth are all dependent upon water, and viewing it as merely a direct transaction between provider and user does not fully appreciate the multiple dimensions in which water ensures productivity and stability. Amid debates over whether private or state-led water security is more appropriate, perhaps the key question over water and other resources should focus on what promotes social stability in Northern African cities. The sub-region's sensitivity to global fluctuations in oil and food prices contributes to heightened household vulnerability, as well as to unforeseen and drastic increases in costs of basic staples and transport. Increased utility costs, especially water, are likely to increase socioeconomic and political instability.

Wheat price fluctuations were in part responsible for the high levels of public dissent in Algeria, where urban households were hard hit by price increases. In 2008, the international price of wheat more than doubled between January and May.[109] The prices of cooking fuel also increased over this period, effectively impacting food and cooking with double and triple-squeeze effects.

Key vulnerabilities contributing to food insecurity include the focus of agricultural production on export produce; high dependence on imported food supply and global food chains; and the effects of climate change in the sub-region, especially as concerns water supply. Focusing agricultural production on export produce, instead of on local markets, while increasing the profitability of the agricultural sector, negates its fundamental role in providing food security in the sub-region. The liberalization of agricultural sectors in the *Maghreb*, coupled with intensified and expanded cultivation and irrigation, has contributed to the food crisis in Egypt, Morocco and Tunisia.[110] Indeed, where high levels of water use can be attributed to agriculture, it is questionable whether agriculture conducted solely for profitability warrants such high water allocation in a water scarce region, if it does not guarantee any buffer against global food price fluctuations at local levels.

Urban Unemployment

Even though Northern Africa's recent economic growth rates tend to exceed the global average, this has not been reflected in the ability of states to provide productive employment opportunities for large sections of the population. Northern Africa's increasingly youthful population is becoming better educated, thus is more aware of its relative social and economic plight.

African governments have been called upon to embark on inclusive, employment-creating and sustainable growth strategies, aimed at meeting the needs of the youth. Some analysts have concluded that Arab states in particular had failed to develop an independent competitive private sector integrated into global markets. Even when employed, African youth often find themselves in poorly paid informal jobs with no prospects of acquisition of useful skills or subsequent advancement. The problem is particularly acute in middle-income countries and

The Tunis El Manar University has over 40,000 students. Unfortunately Tunisia's economy can only create job opportunities for half the graduates. **©Michael Sean Gallagher.** ©Licensed under the Creative Commons Attribution-Share Alike 2.0 Generic license.

during 2009 Northern Africa recorded youth unemployment of 23.4 per cent, nearly four times higher than the adult rate.[111]

Libya's civil war saw the return to Tunisia of thousands of workers previously employed there, pushing overall unemployment up to 19 per cent in 2011 and youth unemployment to 42 per cent.[112] Tunisia has traditionally placed great emphasis on tertiary education, and 6.2 per cent of the adult population has a university degree. Almost 38 per cent of 19 to 24 year-olds are registered at university, with women in the majority. Unfortunately, courses offered by universities fail to fulfil the requirements of the labour market, and 220,000 young graduates are among the 19 per cent of the overall unemployed workforce of 738,000. In part this situation is the result of a massive increase in university admissions over the past 10 years, but the economy creates only enough job opportunities for half of the 59,000 graduates entering the market annually. Generous policies of targeted tax relief and wage subsidies have failed, so far, to reverse this trend. The interim government has launched new and expensive programmes, only to find that training institutions lack the capacity to cope.

Unfortunately, there is limited demand for qualified workers in the Tunisian economy, as it is dominated by family-run enterprises. Even the manufacturing sector has limited absorption capacity and Tunisia will have to develop new technological and service niches to alleviate the problem.[113]

Youth policies in Egypt suffered from three decades of neglect during the government of President Hosni Mubarak, when rhetoric about empowering youth to achieve their full potential and assist in national development stood in stark contrast with reality. Over the last 10 years before his ouster, Mubarak seemed to have lost interest in the 18-29 year-olds who comprise almost a quarter of Egypt's population. Mubarak came to power in 1981, yet a Ministry of Youth was reintroduced into cabinet only in 1999 and, even then, seemed to enjoy scant access to the presidency. Signals of renewed presidential engagement with youth affairs soon faded and Mubarak made his last appearance at the annual meetings with university students in 2002. Consultation with youth leaders was strangely absent, given the political importance of the ruling party's youth league.

There was much talk of the need to restructure the entire education system, to make it more responsive to the real demands of the market. Yet, action failed to meet vision, and spending on education remained paltry, with more than 80 per cent of the school budget going towards salaries. Financial restrictions were especially felt in the tertiary sector where, in 2008-2009, there were 2.4 million university and 130,000 technical students. Science education was hampered by a lack of equipment and computers while language skills were neglected.[114]

Consumer subsidies account for 27 per cent of government expenditure, compared with about 7 per cent on education. Illiteracy rates are high, at 30 per cent of the population, including 5.8 million between the ages of 10 and 35. In 2008 almost 2 million people in the 15-29 age range were unemployed; more than 90 per cent of Egypt's unemployed belonged to this age group. A national plan to create 3 million jobs by 2015 was launched in 2006, yet there is no indication of how far Egypt has progressed towards this target. As across virtually all of Northern Africa, the gender imbalance in employment is striking and surveys conducted in 2009 suggested that male participation in all forms of the economy stood at more than 80 per cent but women's at less

than 15 per cent.[115]

For the past 40 years, job creation in Libya has depended almost entirely upon the government and state enterprises. Over the past 15 years, however, this approach has proved incapable of creating sufficient employment for a growing cohort of young job seekers, and the 2006 census already admitted to an unemployment rate of more than 20 per cent. The rigidity and inefficiency of the private sector under Qadhafi's rule meant that, apart from the 50 per cent of workers employed by the state, almost all others had to earn their living in the poorly paid and unregulated informal sector.

Although Libya has invested substantial amounts in education, and while enrolment and literacy rates are high by regional standards, the quality of training has been poor and few graduates speak any other language than Arabic. Many of those who are well qualified, and wealthy enough, chose to further their studies and work abroad.

The interim government has realized the destabilizing influence of youth unemployment and has now created a labour ministry with a department dedicated to training. Still, the economic problems left by the civil war have created an environment that is hardly conducive to employment creation, apart from the work of reconstruction, and Libyans have tended to leave labour-intensive work to foreigners as they consider it demeaning.

Despite the success of the Algerian government's economic stimulation programmes in slashing the unemployment level to about 10 per cent in 2011, this remains a massive problem among those in the 15-24 year age group where 21.5 per cent is unemployed. Among women this rises to 37.5 per cent.[116] Those with higher education are the worst off, as educational establishments have failed to take account of changes in the world of work. As Algeria attempts to diversify its economy away from an overdependence on hydrocarbons, it will emphasize human resources and a knowledge-based economy, in which compliance with international standards will be essential.

At present the labour market is too rigid, and banks are unable to provide adequate credit for small and medium business enterprises. In addition, foreign investment in the economy is discouraged by complex bureaucracy and laws restricting overseas ownership, though foreigners continue to dominate the highly skilled end of the hydrocarbons sector.[117]

Research among households revealed that more than 40 per cent of jobs were filled through personal or family contacts and only 16 per cent by competition or examination. Employment programmes have enjoyed considerable success and have mitigated the most serious effects. Nevertheless the relationship between the tertiary education establishment and the demands of the workplace will need strengthening, especially if innovation and economic literacy are to play their required role.

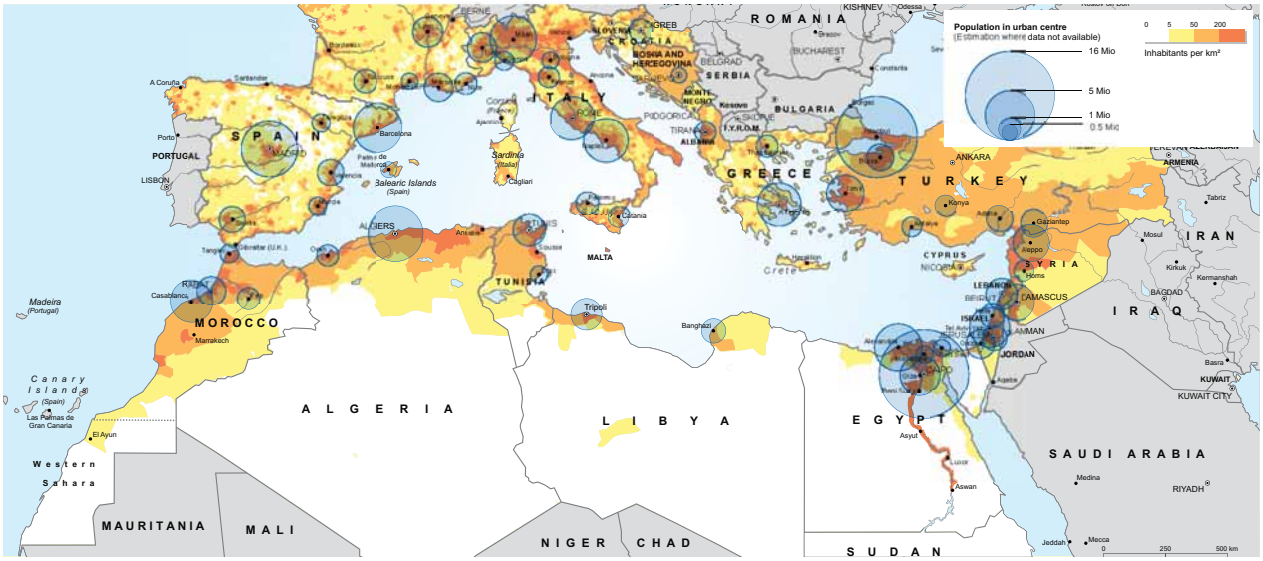
In early 2012 almost 10 per cent of the Moroccan workforce was unemployed. The situation was worst in urban areas, where 14.4 per cent of the workforce was affected (12.3 per cent among men and 22.1 per cent among women). Like its neighbours, Morocco faces a structural youth unemployment problem. Among 15-24 year-olds the national employment rate was 17.6 per cent, rising to 31.3 per cent in urban areas.[118] Despite a number of long-running programmes to reverse this trend, the tertiary education sector has failed to match the country's employment needs and new initiatives are being launched involving the introduction of short learning courses to impart the skills required by the market. Until now, graduates in Morocco have generally looked to the civil service to provide careers, but fiscal challenges make a reduction rather than an increase in jobs here more likely. Services and construction have a very low multiplier effect on employment, which is one of the reasons the job market is unable to absorb new entrants. There are also public-private efforts to stimulate a culture of entrepreneurship, in an effort to promote employment.[119]

The absence of separate data for Sudan, following the secession of South Sudan in 2011, complicates estimations of the impact of youth unemployment in both countries. Nevertheless, a number of general points may be ventured as it is unlikely that much accurate data was ever collected in recent years from the historically neglected south of the former Sudan. Unemployment among those aged between 15 and 24 was estimated in 2009 to run at 22 per cent, twice the overall adult rate. This reflected rapid population growth at a time when fewer new jobs were being created. Sudan's excessive dependence upon the oil sector has led to the neglect of investment and job creation elsewhere, as consumer demand was met by imports rather than domestic production. In 2011, 45 per cent of youth were employed in an agricultural sector in which incentives for new production for export was discouraged by overvalued exchange rates.

Some 90 per cent of Sudan's large-scale firms are based in Khartoum, but many private sector companies prefer to employ foreign workers on account of their better skills and efficiency. Only 26 per cent of formal employers in Khartoum recruit labour through the market, the remainder are selected through family and personal networks, which also dominate job creation in the informal sector.

Though primary schooling in Sudan is free, secondary and tertiary education are not. In 2008, individuals with high school certificates made up 49 per cent of unemployed youth and tertiary-level graduates a further 30 per cent. This is partly the result of an education system that fails to provide the basic knowledge and skills demanded in the marketplace, which also reduces the prospects for suitable retraining. Some 62 per cent of university students enrol for courses in the humanities, twice the number are taking science subjects. Young people in Sudan tend to be more mobile than other adults, and urbanization rates among this cohort are especially high, partly as a result of war displacement and demobilization. Government has become increasingly aware of the problems of social and political discontent arising from this situation, but policies aimed at mitigation have borne little fruit, largely because of the inflexibility of the market, and the failure to integrate job creation programmes with other initiatives in a national growth and employment strategy.[120]

MAP 2.4: **URBAN POPULATION IN THE MEDITERRANEAN REGION**



Sources: Center for International Earth Science Information Network (CIESIN), Columbia University; World Gazetteer

South Mediterranean Coastal Urbanization

Parts of the Mediterranean coastline of Northern Africa have developed extremely rapidly over the past decades (see Map 2.4). The escalation in population and concomitant development, resource and systemic pressures has led to a number of responses to manage and improve resilience to impending crises and challenges facing the Mediterranean ecosystem. Northern African coastal cities and countries are party to various initiatives aimed at improving environmental management of the larger system through addressing identified aspects including pollution and erosion. The potential collapse of the Mediterranean ecosystem is a dire threat to the coastal nations it serves, given the numerous ecosystem services performed by this relatively closed marine system.

▲ Pollution on the beach in Hammamet, Tunisia. **©Habib M'henni.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

Pollution

Land-based and marine pollution sources contribute to increased ecosystem pressures. However, larger cities such as Tangier, Tetouan and Nador (all in Morocco) contribute to both industrial and urban pollutants, including heavy metals and sewage. Algerian cities such as Algiers, Oran and Annaba are also responsible for, and affected by, a variety of discharged pollutants, including organic pollution as well as heavy metals and other toxic compounds from oil refineries and chemical plants, especially near the larger industrial harbours. The north Tunisian coastline is most affected in the Bay of Tunis.[121]

Erosion

Reduction in natural habitats reduces natural resilience to coastal erosion through interference with, and degradation of, coastline stabilizing ecosystem services. Urban sprawl and ribbon-like coastal development have affected the integrity of these systems. Most of the Northern African coastline, with the exception of Egypt, is less at risk of extreme urban densification than the coastlines of Spain and Lebanon (Map 2.1).[122] Nonetheless, the extent of sprawl is clear, with significant reduction of coastal stabilization and reduced resilience to predicted sea level alteration through climate change. Erosion of the protective Levantine Vermetid Terraces in the Eastern Mediterranean, exacerbated by water quality changes,[123] could further increase coastal erosion; affect agricultural lands; impact food and water security; increase flooding and inundation; and place urban lives and livelihoods at higher risk.

It is critical that all Northern African countries and cities on the Mediterranean coastline join forces with existing international and regional initiatives to improve long-term management of this large but fragile ecosystem. For example, local initiatives to improve waste management can improve water quality, while appropriate land-use and urban planning can ensure that coastal development does not harm natural habitats that serve to protect North African coastlines and cities as well as increase the sub-region's resilience to exogenous change.

ENDNOTES

1. Though Western Sahara is featured in this report as a separate entity, its status has been disputed since before the withdrawal of the Spanish colonial power in 1976. Morocco laid claim to the 266,000 km^2 phosphate-rich territory over the objections of the armed liberation movement Polisario, which proclaimed the territory's independence as the Sahrawi Arab Democratic Republic (SADR). The SADR is currently recognized by some 50 states, and by the African Union, leading to Morocco's withdrawal from that organization. Negotiations about a referendum to decide the territory's future are currently frozen, and Polisario has threatened to resume its liberation struggle. Western Sahara has a population of some 500,000, though most of these live in the 80 per cent of the territory under Moroccan administration, including 200,000 in the largest city, Laayoune (El-Aaiun), in which the Moroccan government has invested heavily. The SADR government, in exile at Algerian refugee camps of Tindouf, has declared the small oasis village of Bir Lehlou near the Mauritanian border as the temporary capital. (Source: New York University, Center on International Cooperation (2012), *Annual Review of Peace Operations 2012.* Boulder, Lynne Reinner, pp 123-126).
2. UNDESA (2012).*World Urbanization Prospects: the 2011 Revision*, (New York, 2012).
3. UN-Habitat (2008). *The State of African Cities 2008*. Nairobi: UN-Habitat, pp. 23-25.
4. UNDESA. (2012).*World Urbanization Prospects: the 2011 Revision*, (New York, UNDESA). 2012.
5. IMF (2013). *World Economic Outlook, April 2013: Hopes, Realities, Risks*. (Washington DC, IMF), pp 1-23, 39-41, 46-51.
6. Clark, P. (2013). *'Body blow' for carbon prices after EU votes against emissions policy*, in *Financial Times*, 17 April 2013.
7. Fioramonti, L. (2013). *Gross Domestic Problem: The Politics behind the World's Most Powerful Number.* (London, Zed Books).
8. IMF. (2012). *Middle East and North Africa: Economic Outlook and Key Challenges.* (Washington DC, IMF) April 2012, p. 3; IMF (2012) *Regional Economic Outlook: Middle East and Central Asia.* November 2012 p. 88; IMF (2013). *World Economic Outlook April 2013: Hopes, Realities, Risks* (Washington, IMF) p 154.
9. International Crisis Group (2013), *Marching in Circles: Egypt's Dangerous Second Transition;* Hamid, S (2013), "A future worse than Mubarak's reign", *New York Times*, 14 August 2013; Economist Intelligence Unit (2013), *Libya: Country Report*, 6 September 2013; Economist Intelligence Unit (2013), *Tunisia: Country Report*, 6 September 2013; International Crisis Group (2013), *Tunisia: Violence and the Salafi Challenge*.
10. AfDB (2012). *African Economic Outlook: North Africa is Gradually Recovering from Political Turmoil*, accessed from www.africaneconomicoutlook.org/en/outlook/north-africa-is-gradually-recovering-from-political-turmoil/ 20 10 2012.
11. IMF (2012). *Middle East and North Africa: Economic Outlook and Key Challenges.* (Washington DC, IMF) April 2012, pp. 7-8.
12. Noueihed, L. and Warren, A. (2012)*The Battle for the Arab Spring: Revolution, Counter-Revolution and the Making of a New Era*, (New Haven, Yale University Press), pp 1-43; Ali, K. (2012), *Precursors of the Egyptian Revolution*, in *IDS Bulletin*, vol 43, no 1, January 2012, pp 16-25.
13. Africa Confidential (2012). *Egypt: A country polarized*; *Libya: Unity under strain*; *Tunisia: Wilting jasmine*, vol 53, no 25, 14 December 2012; International Crisis Group (2013), *Marching in Circles: Egypt's Dangerous Second Transition;* Hamid, Shadi (2013), *A future worse than Mubarak's reign*,in *New York Times*, 14 August 2013.
14. Economist Intelligence Unit (2012). *Morocco Country Report,* December 2012
15. Economist Intelligence Unit (2012). *Arab Spring, economic winter?* 23 May 2012; IMF (2012). *Middle East and North Africa: Economic Outlook and Key Challenges.* (Washington DC, IMF) April 2012, pp. 4-6.
16. Brady, J. (2012) *After the Arab Spring: How Islamists Hijacked the Middle East Revolts*, (New York, Macmillan).
17. Africa Confidential (2013), *Egypt: After the crisis, the crackdown*, 23 August 2013.
18. Bowen. J. (2012). *The Arab Uprisings: The People Want the Fall of the Regime.* (London, Simon & Schuster).
19. UN-Habitat (2012). *The State of Arab Cities 2012: Challenges of Urban Transition.* Nairobi, p 99.
20. Sharp, D. (2012). *How the Urbanism of Small Cities Helped Shape the Arab Uprisings*. In *Global Urbanist,* 31 July 2012, accessed from www.globalurbanist.com/2012/07/31/small-cities-arab-uprisings/ on 6 December 2012.
21. UN-Habitat (2012). *The State of Arab Cities 2012: Challenges of Urban Transition.* (Nairobi, 2012), pp. 3-4.
22. *Ibid*, pp 89-93
23. *Ibid*, p 90.
24. *Ibid*, p 93.
25. *Ibid,* p 89.
26. *Ibid,* p 92.
27. *Ibid*, p 89.
28. *Ibid,* pp 41-44.
29. Paciello, M. (2012). "Foreword", in *Reversing the Vicious Circle in North Africa's Political Economy: Confronting Rural, Urban and Youth Related Challenges*, in *Mediterranean Paper Series*, May 2012, pp. iii-v
30. UNDP (2011). *Arab Development Challenges Report 2011: Towards the Developmental State in the Arab Region,* pp 22-8
31. UNDESA. (2012). *World Urbanization Prospects: The 2011 Revision*. (New York, UNDESA), pp
32. Bibi, S. and Nabli M. (2010) *Equity and Inequality in the Arab Region*. Policy Research Report no 33, Economic Research Forum, Cairo, February 2010, pp iii-6, 19-54.
33. Oxford Poverty and Development Initiative (OPHI), *Country Briefing Tunisia 2011; Country Briefing Morocco 2011; Country Briefing Egypt 2011* at www.ophi.org.uk accessed 1 September 2012.
34. Oxford Poverty and Development Initiative (OPHI), *Multidimensional Poverty Index 2011* at www.ophi.org.uk/mpi-2011-research-brief/ accessed 1 September 2011.
35. Siemens AG, *African Green City Index*, Munich, 2011, p 7 at www.siemens.com/greencityindex accessed 30 September 2012.
36. Oxford Poverty and Development Initiative (OPHI), *Multidimensional Poverty Index 2011* at www.ophi.org.uk/mpi-2011-research-brief/ accessed 1 September 2011.
37. National Intelligence Council (2009). *North Africa: The Impact of Climate Change to 2030* (Washington DC, NIC) August 2009, p 3
38. UN-Habitat (2012). *The State of Arab Cities 2012: Challenges of Urban Transition* (United Nations, Nairobi) pp 18, 109
39. National Intelligence Council (2009). *North Africa: The Impact of Climate Change to 2030* (Washington DC, NIC) August 2009, pp 3-4, 33-34
40. *Ibid*, pp 4, 22, 43-45.
41. UN-Habitat (2012). *The State of Arab Cities 2012: Challenges of Urban Transition* (United Nations, Nairobi) p 110.
42. National Intelligence Council. (2009). *North Africa: The Impact of Climate Change to 2030* (Washington DC, NIC) August 2009, pp 4, 22-32; UN-Habitat (2012). *The State of Arab Cities 2012: Challenges of Urban Transition* (United Nations, Nairobi) p 109; World Bank (2012).*Poor Places, Thriving People* (Washington DC, World Bank) pp 72-74.
43. National Intelligence Council. (2009). *North Africa: The Impact of Climate Change to 2030* (Washington DC, NIC) August 2009, pp 23-24.
44. *Ibid*, pp 77-83.
45. *Ibid,*, pp 22-28.
46. African Economic Outlook. (2012). Morocco, p 11. Available from: www.africaneconomicoutlook.org/en/countries/north-africa/morocco/, accessed 20 May 2013.
47. National Intelligence Council. (2009). *North Africa: The Impact of Climate Change to 2030* (Washington DC, NIC) August 2009, p24; United Nations Environment Programme (2007). *Sudan: Post-Conflict Environmental Assessment* (Nairobi, UNEP) pp 242-245; Egyptian Environmental Affairs Agency (2010). *Egypt Second National Communication under the United Nations Framework Convention on Climate Change,* (Cairo EEAA) May 2010 p 12.
48. Sudan, South Sudan, Eritrea, Ethiopia, Uganda, Kenya, Tanzania, Rwanda, Burundi and Democratic Republic of Congo.
49. National Intelligence Council. (2009). *North*

ENDNOTES

Africa: The Impact of Climate Change to 2030 (Washington DC, NIC) August 2009, p 24: United Nations-Habitat (2010) *The State of African Cities: Governance, Inequality and Urban Land Markets* (Nairobi, UN-Habitat) Text Box 4.9, p 165.

50. Egyptian Environmental Affairs Agency. (2010). *Egypt Second National Communication under the United Nations Framework Convention on Climate Change,* (Cairo EEAA) May 2010 p 69.
51. *Ibid*, pp 70-73.
52. National Intelligence Council (2009). *North Africa: The Impact of Climate Change to 2030* (Washington DC, NIC) August 2009, p 25.
53. UN-Habitat (2012). *The State of Arab Cities 2012: Challenges of Urban Transition* (United Nations, Nairobi) p 108.
54. World Bank and Marseille Center for Mediterranean Integration. (2011). *North African Coastal Cities Address Natural Disasters and Climate Change: Summary of the Regional Study* (Washington DC, World Bank) p 2.
55. Egis BCEOM International, IAU-IDF and BRGM. (2011). *Climate Change Adaptation and Natural Disasters Preparedness in the Coastal Cities of North Africa.* pp 66-85.
56. *Ibid*, pp 37-55; Egyptian Environmental Affairs Agency (2010). *Egypt Second National Communication under the United Nations Framework Convention on Climate Change,* (Cairo EEAA) May 2010 pp 83-84.
57. Egyptian Environmental Affairs Agency. (2010). *Egypt Second National Communication under the United Nations Framework Convention on Climate Change,* (Cairo EEAA) May 2010 pp 85-89.
58. World Bank and Marseille Center for Mediterranean Integration. (2011). *North African Coastal Cities Address Natural Disasters and Climate Change: Summary of the Regional Study* (Washington DC, World Bank) p 7.
59. *Ibid,* p 10.
60. World Bank and Marseille Center for Mediterranean Integration. (2011). *North African Coastal Cities Address Natural Disasters and Climate Change: Summary of the Regional Study* (Washington DC, World Bank) p 11.
61. Egis BCEOM International, IAU-IDF and BRGM. (2011). *Climate Change Adaptation and Natural Disasters Preparedness in the Coastal Cities of North Africa.* (Marseilles) pp 86-93.
62. *Ibid*, pp 37-55.
63. World Bank and Marseille Center for Mediterranean Integration (2011) *North African Coastal Cities Address Natural Disasters and Climate Change: Summary of the Regional Study* (Washington DC, World Bank) pp16-17.
64. *Ibid*.
65. Asher, M.. (1986) *A Desert Dies*, (London, Penguin Books); Gerard Prunier (2005), *Darfur: The Ambiguous Genocide*, London, Hurst,
66. UN-Habitat (2012). *The State of Arab Cities 2012: Challenges of Urban Transition* (United Nations, Nairobi) p 187.
67. Waal, A.. (2005) *Famine that Kills*, Revised edition, Oxford, OUP; John Ryle, Justin Willis, Suliman Baldo and Jok Madut Jok (eds.). (2011). *The Sudan Handbook* James Currey, Woodbridge, pp 140-141.
68. UN-Habitat (2012). *The State of Arab Cities 2012: Challenges of Urban Transition* (United Nations, Nairobi) pp 202-203.
69. Republic of Sudan. (2003), *Sudan's First National Communications under the United Nations Framework Convention on Climate Change*, volume 1, Khartoum, Higher Council for Environment and Natural Resources, pp 4-6.
70. Booz Allen. (2009). *Booz Allen Annual 2009 Report: Delivering Results that Endure*, Annual Report, Booz Allen Hamilton.
71. UN-Habitat (2012). *The State of Arab Cities 2012: Challenges of Urban Transition.* Nairobi, UN-Habitat, p 20.
72. *Ibid*, p 110.
73. One of the climate investment funds. Online at: www.climateinvestmentfunds.org/cif/node/2.
74. Akhtar, Shashad. (2009). "Governance, integrity, and transparency: An important development agenda for MENA", *World Bank MENA Knowledge and Learning Quick Notes Series*, no 17, December 2009, p. 1.
75. UN-Habitat (2010). *The State of African Cities 2010*, pp 75-79; UN-Habitat (2012). *The State of Arab Cities 2012: Challenges of Urban Transition.* Nairobi, UN-Habitat, p 104.
76. UN-Habitat (2012). *The State of Arab Cities 2012: Challenges of Urban Transition.* Nairobi, UN-Habitat; Siemens. (2012). *African Green City Index (AGCI): Assessing the Environmental Performance of Africa's Major Cities*, Economist Intelligence Unit for Siemens; Humanitarian Policy Group, ODI (2011), *City Limits: Urbanisation and Vulnerability in Sudan, Khartoum Case Study* (London: HPG).
77. Gillot, Gaëlle and Jean-Yves Moisseron. (2012). "The Arab Spring and urban governance challenges in North African countries" in Reversing the Vicious Circle in North Africa's Political Economy: Confronting Rural, Urban and Youth Related Challenges, *Mediterranean Paper Series*, May 2012, p 14.
78. UN-Habitat (2010), *The State of African Cities 2010*, pp 72-74; UN-Habitat (2012). *The State of Arab Cities 2012: Challenges of Urban Transition.* Nairobi, UN-Habitat, pp 97-100.
79. Amnesty International. (2011). *"We are not Dirt: Forced Evictions in Egypt's Informal Settlements." London.*
80. UN-Habitat (2010). *The State of African Cities 2010*, Nairobi, p 66.
81. UN-Habitat (2006). "Slums: Some definitions." Available at: www.unhabitat.org/documents/media_centre/sowcr2006/SOWCR%205.pdf. Accessed 30 September 2012.
82. UN-Habitat (2010). *The State of African Cities 2010*, p 66.
83. Tarbush, N. (2012). "Cairo 2050: Urban dream or modernist delusion?" *Journal of International Affairs,* Spring/Summer 2012, Vol. 65, No. 2, Spring/Summer 2012.
84. Stadnicki, R. (2012). *La Caire après la revolution: blocages de la ville et déblocage de l'urbanisme* Blog post on *Les carnets de l'Ifpo. La recherché en train de se faire á L'Institut français du Proche-Orient,* 23 October 2012 at http://ifpo.hypotheses.org/4651 accessed 21 December 2012.
85. Deutsche Gesellschaft für Technische Zusammenarbeit. (2010). *Improving Informal Areas in Greater Cairo: The Cases of Ezzbet al Nasr and Dayer el Nahia.* (Berlin: GTZ)
86. Siemens. (2012). *African Green City Index (AGCI): Assessing the Environmental Performance of Africa's Major Cities*, Economist Intelligence Unit for Siemens, p 16.
87. IEA WEO. (2006). *World Energy Outlook*, International Energy Agency (IEA); UN-Habitat (2012). *The State of Arab Cities 2012: Challenges of Urban Transition.* Nairobi, UN-Habitat, p 110.
88. Siemens. (2012). *African Green City Index (AGCI): Assessing the Environmental Performance of Africa's Major Cities*, Economist Intelligence Unit for Siemens, pp 43-45.
89. *Ibid*, pp 52-53.
90. *Ibid*, pp 88-89.
91. UN-Habitat (2012). *The State of Arab Cities 2012: Challenges of Urban Transition.* Nairobi, UN-Habitat, p 62-63; UN-Habitat (2010), *The State of African Cities 2010*, Nairobi, p 83.
92. Siemens. (2012). *African Green City Index (AGCI): Assessing the Environmental Performance of Africa's Major Cities*, Economist Intelligence Unit for Siemens, pp 42-43.
93. *Ibid*, p 54.
94. GUI. (2009). *Global Urban Indicators – Selected Statistics: Monitoring the Habitat Agenda and the Millennium Development Goals*, Global Urban Observatory, November 2009.
95. Siemens. (2012). *African Green City Index (AGCI): Assessing the Environmental Performance of Africa's Major Cities*, Economist Intelligence Unit for Siemens, p 42.
96. *Ibid*, p 47.
97. *Ibid*, p 54
98. *Ibid*, p 91.
99. *Ibid*, p 42.
100. UN-Habitat. (2012). *The State of Arab Cities 2012: Challenges of Urban Transition.* Nairobi, UN-Habitat, p 112.
101. Afifi, R. (2011). "Youth as agents of change", in Arab Youth: Civic Engagement and Economic Participation, UNESCO Regional Bureau in Beirut, pp. 8-12.
102. Doumit, G. (2011). "Economic systems in favour of social justice", in Arab Youth: Civic Engagement and Economic Participation, UNESCO Regional Bureau in Beirut, pp. 26-31.
103. Online: http://6april.org/english/
104. Heiderman, K. and Youssef, M. (eds.). (2012). *Reflections on women in the Arab Spring,*

ENDNOTES

Women's Voices from Around the World, Middle East Programme Woodrow Wilson International Centre for Scholars, in Celebration of International Women's Day 2012.

105. *Ibid*; Fernández, R.A.A, Ortega, O.M. (2011). "Women's rights in the Arab Spring: a chance to flourish, a risk of hibernation", Revista de Estudios Juridicos, No. 11.

106. Siemens. (2012). *African Green City Index (AGCI): Assessing the Environmental Performance of Africa's Major Cities*, Economist Intelligence Unit for Siemens.

107. Abufayed, A.A. and Elkebir, A.A. (2010). "Water Supply and Sanitation in Libya: Gap Analysis, National Needs Assessment and UNDP Interventions. Strategic Entry Points Identification." Water Governance Program for Arab States. UNDP. Available at: www.wgpas-undp.org/Reports/NNA-Libya.pdf, accessed on 20 May, 2013.

108. European Union Water Initiative. (2009). "Financing water supply and sanitation in the Greater Cairo area" *Egypt Country Dialogue on Water*, April 2009, p 3

109. UN-Habitat (2011). *State of the World's Cities Report 2010/11: Bridging the Urban Divide.* UN Habitat, London,.

110. Paciello, M. (2012). "Foreword", in *Reversing the Vicious Circle in North Africa's Political Economy: Confronting Rural, Urban and Youth Related Challenges*, in *Mediterranean Paper Series*, May 2012

111. African Development Bank. (2012) *African Economic Outlook: North African Countries*, p 4.

112. IMF (2012). *Middle East and North Africa: Economic Outlook and Key Challenges*. Washington DC, 2012, pp 15-16.

113. African Development Bank. (2012). *African Economic Outlook: North African Countries* pp 90-91

114. Youssef Wardany. (2012). "The Mubarak Regime's Failed Youth Policies and the January Uprising", *IDS Bulletin*, vol 43, no 1, January 2012, pp 37-45

115. African Development Bank. (2012) *African Economic Outlook: North African Countries* p 34.

116. Furceri, Davide. (2012). *Unemployment and Labor Market Issues in Algeria*, IMF Working Paper WP/12/99April 2012, p 4

117. African Development Bank. (2012). *African Economic Outlook: North African Countries* p 19.

118. *Ibid*, p 76.

119. *Ibid*, pp 64, 76.

120. *Ibid*, p 138.

121. UNEP (2012). "Mediterranean Action Plan. Initial Integrated Assessment of the Mediterranean Sea: Fulfilling Step 3 of the Ecosystem Approach Process." Proceedings of the 17th Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols. Paris. Accessed on 20 May, 2013.

122. Proceedings of the International workshop on the Impact of large coastal Mediterranean cities on Marine Ecosytems, Alexandria, Egypt – 10-12 February 2009. Accessed on 20 May 2013.

123. *Ibid*.

PART THREE

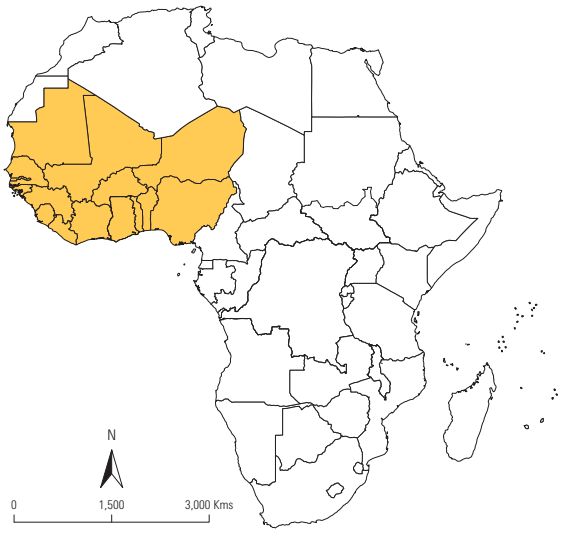
THE STATE OF **WESTERN AFRICAN CITIES**

An aerial view of Lagos, Nigeria with the three main bridges linking the island to the mainland. **©George Osodi/Panos Pictures**

3.1
Population and Urbanization

▲
Ouagadougou, the capital of Burkina Faso, has an average annual growth rate of over 9%.
©Wegmann. Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

MAP 3.1: **THE WESTERN AFRICAN SUB-REGION**



For the purposes of this report, the Western African sub-region includes 17 countries: Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Guinea, Guinea-Bissau, Gambia, Ghana, Liberia, Mali, Mauritania, Niger, Nigeria, St. Helena, Senegal, Sierra Leone and Togo.

The total population of the sub-region was 312.2 million in 2011, of whom 140.1 million (44.9 per cent) lived in areas classified as urban and 172.1 million (55.1 per cent) as rural. It is projected that the sub-region will reach an urban majority of 196 million residents just after 2020.

Western Africa is the continent's fastest urbanizing sub-region after Eastern Africa. The Western sub-region is projected to increase its share of urban dwellers from 44.9 per cent urban in 2011 to 49.9 per cent by 2020, and 65.7 per cent by 2050 (Table 3.1). Consequently, all countries of the sub-region are challenged by accelerating city growth rates and the associated rise in demand for affordable housing and services. Urban growth in the sub-region is presently driven by natural increase in city populations rather than by rural-urban migration. This has sociological implications for the nature of urban relations and values. This is because the social character of urban areas is driven less by urbanization of rural populations and more by the processes of urbanization that are unfolding within the sub-region's cities. Estimates and measurements of national levels of urbanization in the sub-region are, however, contested.[1] For example, Nigeria's census data and urban population estimates have been regularly questioned since the 1954 census.[2] Since

TABLE 3.1: **WESTERN AFRICAN POPULATION DATA (2000-2050)**

Population	2000	2005	2010	2015*	2020*	2025*	2030*	2035*	2040*	2045*	2050*
Urban (*000)	90 777	110 832	134 810	163 104	195 879	233 022	274 819	321 401	372 864	428 878	488 886
Urban (%)	38.5	41.4	44.3	47.1	49.9	52.7	55.4	58.1	60.7	63.2	65.7
Rural (%)	61.5	58.6	55.7	52.9	50.1	47.3	44.6	41.9	39.3	35.8	34.3

** Projections*
Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York, 2012

TABLE 3.2: **POPULATION OF RURAL AND URBAN AREAS IN WESTERN AFRICA**

Country	Population (in thousands)			Percentage Urban Population				
	Urban	Rural	Total	2011	2020*	2030*	2040*	2050*
Benin	4 087	5 013	9 100	44.9	50.7	56.5	61.7	66.7
Burkina Faso	4 498	12 470	16 968	26.5	34.0	41.5	48.3	55.2
Cape Verde	314	187	501	62.6	68.7	73.4	76.6	79.5
Côte d'Ivoire	10 339	9 814	20 153	51.3	57.5	63.1	67.8	72.1
Gambia	1 017	759	1 776	57.3	61.6	65.8	69.7	73.3
Ghana	12 955	12 011	24 966	51.9	57.5	62.8	67.7	72.3
Guinea	3 622	6 600	10 222	35.4	40.2	46.2	52.4	58.4
Guinea-Bissau	680	868	1 547	43.9	49.7	54.7	58.9	63.1
Liberia	1 989	2 140	4 129	48.2	51.8	56.4	61.4	66.1
Mali	5 532	10 308	15 840	34.9	40.8	47.1	53.2	59.2
Mauritania	1 469	2 073	3 542	41.5	44.6	49.8	55.2	60.4
Niger	2 866	13 203	16 069	17.8	20.6	25.3	30.9	37.1
Nigeria	80 635	81 836	162 471	49.6	55.0	60.8	66.3	71.3
Saint Helena	2	2	4	39.5	40.1	42.7	46.6	50.6
Senegal	5 430	7 338	12 768	42.5	45.7	50.8	56.2	61.4
Sierra Leone	2 353	3 645	5 997	39.2	43.0	48.2	53.9	59.5
Togo	2 339	3 815	6 155	38.0	42.5	47.9	53.6	59.3
TOTAL	**140 124**	**172 081**	**312 205**	**44.9**	**49.9**	**55.4**	**60.7**	**65.7**

** Projections*
Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York, 2012

Nigeria is the most populous country in Africa, this may also have serious consequences for regional urbanization estimates.

Western Africa's average levels of national urbanization are not as high as Northern Africa's but in the Western sub-region lies the Nigerian city of Lagos, soon to be the largest urban agglomeration in Africa. What has defined urbanization in the sub-region since the 1990s is the rapid growth rate of cities within the coastal belt, which constitutes 10 per cent of the sub-region's total surface area.[3] Urban populations in the sub-region experienced an increase of 92.1 million to 137.2 million between 2000 and 2010. In 2011, the sub-region's urbanization level reached 44.9 per cent (Table 3.2), increasing by 0.6 per cent from 2010. Projections are that by 2050 the sub-region's level of urbanization will resemble the present day profile of Northern African cities. However, a key distinction in respect of urban growth in Western Africa is that the expansion of secondary cities, rather than large cities alone, is driving this growth.

No major coastal cities existed in Western Africa before the colonial period. However, as a result of the mostly maritime-based logistics of colonialism, countries in the sub-region began an urbanization path strongly associated with the coast. That pattern is now changing, due to road infrastructure expansion; post-independence creation of new towns in the hinterlands; and, in more recent years, the emergence of inland urban development corridors with associated new urban agglomerations that combine into new urbanization patterns away from the coast. The average distance between urban centres with populations that exceed 10,000 decreased from 111 km in 1950 to 33 km in 2000.[4]

Partly because of the expanding road networks and development corridors, the sub-region is rapidly developing as a large integration space with important new economic cooperation opportunities. Coastal and inland urban agglomerations are becoming the driving force of economic integration, development and modernization. Urban and other

development corridors are, quite possibly, the most suitable economic engine under current conditions in the sub-region. These development corridors link the domestic economies of the sub-region to regional rather than just national markets and economies, guiding investment concentrations to the urban nodes along transport infrastructure.

Despite natural population growth being primarily responsible for today's expansion of large Western African cities, migration still plays a critical role in their economies, labour pools, food security and nutrient supply, and sociocultural life. Migration contributes to rural-urban linkages and social relations between urban traders and rural producers may be facilitated through ethnic, and other, networks.[5] Migrant roles and occupations are diverse, however. For example, efficient, state-subsidized transport encourages rural women to commute to the eastern Nigerian cities of Aba and Port Harcourt to work as cleaners and gardeners, whereas men migrate to work in the construction and oil industries.[6] In south-eastern Nigeria, the estimated contributions of migrant associations to building schools, town halls and water points has exceeded public investment in some cases.[7]

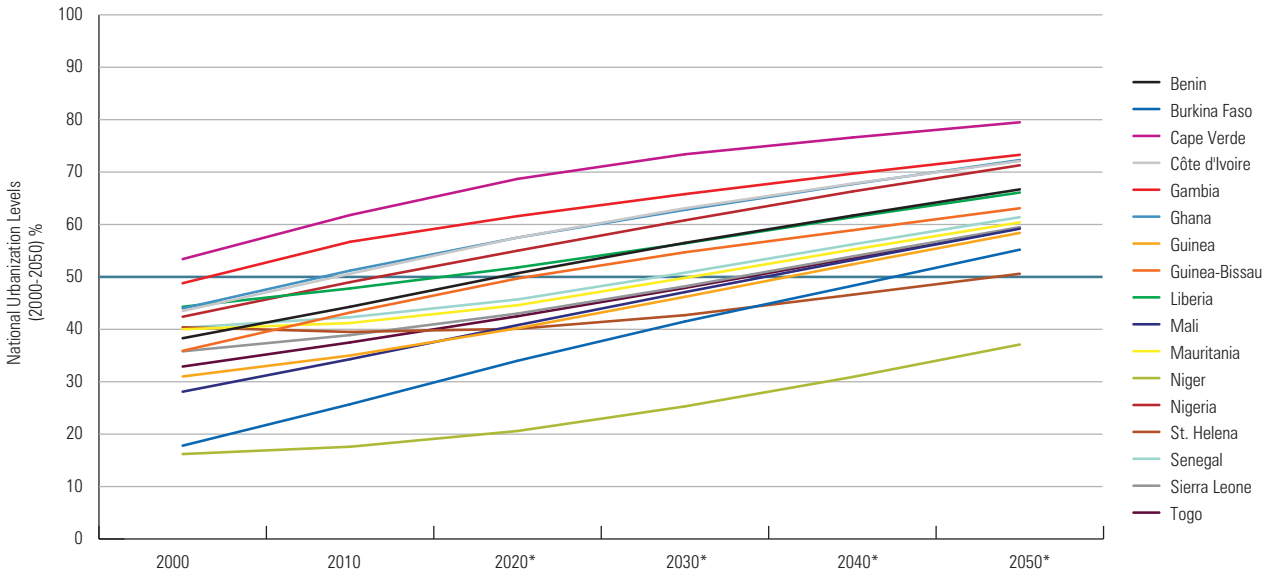
Urbanization Rates (2000-2050)

Western Africa is one of the world's poorest, least urbanized and least industrialized sub-regions. Smaller countries (such as Cape Verde, Guinea-Bissau, Gambia, Liberia, Togo and Sierra Leone), with less than 5 million inhabitants, cannot readily generate the markets, domestic purchasing power or diversified economies of the sub-region's larger, more populous countries. Even the major cities in these low-population countries often only generate small local urban economies, creating islands of comparative, but geographically concentrated, wealth and consumption. Consequently, national urban development tends to be quite uneven in these countries because virtually all economic opportunities, employment and access to services are concentrated in a single, large city.

United Nations data show there are 1,017 urban areas exceeding 10,000 inhabitants and about 104 agglomerations exceeding 100,000 inhabitants in the sub-region, and an estimated 481 localities will become "urban" between 2000 and 2020.[8] In contrast, considering towns with populations over 10,000, the Africapolis study identified 1,300 urban agglomerations, compared to only 194 urban agglomerations exceeding 100,000 people in 2010 (see Box 3.1).[9] Both

▲ Killing time in Kroo Bay slum, Freetown, Sierra Leone where up to 70% of youths are underemployed or unemployed. All countries of the sub-region are challenged by accelerating urban growth rates and the associated rise in demand for jobs, affordable housing and services. **©Tommy Trenchard/IRIN**

FIGURE 3.1: **WESTERN AFRICA - NATIONAL URBANIZATION LEVELS 1950-2050 (PER CENT)**



** Projections*
Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York, 2012

datasets, however, indicate that the conceptual utility of the "primate city" is no longer as useful as it may have been in the region 30 years ago.

Civil conflict and other violence in several of the sub-region's countries has encouraged uneven urban development. In times of crisis, the largest city often grows disproportionately fast by serving as the departing point for prospective international migration, or with inflows of refugees and internally displaced persons (IDPs) seeking more security. This typically widens the size gap between the capital city and the intermediate and small cities, further weakening national urban hierarchies and geographically, unevenly spread economic opportunities.

Under pressures of rapid population growth and residential mobility, several countries in the sub-region have already reached an urban population majority; these include Cape Verde (1998), Gambia (2003), Ghana (2008) and Côte d'Ivoire (2010). Benin, Liberia and Nigeria are projected to make the transition before 2020, Burkina Faso around 2042, while by 2050 Niger will only be 37.1 per cent urban (Figure 3.1).

Western Africa's general trend of decelerating urban growth rates by no means implies weak urban growth. City growth rates are nonetheless high, as shown in Table 3.4. Since the decelerating growth rates apply to ever-larger absolute numbers of urban dwellers, urban populations will continue to grow very rapidly. For instance, whereas the urban growth rate of Burkina Faso has started to decelerate, the country's 2005 urban population of 3.1 million nevertheless grew to 4.5 million in 2011 and is expected to more than double to a projected 9.7 million by 2025. Mali's 2011 urban population of 5.5 million is anticipated to almost triple to 15.2 million by 2035.[10]

United Nations data indicate that, between 2011 and 2020, West Africa will increase its urban population by 56 million, which represents the equivalent of its total 1987 urban population.[11] Regardless of which dataset better reflects the realities, the general trends are clear. It is, therefore, important that governments in the sub–region see city sizes, urban growth, geographic spread of cities over the national territory and current national urban hierarchies as critical indicators that should be key elements of their domestic and regional development strategies.

Larger Western African Cities

When reviewing sub-regional urbanization trends, it is important to take individual cities and relative sizes of metropolitan areas into account. In 2000, 14 urban agglomerations exceeded 1 million inhabitants; two exceeded 3 million (Abidjan and Kano); with one megacity of 10.8 million (Lagos), and 27 West African cities are projected to exceed 1 million inhabitants, with 12 exceeding the 3 million mark, and Lagos is projected to reach 18.8 million inhabitants (Table 3.3).

Abidjan, Abuja, Accra, Bamako, Dakar, Enugu, Ibadan, Kano and Ouagadougou are increasing by more than 100,000 inhabitants annually in the current decade. Niamey, Ouagadougou and Yamoussoukro face growth rates well over 5 per cent (Table 3.3). In some cases, excessive urban primacy of the capital city calls for interventions to produce more cities to absorb urban growth. This is particularly the case for Lomé, Nouakchott, Conakry, Ouagadougou and Niamey, where disproportionately large shares of the national urban population concentrate in one city.

BOX 3.1: **UNITED NATIONS STATISTICS AND THE AFRICAPOLIS DATA**

In considering urban agglomerations exceeding 20,000 inhabitants, the United Nations Department for Economic and Social Affairs (UNDESA) suggested a Western African urbanization level of 49 per cent in 2006, compared with an *Africapolis* estimate of 30 per cent. The main difference between *Africapolis* and UNDESA is that the former takes into account all population units with at least 20,000 inhabitants (towns with 20,000 inhabitants or more whose occupations are not mainly agrarian) and uses national censuses as the reference. The United Nations data set, however, is based on historic data and extrapolations of historic growth rates. These historic data, derived from censuses, are often incoherent and over-representing the lower tiers of the urban hierarchy. Countries' different census methodologies and wildly varying definitions of "urban" are also factors that cause inaccuracies.

The United Nations approach is purely statistical and perhaps too indiscriminately analyzing local units without attempting to compare data across censuses. Had this type of analyses been carried out unit by unit, it would have revealed numerous discrepancies. In fact, the gap between the UNDESA and the *Africapolis* data widens over time, from 20 to 39 per cent between 1963 and 2006. In practice, 75 per cent of the gap identified for this indicator in 2006 can be explained by the increasing weight of populations in units with fewer than 500,000 inhabitants, whose number is not given in the United Nations database. Yet, simple omissions cannot fully explain the gap. Thus, it would seem that the UNDESA data groups scattered rural populations under the "urban" category.

The model used by UNDESA aims principally at adjusting the urbanization rate to fit trends in global population for any given urban population. Projections thus iron out any discrepancies. However, the overall UNDESA figure for the Nigerian urban population, for instance, could be questioned since it seems to have been overestimated.

Indicators of Urbanization in Nigeria: United Nations Estimates

Unit size (inhabitants)	1963			2006			Annual rate of change of population
	Population	Agglomerations	% urban	Population	Agglomerations	% urban	
5–10 million	0	0	0.0	9 091 379	1	13.2	
1-5 million	1 060 418	1	11.2	9 864 585	6	14.3	
500,000-1 million	668 000	1	7.0	8 901 954	14	12.9	
500,000-20,000	7 770 000	Not specified	81.8	41 070 138	Not precise	59.6	
Total urban	**9 498 418**		**100.0**	**68 928 056**		**100.0**	**4.7**
Total population	**55 660 000**		**17.1**	**140 000 000**		**49.2**	**2.2**

Indicators of Urbanization in Nigeria: *Africapolis* Estimates

Unit size (inhabitants)	1963			2006			Annual rate of change of population
	Population	Agglomerations	% urban	Population	Agglomerations	% urban	
5–10 million	0	0	0.0	9 650 000	1	22.9	
1-5 million	0	0	0.0	8 500 000	5	20.2	
500,000-1 million	2 391 177	3	31.7	3 030 000	5	7.2	
500,000-20,000	5 143 957	93	68.3	20 921 255	262	49.7	
Total urban	**7 535 133**	**96**	**100.0**	**42 101 255**	**273**	**100.0**	**4.1**
Total population	**50 598 830**		**14.9**	**140 000 000**		**30.1**	**2.2**

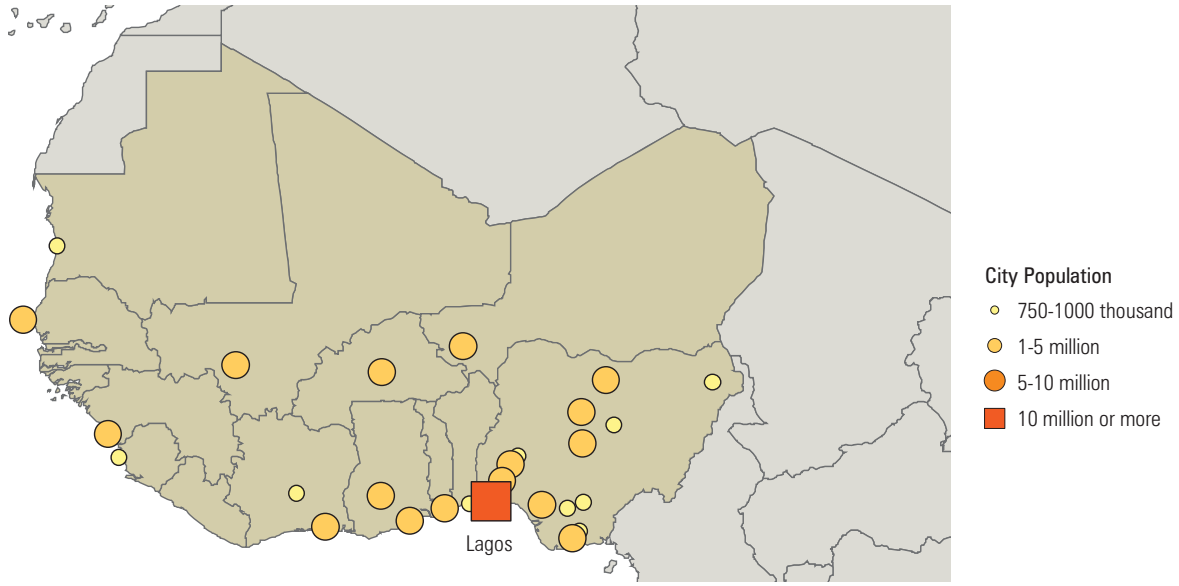
The above examples for Western Africa apply to the entire set of Africa data.
Source: AFRICAPOLIS, Urbanization Trends 1950-2020: A Geo-statistical Approach, West Africa: 105, Agence Française de Développement, http://www.afd.fr/

TABLE 3.3: **POPULATION DYNAMICS FOR WEST AFRICAN CITIES WITH MORE THAN 750,000 INHABITANTS (2011)**

City	Country	2011 Population (000)	Av. Annual Growth rate 2010-20* (%)	Per Cent of Urban Population 2011	Per Cent of Total Population 2011	Av. Annual Population Increase 2010-20*	2025 Population (*000)
Lagos	Nigeria	11 223	4.67	13.9	6.9	503 700	18 857
Abidjan	Côte d'Ivoire	4 288	4.20	41.5	21.3	174 500	6 971
Kano	Nigeria	3 375	4.52	4.2	2.0	147 700	5 724
Dakar	Senegal	3 035	4.45	55.6	23.8	130 100	5 064
Ibadan	Nigeria	2 949	4.59	3.7	1.8	131 000	5 028
Accra	Ghana	2 573	4.59	19.9	10.3	113 300	4 228
Abuja	Nigeria	2 153	6.44	2.7	1.3	129 600	4 000
Ouagadougou	Burkina Faso	2 053	9.16	45.6	12.1	175 100	4 795
Bamako	Mali	2 037	5.51	36.8	12.9	106 600	3 632
Kumasi	Ghana	2 019	4.68	15.6	8.1	90 600	3 343
Port Harcourt	Nigeria	1 894	5.40	2.3	1.1	97 500	3 371
Conakry	Guinea	1 786	5.35	49.3	17.5	91 700	3 195
Kaduna	Nigeria	1 524	4.68	1.9	..	69 100	2 633
Lomé	Togo	1 524	4.80	65.2	24.8	69 800	2 472
Benin City	Nigeria	1 359	4.91	1.6	..	64 400	2 377
Niamey	Niger	1 297	7.86	45.3	8.2	96 100	2 924
Ogbomosho	Nigeria	1 075	4.87	1.3	..	50 700	1 884
Yamoussoukro	Côte d'Ivoire	966	8.45	9.3	4.8	74 800	1 633
Freetown	Sierra Leone	941	4.22	40.0	15.7	38 500	1 540
Cotonou	Benin	924	4.65	22.6	10.2	41 000	1 517
Onitsha	Nigeria	908	5.52	1.1	..	47 900	1 642
Aba	Nigeria	866	4.16	1.1	..	41 600	1 529
Maiduguri	Nigeria	851	4.67	1.0	..	38 600	1 482
Ilorin	Nigeria	814	4.84	1.0	..	38 000	1 428
Enugu	Nigeria	807	5.18	1.0	..	117 800	1 439
Nouakchott	Mauritania	786	4.30	53.5	14.7	32 600	1 271
Jos	Nigeria	772	4.81	..	..	36 100	1 355

*.. Negligible (less than 1 per cent); * Projection*
Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York, 2012

MAP 3.2: **POPULATION DYNAMICS FOR WEST AFRICAN CITIES WITH MORE THAN 750,000 INHABITANTS (2011)**



Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York, 2012

3.2
Global Change and Implications for Urban Development

Nana Kojo Badu spreads drying cocoa beans at an Abrabopa cooperative facility. Ghana's GDP grew by 12.2 per cent in 2011 and in 2013 was one of the top–ten fastest growing economies in the world and the fastest growing in Africa. **©Jane Hahn/Panos Pictures.**

Economy and Instability

Economic growth in Western Africa has exhibited relatively high rates of gross domestic product (GDP) in recent years[12] and was projected to continue at rates above 6 per cent into 2012 and 2013. This optimism was contingent on containing political instability and conflict in the sub-region, with the current focus on Mali and Guinea-Bissau.[13] Another key threat to the sub-region's economic growth and development is drought in the Sahel, which can create or exacerbate conflict and other vulnerabilities,[14] particularly where poverty and inequality further contribute to instability.

Foreign direct investment (FDI) in the sub-region was USD 11.31 billion in 2010 and was estimated at USD 13.5 billion in 2011.[15] Ghana's GDP, which grew by 12.2 per cent in 2011,[16] accounted for 7.7 per cent of the sub-region's economic progression in 2010 and increased to 13.7 per cent in 2011.[17]

FDI into Ghana increased from USD 860 million in 2007 to USD 1.67 billion in 2011. Growth in service sectors such as telecommunications as well as new projects in Niger (oil) and Sierra Leone (iron ore), have contributed to the growth of FDI.[18] London Mining has invested USD 60 million into iron ore in Sierra Leone[19] while in Niger more oil has been discovered in the Agadem oil fields. These are operated by China National Petroleum Corporation (CNPC), and nine new production agreements were awarded to five operators in 2012, with further exploration being conducted by CNPC and Taiwan's CPC Corp.[20]

Recent economic growth in Western Africa is arguably largely driven by rising oil and gas output and high commodity prices (e.g. for oil and minerals).[21] Nigeria's GDP grew by 8.1 per cent in 2010[22] and, as the largest economy in the sub-region, contributes significantly to regional growth. Nigeria's oil industry and populous consumer base has seen it rise to first position on the continent in terms of FDI.[23] The emergent urban middle classes in Nigeria, Ghana, Senegal and Côte d'Ivoire are seen as being vital to sustaining growth and FDI into the sub-region.

TABLE 3.4: **POVERTY DYNAMICS OF WESTERN AFRICA**

Country	Year	Population Living in Multidimensional Poverty (%)	Population living on less than USD 1.25 per day 2000-2009 (%)	Population Below National Poverty Line 2000-2009 (%)	Real GDP Growth Rate For 2010-2011	HDI Ranking out of 187 (2012)
Benin	2006	71.8	47.3	39.0	2.6 - 3.1	166
Burkina Faso	2006	82.6	56.5	46.4	7.9 - 5.6	183
Cape Verde	--	--	21.0	26.6	5.6 - NA	132
Côte d'Ivoire	2005	61.5	23.8	42.7	2.4 - (-5.8)	168
Gambia	2006	60.4	34.3	58.0	5.5 - 5.4	165
Ghana	2008	31.2	30.0	28.5	7.7 - 13.6	135
Guinea	2005	82.5	43.3	53.0	1.9 - 4.2	178
Guinea-Bissau	--	--	48.8	64.7	3.5 - 4.3	176
Liberia	2007	83.9	83.7	63.8	7.3 - 8.2	174
Mali	2006	86.6	51.4	47.4	5.8 - 2.7	182
Mauritania	2007	61.7	21.2	46.3	5.2 - 5.1	155
Niger	2008	92.4	43.1	59.5	8.2 - 2.3	186
Nigeria	2008	54.1	64.4	54.7	7.9 - 7.4	153
Senegal	2005	66.9	33.5	50.8	4.1 - 4.0	154
Sierra Leone	2008	77.0	53.8	66.4	4.9 - NA	177
Togo	2006	54.3	38.7	61.7	3.7 - 3.9	159

HDI = Human Development Index

Sources: UNDP (2011). Human Development Report 2011.[33] Sustainability and Equity: A Better Future for All, United Nations Development Programme; UNDP (2013). Human Development Report 2013.[34] The Rise of the South: Human Progress in a Diverse World, United Nations Development Programme; ADB (2012) - African Development Bank Statistical Yearbook 2012.[35]

TABLE 3.5: **MIDDLE CLASS AND POVERTY DYNAMICS OF WESTERN AFRICA**

Country	Middle Class Without Floating Class (%) (USD 4-20 at 2005 PPP USD)	Middle Class With Floating Class (%) (USD 2-20 at 2005 PPP USD)	Proportion of People Living on Less Than USD 1.25 Per Day (%)
Benin	10.8	17.7	49.99
Burkina Faso	3.2	13.3	55.04
Cape Verde	16.7	46.4	18.36
Côte d'Ivoire	18.9	37.1	20.38
Gambia	16.0	37.9	31.3
Ghana	19.8	46.6	29.99
Guinea	4.3	10.6	69.83
Guinea-Bissau	7.6	17.8	42.46
Liberia	1.9	4.8	86.07
Mali	8.1	25.1	51.43
Mauritania	5.0	42.8	13.37
Niger	5.3	14.0	65.88
Nigeria	9.9	22.8	62.39
Senegal	11.8	35.7	33.5
Sierra Leone	7.1	18.6	49.92
Togo	8.8	20.4	38.68

Source: ADB (2011). The Middle of the Pyramid: Dynamics of the Middle Class in Africa, Chief Economist Complex, African Development Bank, Market Brief, April 20 2011.

Western Africa remains a prime target for hydrocarbon (oil and gas) and mineral exploration,[24] yet agriculture constitutes 33 per cent of the sub-regional economy[25] and most countries are heavily reliant on their agricultural sectors.[26] In Liberia and Sierra Leone, agroforestry, fishing and hunting accounted for 72 per cent and 61.5 per cent, respectively, of GDP in 2011.[27] The gap between rural and urban incomes, however, remains wide.[28] Industry and services account for 36 per cent and 31 per cent of growth, respectively,[29] with these activities primarily found in cities and other urban areas, urban-driven growth is increasing in the sub-region.

High levels of urban poverty and inequality (see Section 3.4) suggest that economic growth has not automatically led to widespread social improvements or poverty reduction in the sub-region. This is reflected in the proliferation of urban slums and informal settlements, as well as the absorption of the majority of the labour force into the informal sector, especially in the cities (see Section 3.3). Ghana is the only

▲
Looking lost and haggard, these IDPs have fled from the Islamist rebels in Gao. Instability from conflict may negatively impact the economic performance of the sub-region.
©European Commission DG ECHO/Cyprien Fabre

country in the sub-region reported to have less than half its population living in multidimensional poverty[30] (Table 3.4). In most countries of the sub-region, the percentage of the population living in such poverty is well above 50 per cent. Many (i.e. Benin, Burkina Faso, Guinea, Mali, Niger, Senegal and Sierra Leone; Table 3.4) are in excess of 70 per cent. This might well indicate that in the fast-growing economies of the sub-region the wealthy elites are benefitting more in vast disproportion to the poor.

The proportion of people living on under USD 1.25 per day (Tables 3.4 and 3.5) is generally greater than those who are not. In some instances, those living under USD 1.25 are much more than double the size of the middle class, which is those living on USD 2 to USD 20 per day at 2005 Purchasing Price Parity (PPP).[31] Cape Verde, Côte d'Ivoire, Ghana and Mauritania are exceptions in the sub-region, with a higher percentage of the population classified as middle class. The "floating class" - the sector of the middle class that survives on between USD 2 and USD 4 per day (see Box 1.5) - are highly vulnerable to exogenous shocks and might slip into poverty in response to emergent local, regional or global pressures.[32]

Political instability in Côte d'Ivoire, following a contested 2011 presidential election, led to a 0.4 per cent contraction in the country's economy.[36] A *coup d'Etat* in Mali, during March 2012, crippled central government and was condemned by regional and international agencies, bodies and countries. Guinea-Bissau underwent a *coup* on 12 April 2012,[37] causing the Economic Community of West African States (ECOWAS) to threaten with imposition of sanctions.

The northern regions of Mali have fallen into conflict with rebel groups and there is also conflict between Tuareg-dominated rebels.[38] World Heritage Sites and artefacts in the ancient city of Timbuktu have been vandalized or destroyed, and the conflict threatens border cities in Burkina Faso and Niger. In early 2013, Mali was invaded by militant Muslims to the north who seized cities such as Gao, Kidal and Timbuktu and directly threatened the capital Bamako. Instability from this conflict may lower the economic performance of the sub-region[39] and it is likely that urban areas in northern Mali, Burkina Faso and Niger will absorb some, or many, of the refugees fleeing the conflict.

Global Economic Change

The slow-down in the global economy affected the sub-region, despite relatively strong sub-regional growth, through the subsequent global recession. China, the primary trading partner for a number of ECOWAS countries, has significantly increased import and export trade with the sub-region over the past three decades. Chinese investment in the sub-region accounted for 0.1 per cent of FDI in 1981, whereas in 2008 it was 27.5 per cent.[40] China has specific interests in the petroleum sector in Ghana, Guinea, Nigeria and Senegal. Chinese involvement in the sub-region includes building the "Port of Friendship" in Mauritania, as well as setting up trade districts in Accra, Lagos and Lomé. The Nigerian government has established a free trade zone with China in Lagos' Lekki Peninsula.[41] This 16,000 hectare zone will include a deep water port and is intended to boost local manufacturing in Lagos State, which has a 40 per cent stake in the deal.

Lower growth rates in China and other global trading partners are, however, likely to translate into decreased demand for raw materials (such as oil and timber) from the sub-region. This raises the question of economic stability in the region, since an over-reliance on extracted raw materials for

growth is coupled with low levels of economic diversification. Combined, these factors are likely to increase vulnerability of the sub-region to the vagaries of global markets and the global economic slowdown.

Regional Corridors and Change Factors

Skewed spatial and socio-economic benefits prevail in Western African cities, with the largely poor urban and peri-urban population remaining essentially excluded from socio-economic development opportunities. Special attention must thus be paid to urban development planning and implementation to deal with these imbalances. Corridor developments provide opportunities to improve linkages between urban material and financial flows with peri-urban and rural areas, potentially stimulating regional economies and generating internal economies of scale.

The physical infrastructure required to support sub-regional trade, commerce and human movement is largely absent, a factor which determines the effectiveness of the linkages between cities in the area.

Poor transport systems, in particular, are hampering opportunities for growth that would otherwise be viable. For example, importing goods from outside the sub-region is often more feasible than doing so from within.[42] A rationale for diagnosing physical infrastructure needs for economic growth and productivity goods notes that road networks in the sub-region are presently the worst means of transport and were mainly structured to service colonial trade linkages. Improving road transport can make the largest difference in the region in respect of generating benefits. Therefore, ECOWAS has adopted the Priority Road Transport Programme to improve cross-border movement, part of which will be the development of trans-Western African highways, for example the Lagos-Nouakchott coastal route and the Dakar-Ndjamena Sahel road.[43] The Banjul-Dakar-Touba and Abidjan-Ouagadougou corridors play key roles in urban growth in the region, while the Greater Ibadan-Lagos-Accra corridor - through Nigeria, Benin, Togo and Ghana[44] - generates most of the growth in GDP for Nigeria and Ghana. Corridor development along the Western African coast is now also growing perpendicular to the coast, moving inland.

Urban areas are where forces for regional change thrive. Emergent drivers of regional change[45] include financial and telecommunications services; education (including knowledge-intensive industries); and cultural hubs such as the "Nollywood" film industry of Nigeria. Drivers also include infrastructure development schemes, such as the West African Power Pool (see Text Box 3.2) shared energy strategy,[46] and an increased focus on river transport in cities such as Lagos. Regionally, the need for infrastructure development has been highlighted as falling under the key themes of transport and logistics; regional air transport; port infrastructure and operations; information and communications technologies (ICT); and energy.[47] Intra and intercity infrastructure connects cities to sources of goods; trade; materials (i.e. via transport infrastructures); services such as energy (e.g. hydroelectric power plants) and water (e.g. dams); and to food (i.e. agricultural production areas). Infrastructure is thus critical for development where cities play a key role in driving intra-regional economic growth.

Railways within and between countries of the sub-region are underdeveloped. Presently, four of the 15 ECOWAS countries do not have railways. However, the ECOWAS Railway Master Plan may change that as it has prioritized specific rail linkages for development. The European Union (EU) and donor agencies are also studying the feasibility of developing the "Kaya-Dori-Niamey" and the "Bamako-Bougouni-Ouangolodougou" links. In addition, sub-regional authorities are seeking funds to develop the Ouangolodougou-Sikasso-Bougouni-Bamako line (from Côte d'Ivoire to Mali); the Niamey-Dosso-Kaura Namoda one (from Niger to Nigeria); and the Niamey-Dosso-Parakou link (from Niger to Benin).[48]

Poor sub-regional road and rail interconnectivity hampers port activity. In addition, ports in the sub-region generally struggle to cope with large container vessels due to inadequate berth depth, requiring structured planning and private sector investment.

Regional integration of ICT systems is also considered inadequate and in need of attention to boost trade, customs procedures, immigration, transport and energy services.[49] There is also a specific need to tackle energy capacity and distribution (including linking national electricity grids)[50] for medium-term energy security. Several efforts are under way to improve sub-regional economic diversification and integration, including initiatives by the African Development Bank and various foreign agencies.[51] However, city and sub-city scale infrastructure development is lagging (e.g. port development, road and rail transport networks).

Bureaucratic obstacles to regional integration are also significant. Land ownership and transfer, for example, are hampered by lengthy and often corrupt bureaucratic processes. Sub-regional trade integration and foreign direct investment opportunities are sometimes thwarted by the dual monetary systems of the former French colonies and those outside this franc zone[52].

Migration is a key factor of change in the sub-region, driven by those fleeing economic and climate-related hardships as well as conflict.[53] High mobility levels, three per cent of the sub-regional population, persist.[54] Refugees mainly migrate to destinations within the sub-region,[55] whereas rural migrants often seek to move directly overseas, especially to Europe.[56] Some areas, or countries such as Nigeria, act as "transit zones" for migrants and human trafficking networks.[57] The heterogeneity and diversity of cities favours those who seek to remain undetected, thus cities absorb legal and illegal migrants, refugees and victims of human trafficking. Migration within the sub-region occurs mainly to urban coastal areas[58]. Cities thus become points of confluence between different cultures and peoples, opening up new markets, opportunities for trade and exchange of information.

3.3
Social and Environmental Vulnerabilities

Workers at the 500-year-old dye pits in Kano, Nigeria. In 2009, per capita income in the ECOWAS region was the lowest in Africa. **©Jonathan Riddell.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported, 2.5 Generic, 2.0 Generic and 1.0 Generic license.

Social Vulnerability

Western Africans have experienced deepening poverty and a rise in inequality, especially in the cities, with slum populations of up to 82.1 per cent in Niger in 2005 (see Table 3.7). Cities in the sub-region have low access to piped water, sewerage, fixed line telephones and electricity (Table 3.10). Data on other infrastructure are not readily available but cities typically lack drainage, flood protection, vehicle access and roads, especially in slums and informal settlements.

Per capita income in the ECOWAS sub-region, USD 867 in 2009, was the lowest in Africa, with some 60 per cent of the rural population surviving on around USD 1 per day.[59] Urban poverty rates are lower than rural ones, yet they are nevertheless high. For example, 41.3 per cent of urban Nigerians lived below the poverty line in 2004, (see Section 3.4). Ghana had the lowest urban poverty rate in the region (in 2006), at 10.8 per cent (see Table 3.9). Inequality in the sub-region's countries and cities is also significantly high (see Table 3.8). In 2006, Nigeria's income inequality stood at 0.54 and at 0.64 for is most populous city, Lagos.[60] In Côte d'Ivoire, Liberia and Mali the proportion of people informally employed in the non-agricultural sector was 69.7 per cent, 49.5 per cent and 71.4 per cent, respectively.[61] Table 3.6 provides an indication of the level of informal employment as a percentage of non-agricultural employment for a number of the sub-region's cities and data indicate that more women are employed in the informal sector.[62]

TABLE 3.6: **INFORMAL EMPLOYMENT AS A PERCENTAGE OF NON-AGRICULTURAL EMPLOYMENT IN SELECTED WESTERN AFRICAN CITIES.**

Cities	Total	Women	Men
Niamey	76.2	83.4	71.9
Abidjan	79.0	89.7	69.8
Dakar	79.8	88.0	73.9
Ouagadougou	80.2	86.9	75.4
Cotonou	81.2	89.3	72.1
Bamako	82.1	91.1	74.9
Lomé	83.1	90.3	75.1

Source: Herrera et al 2011.

Adult illiteracy in the sub-region is around 45 per cent,[63] constraining individual capacity to engage in formal sector activities in which larger global interests invest. Gender inequalities in Western African cities, such as with respect to earnings – where women generally earn lower incomes than their male counterparts[64] – prevail. This is despite (and in contrast to) increasing proportions of women in parliament, as government officials and as administrators as well as managers in the private sector.[65]

In 2010, Nigeria's GDP growth was 8.1 per cent.[66] Nigeria aims to become one of the top 20 performing economies on the globe by 2020, and to have a per capita income level above USD 4,000 per annum,[67] which requires generating a GDP of USD 900 billion. In order to fulfil this vision adequate funding of infrastructure in critical sectors, transparency and good governance, population control and physical planning of settlements, particularly in areas where productive economies are located is required.[68] This implies that urban development in particular will require special attention to infrastructure upgrades as well as new modes of urban governance and planning.

New infrastructures should also be accessible to the urban poor, and not just physically. For example, Lagos's Bus Rapid Transit (BRT) system (see Box 3.3) has attracted mainly the middle band of the economic spectrum, and much fewer from both the poor and the wealthier car owners. The poorest urban dwellers mainly use midibuses, indicating that the BRT service is still beyond the reach of the poor.[69]

Deployment of new physical infrastructure and services such as transport, energy, waste, water and sanitation, should further focus and capitalize on existing opportunities and challenges. These include the youth bulge; deficits such as intra- and inter-city infrastructure, food and energy insecurity; and trends such as technology uptake, urbanization, growing middle class, increasing consumer base as well as growing economic sectors. Public transport systems, for example, have high employment creation potential. Deployment of infrastructure and service provision requires greater effort for formalized inclusion of society in development projects at local and larger scales of governance. Development initiatives that attend to specific local factors are thus the most likely to improve social well-being in the sub-region's cities.

Youth radicalization, gangs, unemployment, child labour and generational discontinuity are among the many critical challenges, but also offer opportunities for speeding up socio-economic and cultural transitions to greater stability. With the majority of Western Africans projected to reside in cities between 2020 and 2025 (Table 3.1), regional stability will depend on urban socio-economic and political security. In turn, the deep and often entrenched challenges[70] within cities of the sub-region present a complex mix of conflicting and coalescing political, sociocultural and socio-economic factors for urban designers, planners and managers to accommodate responsive urban development policies and strategies. The social vulnerabilities need to be a core focus of physical and social infrastructure development planning and implementation, opening up spaces for innovation and for new state, private sector and civil society value chains to be laid to service social as well as economic agendas.

Vulnerability of Environmental Resources

Western Africa's rapidly growing cities are highly vulnerable to environmental change. At the same time, unplanned settlement and sprawl, combined with inadequate infrastructure already place high stresses on ecosystems and resources. For example, parks and recreational gardens in some cities (including Accra, Freetown, Ibadan, Kano, Kaduna, Kumasi and Lagos) have been converted into waste dumps[71] and increasing population density can put forests at particular risk of biodiversity loss.[72] The long-term sustainability of the sub-region's cities depends partly on adequate maintenance and protection of the ecosystems of rivers, wetlands, estuaries, coastlines, mangroves and coral reefs. Degradation of these ecosystems can lead to increased loss of their functions and services that are vital to ensuring food, water and other critical securities.

Urban environmental vulnerability increases with absent, or inadequate, waste flow management. This is often intensified in slums and informal settlements, leading to increased vulnerability to disease and injury. Pollution caused by the activities of oil companies in the sub-region, especially in the Niger Delta, affecting cities such as Yenagoa, raised

the ire of local communities because it endangered their traditional livelihoods. This resulted in open conflict between the Movement for the Emancipation of the Niger Delta, oil companies and the Nigerian government. Mitigation against potential ecological disasters that may result from the expansion of the oil industry is thus a key priority.

Decoupling, or separating, growth from resource depletion and environmental degradation is required to achieve urban sustainability. This calls for cleaner systems of production; more energy and material-efficient infrastructures; and, where appropriate, resilient, decentralized, closed-loop systems. Decoupling also requires sound understanding of material flows through urban systems, so that empirical analyses can be utilized in planning and development.[73]

Vulnerability to Climate Change

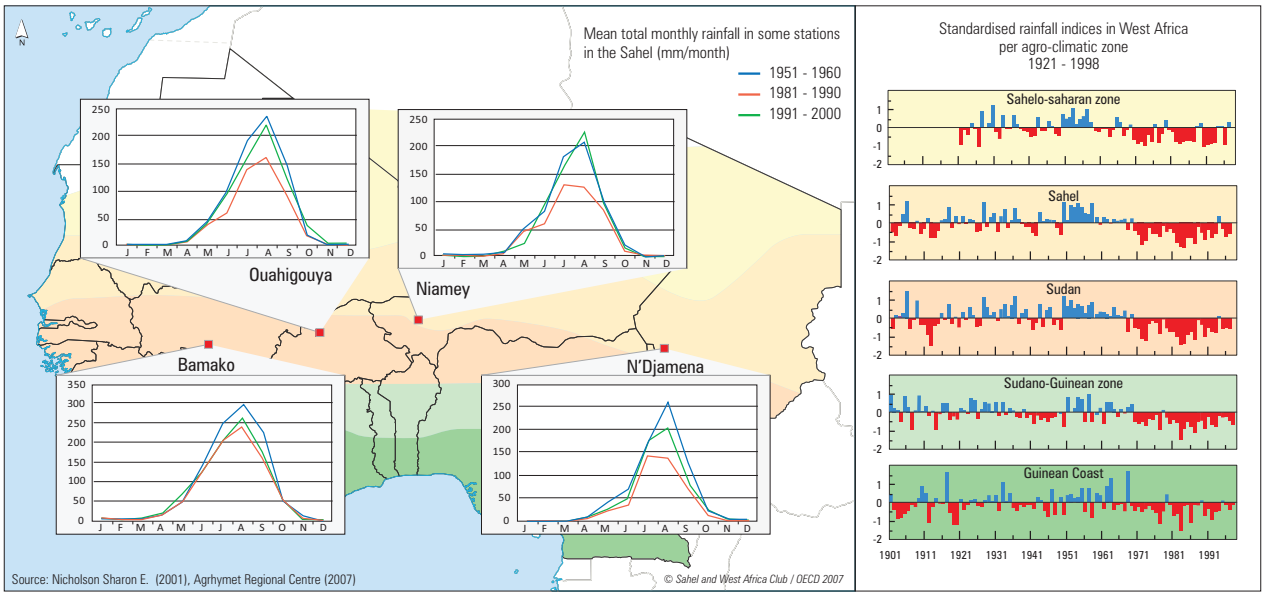
Western Africa faces climate change-associated challenges such as soil erosion; storm surges and saline intrusion in coastal areas; urban flooding; higher ambient temperatures; more variable precipitation patterns; as well as desertification. Desertification is most pronounced in the northern parts of the sub-region. Climate change impacts on temperature and precipitation may further exacerbate the vulnerability of urban environments. Climate change impacts on freshwater resources may translate into wetland and natural habitat loss and increased desertification[74] which, in turn, may threaten livelihoods in riparian and coastal cities. However, there exists a fair amount of disagreement regarding model predictions for the sub-region.[75] Projected climate change impacts for the sub-region are not considered sufficiently reliable.[76] Historical trends do, however, provide an idea of how weather conditions have unfolded in the region, as explained below.

Temperatures

Most climate models indicate increased summer temperatures and a higher occurrence of seasonal very high temperatures.[77] Models forecast temperature increases of 3°C

▲
Residents carrying personal belonging away from flooded areas in Niamey, Niger. In the past two decades, the intensity and severity of flooding has increased. **©OCHA/Franck Kuwonu**

FIGURE 3.2: **MEAN TOTAL MONTHLY RAINFALL IN FOUR AFRICAN CITIES FROM 1950-2000 AND STANDARDIZED RAINFALL INDICES FOR FIVE AGRO-CLIMATIC ZONES IN WESTERN AFRICA BETWEEN 1921 AND 1998.**



Source: Sahel and West Africa Club (SWAC) (2008). Climate and Climate Change, Atlas on Regional Integration in West Africa, Environment Series, ECOWAS-SWAC/OECD. Map 5, accessed from www.oecd.org/swac/publications/40121025.pdf on 14 May 2013.

to 4°C by 2100, in excess of global temperature increase projections. Historical data (1970-2006) show an approximate increase of 1°C in the Sahel[78] between May and October (a critical period for agricultural production). Arid areas will have longer, more frequent dry spells[79], while wet areas will become wetter. Despite temperature decreases in southern Mali, around the capital Bamako,[80] in the north of the country and Mauritania increases of between 1.5°C and 2°C have been observed over the same period (1970-2006), whereas, on average, these countries (as well as northern Niger) have experienced increases from 1°C to 1.5°C.[81] Temperatures have risen by between 0.5°C and 1°C in most of Niger, southern and central Burkina Faso, parts of Cape Verde, and on the coast between Senegal and Togo.[82] For cities, the urban heat-island effect as well as increased vulnerability to air and land pollution are of critical concern.

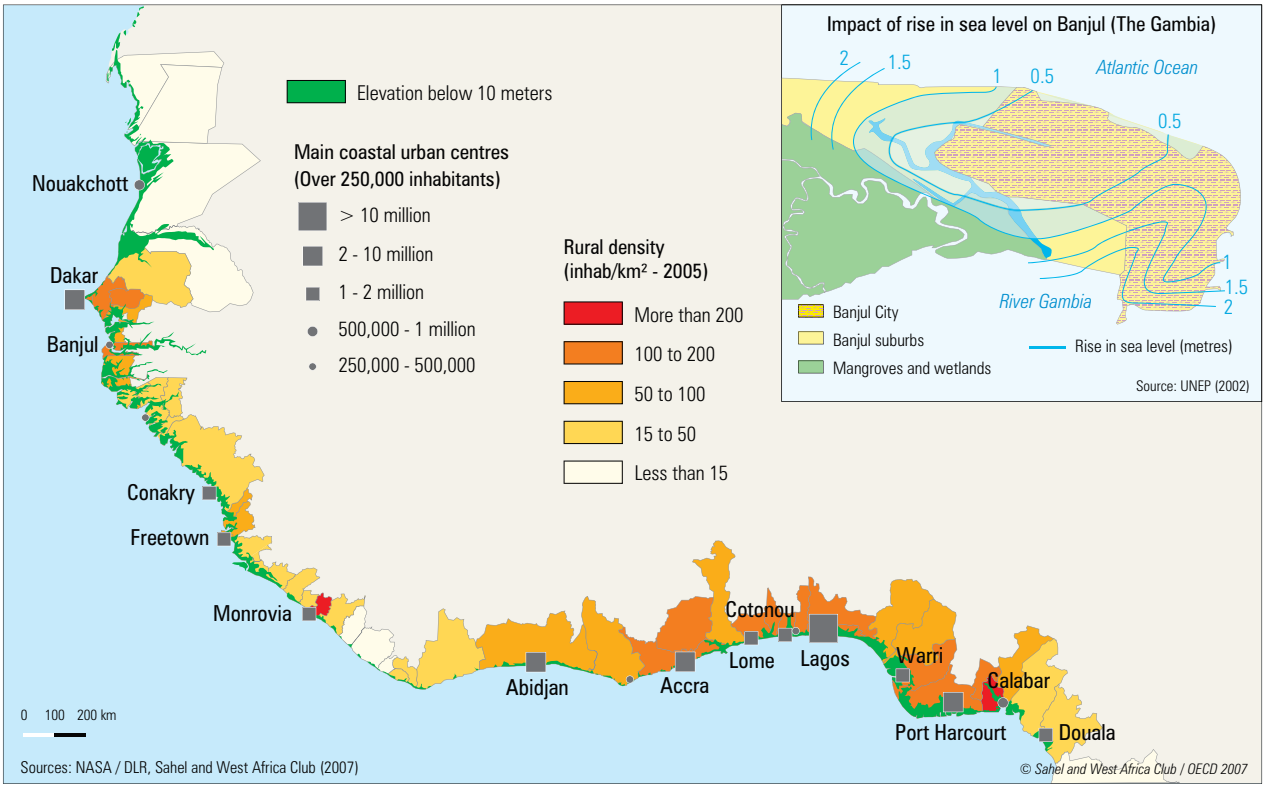
Rainfall

In the Sahel, mean seasonal rainfall dropped between 1900 and 2009,[83] with steeper declines from 1970 onwards. Between 1970 and 2006, from May to October, rainfall declines of more than 50 mm were observed in the border region of Burkina Faso and Ghana, as well as in the city of Bobo-Dioulasso in Burkina Faso and the southern coasts of Ghana and Côte d'Ivoire.[84] For the same period, rainfall levels remained relatively constant in the majority of Cape Verde, Côte d'Ivoire, Ghana, south-western Mali, Mauritania, central Nigeria, Niger, southern Burkina Faso and northern Guinea.[85] Rainfall has risen in most of the remaining coastal areas, with seasonal increases of between 50 and 100 mm from May to October occurring in parts of Benin, Guinea, Guinea-Bissau, Togo, southern Mauritania, Senegal, Sierra Leone and southern Nigeria, north and west Côte d'Ivoire and the Sahel regions of northern Burkina Faso.[86] Increases of between 100 mm and 250 mm have occurred in Côte d'Ivoire, Gambia, Guinea, Guinea-Bissau, Mali, Mauritania, Niger, Senegal and areas in Benin, Togo, Burkina Faso and Nigeria.[87] The region around the city of Kano in Nigeria is the only area that received rainfall in excess of 250 mm over the selected duration.[88] The mean total monthly rainfall for Bamako, N'Djamena, Niamey and Ouahigouya is shown in Figure 3.1, as are standardized rainfall indices for the five agro-climatic zones.[89] It is clear that rainfall is at best uncertain, and at worst appears to have reduced over the latter period. The uncertainty in precipitation is likely to adversely affect food production and supply to urban areas, whether due to drought, flooding or through changes and uncertainty in seasonal precipitation patterns.

Flooding

Coastal urban populations in the sub-region are particularly vulnerable to inundation due to climate change. However, urban flooding is also a serious problem inland and throughout much of the sub-region.[90] In the past two decades, the intensity and severity of flooding has increased[91] and cities such as Kano, Niamey and Lagos are at high risk. Central Sahel was worst affected by flooding between 1985 and 2009, while large parts of southern Burkina Faso, northern Nigeria

MAP 3.3: **VULNERABLE URBAN CENTRES AND COASTAL REGIONS IN WESTERN AFRICA**



Source: Sahel and West Africa Club (SWAC) (2008). Climate and Climate Change, Atlas on Regional Integration in West Africa, Environment Series, ECOWAS-SWAC/OECD. Map 10, accessed at: www.oecd.org/swac/publications/40121025.pdf on 14 May 2013.

and south-western Niger endured repeated floods. Border regions – spanning Benin, Niger and some parts of Nigeria – also experienced increasing flood incidence.[92]

Drought and Desertification

The northern regions of Western Africa bear the greatest drought burden. The Sahel and the Horn of Africa have been affected by drought since the 1960s.[93] Rapid and large-scale desertification of the Sahel, a product of declining rainfall, has resulted in its southward migration, threatening Western Africa's northern countries.[94] Mali, Mauritania, Niger and Senegal are all affected by environmental and weather changes in the Sahel. Desertification causes spatio-temporal vegetation changes as a result of the Sahel's southward advance (see also Section 3.6). Northern Mali experiences rainfall uncertainty and frequent drought,[95] while the vulnerability of the Inner Niger Delta (in Mali) has also been increased as a result of climate change impacts. Ecosystem degradation now threatens traditional livelihoods and their sustainability.[96]

Sea Level Rise

In the south and south-west of Western Africa are many coastal, high-density urban areas that are vulnerable to projected increase in sea level, coastal erosion and storm surges. In the long term, with 40 per cent of the sub-region's population living in coastal cities, the threat of flooding from increased rainfall and sea level rise is likely to put more pressure on these communities (see Map 3.1 and Section 3.6).

The coastline between Douala and Dakar (Map 3.1) hosts 12 townships, with populations of over 1 million each,[97] that are highly vulnerable to the impacts of climate change. Projected sea level rise of 0.5 m by 2100 will result in great losses of coastal land by erosion and submergence.[98] Agricultural areas, and cities such as Abidjan, Accra, Conakry, Dakar, Lagos and Lomé (i.e. the sub-region's six largest cities); smaller cities such as Banjul, Bissau, Cotonou and Porto Novo; and other densely populated areas along the Saloum Delta, Senegal River, and the Volta Delta[99] will likely be affected by sea level rise and saline intrusion into coastal aquifers and agricultural areas.[100] Impacts on estuarine functions, fisheries and coastal agriculture will also impact negatively on coastal cities and areas.[101] Ecosystem degradation of mangrove forests, for example,[102] further increases vulnerability of coastal urban areas to storm surges, rainstorms and oceanic flooding. The populous coastal cities of Western Africa are extremely vulnerable to projected sea level rise impacts.[103]

Climate Change, Disease, Disasters and Extreme Events

The sub-region's vulnerability to extreme events, as well as diseases, is likely to be exacerbated by climate change, as

well as the conditions under which urbanization is unfolding (for example, informal settlements on unsuitable land that lack services and critical infrastructure). Spatial shifts in malaria, rift valley fever and yellow fever are likely to result from climate-induced changes. In drying areas of the Sahel, malaria infection may actually decline as natural habitats for mosquitoes become unsuitable and as human populations decline.[104] Between 2050 and 2080, the drying climate of most of the Western Sahel and South-Central Africa is projected to become unsuitable for malaria transmission.[105]

A lack of resources, infrastructure, skills and institutional capacity renders the sub-region's cities (especially coastal cities) more vulnerable than they need be, or should be, to climate change and associated disaster risks. In the absence of effective centralized systems, the initiative for coping with the effects of climate change and natural disasters will reside with local authorities. Disaster management, however, requires integrated local, national and regional coordination agencies in place, since natural catastrophes can spread across borders. Local agencies are also required for on-the-ground disaster management to ensure readiness and response at that level. It is hence critical for leaders and managers of all cities to combine adaptive disaster risk management strategies and include these in all urban planning scenarios and policies to improve resilience of the sub-region's cities.

Agriculture and Food Production

Food insecurity is a real threat to the sub-region[106] since food production will be affected by climate change. Coastal cities and agricultural districts will need to cope with these changes. Extreme events such as flooding already affect cities such as Accra and Lagos[107] and flooding in the region in 2010, for example, led to major crop losses on many hundreds of thousands of hectares of agricultural land in Benin, Burkina Faso, Gambia and Nigeria.[108]

In Mali and Mauritania, intensified drought and desertification is predicted to increase pressures on water, soil and arable land resources. Nouakchott will likely absorb significant shares of the disturbances that occur beyond their borders, impacting on food security in northern Western Africa and probably leading to increased pressures on cities. Such pressures might include migration of internally displaced persons to urban areas; food price increases; and increased conflict over urban and agricultural land.[109] Crop insect pests, like desert and Senegalese locusts, may also increase as a result of changes in weather patterns.[110] A 2°C rise in temperature could lead to reduced millet and sorghum yields in Burkina Faso and Niger of 15-25 per cent,[111] while maize would fall by 5 per cent.[112] In the short term, however, rice production is expected to grow by 10-35 per cent.[113] Cereal productivity in the Sahel between Niger and Senegal is set to decrease by 20-50 per cent by 2050.[114] Food production in Western Africa is projected to fall by 2-4 per cent by the year 2100, as a result of the effects of climate change induced weather variability, deeply threatening food security.[115]

▲ Over 700,000 people were affected by the 2012 food crisis in Mauritania and 18 million across West Africa and the Sahel region. **Pablo Tosco/Oxfam.** Licensed under the Creative Commons Attribution-NonCommercial-NoDerivs 2.0 Generic License.

Urban Agriculture

Global grain prices were 12 per cent higher in October 2012 than during the same month in 2011 and, in general, food prices were higher by 7 per cent.[116] Urban agriculture in Africa is often essential to the nutritional needs of its residents and, to some extent, provides a buffer to global food price fluctuations. Yet urban Western African small-scale agricultural producers are often highly vulnerable since land tenure is insecure and informal, and they can be easily evicted, as has occurred in Abidjan, Bissau and Lagos.[117]

Due to bad soil management practices, market gardeners often use excessive amounts of pesticides (as in Abidjan) inadequately decomposed organic fertilizer[118] or polluted grey and wastewater (as in the Ghanaian cities of Takoradi and Tamale; see Box 3.2).[119] In Côte d'Ivoire and Gabon, technical support to urban market gardening is particularly weak.[120]

Informal irrigation practices in urban and peri-urban agriculture dominate the sub-region and pollution is a major problem.[121] Surface and groundwater resources are used for irrigation and policies that recognize the vital role of informal urban agriculture need also to accept and encourage water recycling. In Accra, where farmers were previously fined for such practices, grey water reuse for irrigation of root vegetables is now being integrated into formal systems by the Accra Working Group on Urban and Peri-Urban Agriculture.[122]

BOX 3.2: **TAMALE: SAFE REUSE OF GREY WATER FOR URBAN AND PERI-URBAN AGRICULTURE**

Many local authorities are showing increased interest in the potential benefits of urban agriculture, which include: food security; public and individual health; ecological stability; and employment. Using grey water has become an alternative where there is a lack of, or low, access to potable water services in urban, peri-urban and rural areas. However, the use of grey and black water, without recourse to risk-reducing practices, poses serious health risks to farmers and consumers. Managing health risks and facilitating the adoption of adequate technologies, while optimising their benefits, is critical to ensure sustainability. Developing programmes to guide the treatment and use of wastewater for agriculture in urbanized areas is essential.

▲ Market in Tamale, Northern Ghana. **©Corine 't Hart.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

Tamale, capital city of Ghana's Northern Region and the third most populous settlement in Ghana with 537,986 people in 2012, is fast urbanizing with a 2.7 per cent growth rate. As a nodal city which serves as a convergence zone, Tamale has used grey water for peri-urban crop production for over 25 years. The city lies in the Guinea Savannah agro-ecological zone, where gardening is an important source of vegetables, balanced diets and urban food security for residents, especially the poor. Garden crops include maize, cabbage, carrots, tomatoes, lettuce, spring onion, papaya and bananas. Approximately one-third of Tamale's population is served with potable water, while the rest depends on dams and dugouts that retain runoff from the previous rainy season. The total area under irrigation by 2005 was around 33-40 ha in Tamale and 70 ha on the city's fringe.

Limited groundwater availability in Tamale and other parts of Ghana forces vegetable farmers to use almost any available water, regardless of source. Therefore, untreated wastewater is commonly used in irrigated urban farms. Wastewater, primarily from domestic sources, contaminates water bodies in and downstream of the cities, with irrigation water analyses showing high levels of nitrate (54 mg/L), chloride (126 mg/L) and faecal coli form (4.528×10^3 cfu/100 ml). The potential transmission of excreta-associated diseases is high, with high faecal contamination levels measured in irrigation water and vegetables (3-8 log-units). The practice is largely informal and unrestricted and street food containing raw lettuce, for example, is available citywide. There is, however, increasing awareness and recognition of associated health risks, such as post-harvest contamination and diarrhoeal diseases. Regulatory bylaws exist but are poorly enforced.

52 per cent of crop farmers depend on polluted water sources, however over 85 per cent have no knowledge of safe irrigation methods. Aware of public health concerns regarding food safety, farmers have built consensus with other stakeholders to protect urban water sources from pollution. Measures have included Bucket Kit Drip Irrigation; Clay Pot Sub-Surface Irrigation; better handling and washing of crops; and enhanced information flow between crop value-chain actors and consumers.

Safe agricultural production in the Tamale area requires the collaboration and training of urban agriculture stakeholders across the entire crop value chain. As urban agriculture is crucial for the livelihoods of farmers in the Tamale Municipality and also contributes significantly to urban food security, the practice should be supported. In this respect, all major stakeholders, such as farmers, local authorities, government institutions and researchers should adopt strategies to ensure safer practice.

Note: The revised World Health Organization Guidelines for the Safe Use of Wastewater, Excreta and Grey Water in Agriculture and Aquaculture were published in 2006, available at: www.who.int/water_sanitation_health/wastewater/gsuww/.

Sources: Abubakari, A.-.H., Husseini, R. and Addi, P.E. (2011). Strategies for Minimising Health Risks of Wastewater for Poor Farmers in the Urban Environment. Acta Horticulturae (ISHS) 911:123-132. All Africa Horticultural Congress. Available at: www.actahort.org/books/911/911_13.htm. Accessed 6 June 2013; Amarchey, C.A. (2005). Farmer response to urban pressures on land, the Tamale experience.Urban Agriculture Magazine 15:39-40; Obuobie, E., Keraita, B., Danso, G., Amoah, P., Cofie, O.O., Raschid-Sally, L. and P. Drechsel. (2006). Irrigated urban vegetable production in Ghana: Characteristics, benefits and risks. IWMI-RUAF-CPWF, Accra, Ghana: IWMI, 150 pp; Water for Urban Agriculture Urban Agriculture magazine ISSN 1571-6244, No. 20, September 2008; WHO, 2006. Guidelines for the safe use of wastewater, excreta and grey water: Wastewater use in agriculture (Volume 2). WHO: Geneva, 219 pp; WHO; Report of the First Consultative Workshop on the WHO/IDRC Project "Non-treatment Options for Safe Wastewater Use in Poor Urban Communities" Accra, Ghana 4-7 December 2006; Who; Report of the Second Consultative Workshop on the WHO/IDRC Project "Non-treatment Options for Safe Wastewater Use in Poor Urban Communities" Dakar, Senegal 26-29 November 2007; WHO; Report of the Third Consultative Workshop on the Who/Fao/Idrc Project "Non-treatment Options for Safe Wastewater use in Poor Urban Communities" Amman, Jordan 7-10 March 2010; www.ruaf.org/sites/default/files/Policy%20Brief.pdf; www.ghanaweb.com/ghanahomepage/geography/tamale.php.

3.4
Urban Planning and Resource Management

▲ Bissau, capital of Guinea-Bissau. Guinea-Bissau's GDP per capita is one of the lowest in the world. **©Nammarci.** Licensed under the Creative Commons Attribution 3.0 Unported license.

Urban Governance in Western African Cities

Resource pressures that threaten urban sustainability are referred to as urban resource pressures and include those to social, economic, environmental, physical and political stability.[123] Land pressure, resulting from high urban growth rates, is significant in the sub-region. Western African cities typically consist of middle class residential areas surrounding central cores containing commercial, political and economic functions. Land values in urban centres are prohibitive to low-income residents who are forced to live in the peripheries and ecologically sensitive natural habitats such as wetlands and estuaries. This increases health risks, food insecurity and susceptibility to extreme events, such as flooding, for the most vulnerable of urban dwellers.

Lack of Economic Growth and Institutional Capacity

Sub-regional urban economic growth can scarcely keep up with that of the population. Poverty, unemployment, inequality, spatial segregation[124] and socio-economic marginalization between income groups are clear in urban areas. In a sub-region plagued by internal strife, corruption, war, child trafficking and weakened institutional capacity to govern,[125] rapid urban change and population growth has resulted in high levels of informality. The youth bulge and resource limitations threaten the social, economic and environmental sustainability of Western African cities.[126] Natural population growth is responsible for the rapid growth of the cities, but migrants also prefer capitals as destinations as they are more likely to be employed once living there.[127] For example, ex-combatants are often reluctant to return to rural agricultural ways, turning instead to urban life.[128]

National legislation in the sub-region makes provisions for environmental management and urban planning.[129] Formal systems of governance, however, at national or city scales, are over-bureaucratized and tedious to negotiate for most people, opening up opportunities for corruption and exploitation. This is exacerbated where urban formal systems collide with

the informal and where hostility, control and repression characterize the relationships between them.[130]

Fiscal Decentralization

Generally, the institutional and financial capacities in the sub-region's national and city governments are inadequate to meet primary infrastructure challenges (see Table 3.10). Fiscal decentralization has been slow to follow trends of decentralized urban governance, leaving local authorities financially less capable of guiding local development. Local authorities are restricted to playing limited roles in urban development planning and implementation, reducing their ability to plan effectively for future challenges and weakening regional integration. Fiscal decentralization thus requires revision and reorganization geared towards streamlining integration, transparency and delivery, while ensuring the development of skills and institutional capacity. Decentralized technologies and infrastructure can boost local scale resource security and resilience to exogenous shocks and changes. Regional and international cooperation will also be necessary if urban resource pressures and threats (specifically climate change and natural disasters) are to be tackled satisfactorily.

Housing, Land and Services

Demand for land and housing remains high in urban Western Africa. Challenges associated with obtaining formal land ownership force most poor urban residents into the informal market. Uneven and unplanned urban growth place pressure on resources and limit the capacity to deliver services and infrastructure. Informal settlements often sprawl into low-lying wetlands, flood plains and estuaries, threatening the integrity of ecosystems needed for flood protection and nutrient filtering. This leaves these cities more vulnerable to the effects of flooding and loss of water quality.

Housing and land demands in the sub-region's cities should be met through a mix of informal and formal sector governance measures and institutional capacity would need to be developed to cope with innovative governance frameworks. Mixing marginal formal systems and dominant informal ones, for example, may aid transition towards full formal land and home ownership and acquisition in the longer term. Secondary cities can also relieve the population pressure on larger metropolitan areas. Large-scale housing projects may be able to meet the demand at low-income levels. Where integrated service provision can be improved

▲ Monrovia, Liberia's most populous city. The picture shows the main highway as well as two large slum settlements near the harbour. In 2007, Liberia had the highest poverty rate in the sub-region, with 55.1 per cent of its urban population living below the national poverty line. **©jbdodane.** Licensed under the Creative Commons Attribution 2.0 Generic license.

- for example, through decentralized governance, revenue collection, and decentralized and semi-decentralized infrastructure - this can improve household resilience to the costs of energy, water and food. This can help to free up household budgets to contribute to property taxes in the medium and long term, thereby increasing city revenues. It is critical to alleviate urban resource pressures at the household level by building local-scale resilience.

Poverty and Inequality

The vast majority of urban residents in the sub-region lives in slums (Table 3.7). Despite a wealth of resources, the region has struggled to achieve sociopolitical and economic stability, and this is reflected in high-level poverty and inequality in the cities.

Local gender differentiators as in Ghana possibly apply to the sub-region at large. The percentage of Ghanaian women-headed households, with one, two and three shelter deprivations was 38 per cent, 34 per cent and 51 per cent, respectively in 2003.[131] By comparison, the general distribution of shelter deprivations in Ghanaian households in 2005 was 29.9 per cent, 9.9 per cent and 5.8 per cent, respectively.[132]

Accra (Ghana) and Abidjan (Côte d'Ivoire) are some of the sub-region's most unequal cities although, at country level, Gini coefficients for Côte d'Ivoire and Ghana were lower (Table 3.8). Lagos has the highest levels of inequality (at 0.64); a phenomenon that is more prevalent in wealthier countries, reflecting a trend similar to that observed in Cape Town and Johannesburg (Republic of South Africa) and Luanda (Angola).

Urban poverty rates (Table 3.9) are generally high in Western Africa. Liberia had the highest rate, with 55.1 per cent of this population living below the national poverty line in 2007. The lowest, 10.8 per cent, was recorded in 2006 in Ghana (Table 3.9). Many urban households and businesses exploit informal means of generating revenue to beat poverty. In the absence of socially useful institutions, the informal sector is a safety net, albeit an exploitative one, since child labour, for example, is viewed by some families as justifiable.

Access to Services

City-level data on access to infrastructure services (Table 3.10) provide an indication of general trends and indicates levels of access to services by urban residents. Piped water access is relatively widespread in Dakar (87.8 per cent) and Abidjan (83.3 per cent) while for Monrovia it is 8.4 and Lagos 5.4 per cent. Sewerage coverage is very low, with only Dakar and Lagos exceeding 50 per cent while Nouakchott had only 2.8 per cent coverage in 2001. The lack, or deficiency, of access to water and sanitation in Western African cities is likely to be a health insecurity multiplier in the sub-region.

With the exception of Abidjan (just under 50 per cent in 2005), the number of fixed-line telephones is very low in the sub-region and this perhaps explains the high levels of mobile coverage. Access to electricity varies across the region with Accra, Lagos, Dakar and Conakry well above 80 per cent and only Monrovia lagging with 8.1 per cent in 2007.

TABLE 3.7: **WESTERN AFRICA - PERCENTAGE OF URBAN POPULATION LIVING IN SLUMS**

Country	1990	1995	2000	2005	2007
Benin	79.3	76.8	74.3	71.8	70.8
Burkina Faso	78.8	72.4	65.9	59.5	59.5
Cape Verde	--	--	--	--	--
Côte d'Ivoire	53.4	54.3	55.3	56.2	56.6
Gambia				45.4	
Ghana	65.5	58.8	52.1	45.4	42.8
Guinea	80.4	68.8	57.3	45.7	45.7
Guinea-Bissau	--	--	--	83.1	--
Liberia	--	--	--	--	--
Mali	94.2	84.8	75.4	65.9	65.9
Mauritania	--	--	--	--	--
Niger	83.6	83.1	82.6	82.1	81.9
Nigeria	77.3	73.5	69.6	65.8	64.2
St Helena	--	--	--	--	--
Senegal	70.6	59.8	48.9	38.1	38.1
Sierra Leone	--	--	--	97.0	--
Togo	--	--	--	62.1	--

Source: Global Urban Indicators (GUI) 2009, see Table 7

TABLE 3.8: **SELECTED CITY INCOME AND CONSUMPTION GINI COEFFICIENTS IN WESTERN AFRICA**

Country	City	Year	City Gini Coefficient	Country Gini Coefficient
Benin	--	2007	--	0.47 (c)
Burkina Faso	--	2003	--	0.48 (c)
Côte d'Ivoire)	--	2008	--	0.41 (i)
Côte d'Ivoire	Abidjan	2008	0.5 (i)	0.44 (i)
Ghana	--	2006	--	0.42 (i)
Ghana	Accra	1992	0.5 (i)	--
Guinea	--	2007	--	0.39 (i)
Guinea-Bissau	Bissau	2006	0.37 (c)	--
Liberia	--	2007	--	0.38 (i)
Mali	--	2010	--	0.33 (i)
Mauritania	--	2008	--	0.40 (i)
Niger	--	2008	--	0.34 (i)
Nigeria	--	2010	--	0.48 (i)
Nigeria	Lagos	2006	0.64 (i)	0.54 (i)
Mauritania	--	2008	--	0.40 (i)
Mauritania	--	2004	--	0.39 (c)
Senegal	--	2005	--	39.2 (i)
Senegal	Dakar	2001/2	0.37 (c)	--
Sierra Leone	--	2003	0.42 (i)	--
Sierra Leone	Freetown	2002	0.32 (c)	--
Togo	--	2006	--	0.34 (i)
Togo	Lomé	2006	0.3 (c)	0.31 (c)

Sources: Global Urban Indicators (GUI) 2009, Tables 26 and 27; and World Development Indicators 2012
**(i) income inequality; (c) consumption inequality.*

TABLE 3.9: **URBAN POVERTY RATES BELOW NATIONAL POVERTY LINES**

Country	Year	Urban Poverty Rates Below National Poverty Line (Percentage)
Benin	2003	29.0
Burkina Faso	2009	27.9
Cape Verde	2007	13.2
Côte d'Ivoire	2008	29.4
Gambia	2010	32.7
Ghana	2006	10.8
Guinea	2007	30.5
Guinea-Bissau	2002	51.6
Liberia	2007	55.1
Mali	2010	18.8
Mauritania	2008	20.8
Niger	2007	36.7
Nigeria	2004	43.1
Senegal	2005	35.1
Sierra Leone	2003	47.0
Togo	2006	36.8

Source: World Development Indicators (WORLD BANK WDI) 2012, Table 2.7

TABLE 3.10: **ACCESS TO SERVICES FOR SELECTED CITIES IN WESTERN AFRICA (PERCENTAGE OF HOUSEHOLDS)**

Country	City	Year	Piped Water	Sewerage	Telephone	Mobile	Electricity
Benin	Porto-Novo	2006	64.1	--	8.1	57.3	66.9
Burkina Faso	Ouagadougou	2006	39.4	4.6	17.3	62.8	61.6
Côte d'Ivoire	Abidjan	2005	83.3	42.7	49.5	0	95
Ghana	Accra	2008	37.3	37.1	11.1	89.5	90.8
Guinea	Conakry	2005	45.2	11.1	28.9	--	94.5
Liberia	Monrovia	2007	8.4	34.4	--	70.8	8.1
Mali	Bamako	2006	41.2	12.2	19.6	61.2	72.1
Mauritania	Nouakchott	2001	27.8	4.8	7.2	--	47.2
Niger	Niamey	2008	42.3	10.8	6.5	47.7	81.1
Nigeria	Lagos	2008	5.4	56.3	7.4	98	98
Senegal	Dakar	2005	87.8	78.3	30.0	54.2	89.5
Togo	Lomé	2006	14.3	27.9	10.9	56.1	71.6

Source: Global Urban Indicators (GUI) 2009. Table 12.

The cities listed in Table 3.10 are largely those that are primate and it is likely that the levels of access to basic services in secondary cities and smaller towns will generally be lower. With basic services unmet in many cities of the sub-region, the implications for liveability and sustainability of the urban centres are dire. Urban population expansion has outrun the ability of city and local governments, with strained budgets, to respond.[133] Informal and private sector service provision fills the vacuum that is left behind by the lack of services delivered.

The scale of investment required to meet existing infrastructure deficits and future needs in the sub-region's cities is staggering, providing a challenge that demands regional and international cooperation. The cost of physical infrastructure is likely to be much higher in cities that need to improve resilience to climate change impacts and disasters such as floods or coastal storm surges.

There is great potential scope for infrastructure financing in the region. As countries such as Nigeria have shed their debt burden, scope for borrowing has improved. Global and regional partnerships (e.g. World Bank and African Development Bank, global donor foundations) are required to meet the urban infrastructure and services challenges in Western Africa, and the large resource wealth of the region should be leveraged to enable this. China has already struck deals with some African countries where the building of infrastructures (e.g. road and rail) has been traded for agricultural land rights. Moreover, China's willingness to engage in infrastructure-oriented projects improves scope for importing and transferring civil (and other) engineering skills to the sub-region.

Water and Sanitation

Provision of drinking water has generally improved for most Western African countries. However, urban households' water connections and provision of sanitation services are still lacking, with notable declines in Ghana (41-30 per cent), Nigeria (32-11 per cent) and Liberia (21-3 per cent) between 1990 and 2008. Data further indicate deficient household water supply infrastructure, as most countries in the sub-region, with the exception of Senegal (74 per cent) and Côte d'Ivoire (67 per cent) had less, or much less, than 50 per cent household connections to improved drinking water in 2008. There is also an apparent lack of institutional capacity to implement, maintain and upgrade urban water and sanitation services.[135] Diarrhoea and related disorders decrease significantly with provision of adequate sanitation and drinking water to slums and informal settlements, yet inadequate provision of urban water and sanitation remains a major driver of health challenges, especially for infants and children.[136] Building and operating wastewater plants is costly, and a large amount of household sewage is disposed without environmental or health considerations. Potential does exist for decentralized processing of sewage into gas for fuel, to reduce the cost of centralized sewerage plants and to close waste loops (see Energy and Waste Management within this chapter).

The lack of adequate water and sanitation infrastructure capacity leaves urban dwellers dependent on private and informal providers who supply the majority of the poor residents. The challenge of ensuring drinking water and sanitation in the sub-region is an urban and regional challenge, requiring large-scale effort and coordination. Regional urban centres should become the testing ground for new water infrastructure and technology options.

Independent operators are potential partners to be drawn into a better regulated and controlled hybrid system of water and sanitation service provision. At local levels, rainwater

BOX 3.3: **LAGOS'S BUS RAPID TRANSIT SYSTEM: THE FIRST ELEMENT OF A FUTURE MULTIMODAL MASS TRANSPORTATION SYSTEM**

Lagos, the largest city in Western Africa, and one of the largest on the continent, hosts between 15 and 18 million people. The city is characterized by unplanned growth, vast informal settlements and slums where commuters and productivity are hampered by long commuting times; high travel costs; congestion; and, inadequate roads and public transport. However, Lagos has recently embarked on an ambitious public transport programme.

Until recently, it was the only megacity in the world without an effective public transport system, despite an estimated private vehicle density that is almost 10 times higher than that of New York[134]. Better transport is one of the ways with which productivity, costs and health can be improved and stabilized in the long term. The Lagos State Government developed a Strategic Transport Master Plan in 2006 which aimed to deliver significant public transport systems within two decades. The ensuing Lagos Rapid Transit (BRT) system, which was completed in 2008, is now set for further expansion.

A key requirement pointed out in a 2006 feasibility study was to keep implementation costs lower than other premium BRT systems (such as the *Transmilenio* in Bogotá, Columbia). Delivery costs for the system were required to be less than USD 1.7 million per kilometre of BRT route. This is considerably less than the average cost (roughly USD 6 million per kilometre) of premium BRT systems. For this reason, the Lagos BRT system is dubbed "BRT Lite".

The Lagos Metropolitan Area Transport Authority (LAMATA), a strategic and regulatory body through which the BRT Lite system was formulated and implemented, received USD 100 million from the World Bank to implement the Lagos Urban Transport Project (LUTP). The Lagos State Government contributed USD 35 million, and the private sector helped finance 100 high-capacity buses. The LUTP – in which LAMATA plays the key coordination role – has adopted a "multimodal transport approach", which views integrated mass public rail, road, inland rail and waterway mass transit as critical to the city's transport systems.

▲ BRT buses in Lagos

The BRT Lite project was formulated in a user-focused approach, drawing on ethnographies, surveys and focus groups to identify commuter needs and behaviours. Safety, affordability and reliability were identified as key desirable attributes for the BRT system. An inclusive, participatory approach included transport operator unions and associations. Measures were taken to accommodate existing private transporters by providing them different feeder routes to operate, as well as absorbing bus drivers into the BRT programme. The BRT has generated thousands of administrative, management, maintenance and other jobs.

Plying a 22-kilometre route, BRT buses mix with traffic for 15 per cent of the route, while 65 per cent is physically segregated from other traffic and 20 per cent consists of dedicated bus lanes. The dedicated BRT road space has raised the ire of some private vehicle owners. However, improved affordability (between USD 0.70- USD1 for a one-way trip) is crucial to unlocking access to the BRT service. Although 85 per cent of BRT users are former users of minibuses (danfoes), only 8 per cent consists of midibus (molue) users, and 4 per cent of car users. This indicates that the city's poorest residents, who largely make use of the midibuses, as well as the city's middle classes have yet to be converted to the use of the BRT service.

With many challenges still ahead, the daily performance of the BRT Lite is evidence of its need and potential. Carrying in excess of 200,000 passengers daily, within the first six months of operation the BRT transported 29 million commuters. Despite accounting for only 4 per cent of traffic, the BRT transports 25 per cent of all commuters. Demand will soon outstrip the BRT's carrying capacity, requiring plans for this to be increased. Lagos is also implementing a light rail system, "Eko Rail", since public transport demand is unlikely to be met through BRT expansion alone. These inclusive strategies to improve integration between road, rail and water public transport services, and private and informal transport providers hold great promise for the city's commuters.

Sources: Adelekan, I., (2013). "A simple approach to BRT in Lagos, Nigeria", In: United Nations Environment Programme (UNEP), City-Level Decoupling: Urban Resource Flows and the Governance of Infrastructure Transitions, Nairobi; LAMATA Bulletin (2005). LAMATA Bulletin September 2005 Issue, Lagos Metropolitan Area Transport Authority, website: www.lamata-ng.com; Mobereola, D., (2009). Lagos bus rapid transit. Africa's first BRT scheme, in SSATP Discussion Paper No. 9, Urban Transport Series, Sub-Saharan Africa Transport Policy Programme (SSATP); Ogunlesi, T. (2012). In Lagos, a BRT system struggles to make an impact, in Perspectives: What Are Sustainable African Cities, Heinrich BÖll Stiftung, no 3.12, pp. 24-26; World Bank (2010). Nigeria Lagos Urban Transport Project, World Bank.

▲
A 14 year-long war destroyed most of the basic infrastructure in Liberia including the water system. 10 years after the war ended, services are still not restored and ECHO partners are helping to bring safe drinking water and sanitation facilities to Monrovia's booming population. **©European Commission DG ECHO.** Licensed under the Creative Commons Attribution 2.0 Generic license.

capture systems, water recycling and reuse can help buffer against high water costs. In Lagos, rainwater-capture has been adopted by the middle classes, but have yet to be diffused wider. The high cost of centralized water and sanitation systems is set to increase and maintaining large centralized infrastructures becomes more expensive. A broad range of solutions is necessary although they will depend on the particular contexts for implementation. Therefore it is important to evaluate how centralized, semi-decentralized and decentralized water and sanitation technologies can play a role in building water resilience and security at different scales, from the regional to the national, city, municipal and household levels.

Food

It is difficult to overstate the sub-region's critical need for food security. There is a great need to manage proactively and appropriately rural-urban nutrient flows in order to close nutrient loops and improve the resilience of the sub-region's cities (refer to Box 3.4). This is especially critical to improve the plight of the impoverished for whom malnutrition is a major problem.

Food prices may be adversely affected by changes in the global economy, climate or local food production systems. High levels of poverty among urban households exacerbate their vulnerability to food price fluctuations, especially of staples. The poorest households in the sub-region spend 50-80 per cent of their income on food.[137] In Niger, 37 per cent of households were reported to have entered into debt in 2008 and in Burkina Faso 50-60 per cent of household budgets were spent on food in June 2007, rising to 75 per cent in 2008.[138] The price of rice increased in Dakar by 113 per cent between 2002 and 2008; by 80 per cent in Bissau between 2007 and 2008; and by 67 per cent in Nouakchott between 2002 and 2008. Maize prices rose by 86 per cent in Kano and by 82 per cent in Malanville (Table 3.11).

Agricultural trade flows in the sub-region are dense, operating predominantly between coastal and inland cities (see Map 3.4).[139] These trade flows have been catalysed by the growth in urban demand and the provision of infrastructures such as transport and storage.[140]

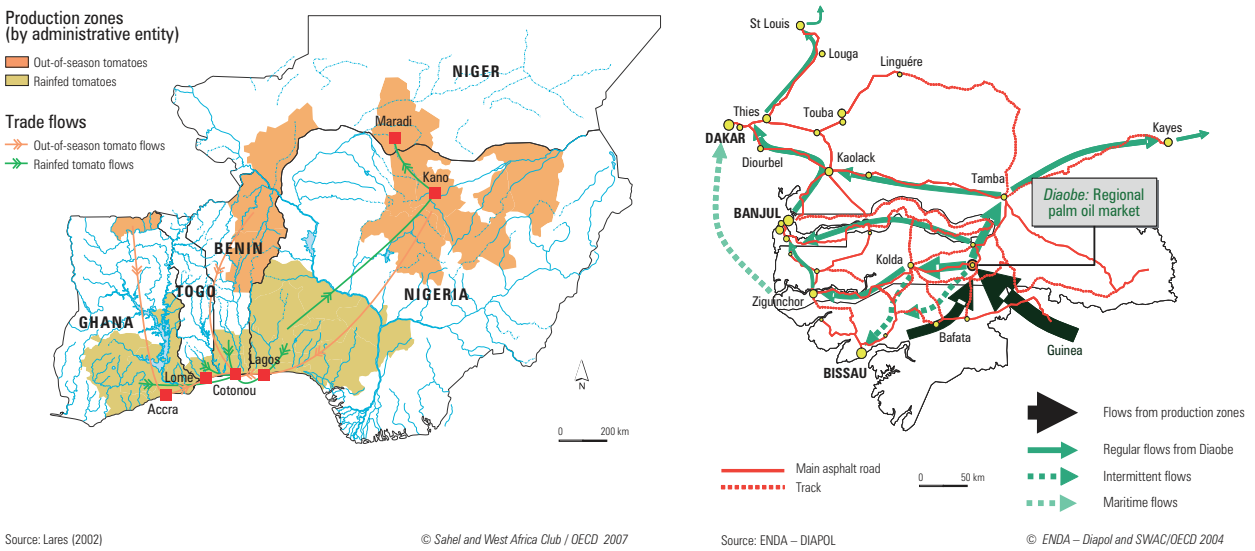
Urban, peri-urban and rural agriculture plays an important role in ensuring nutrient diversity and food security in Western African cities (see Section 3.3, Agriculture and Food Production).[141] Urban and peri-urban agriculture, for example, accounts for more than 80 per cent of supplies of lettuce and spring onions in Accra, Kumasi and Ouagadougou (see Box 3.4).[142] In Accra, over 1,000 farmers are engaged in urban and peri-urban agriculture, with around 1,400 and 5,000 market gardeners in Freetown and Ibadan respectively.[143] Downstream activities generate livelihoods and employment for an estimated 20,000 people involved in processing and marketing urban agricultural produce.[144] Agricultural production requires soil fertility to be renewed.

TABLE 3.11: **STAPLE PRICE INCREASES BETWEEN 2002 AND 2008 IN WESTERN AFRICAN CITY MARKETS**

Country	City	Market	Staple	Price in July 2008 (FCFA/kg)	July Average (2002)	Percentage Increase (Per Cent)
Benin	Malanville	--	Maize	275	151	82
Burkina Faso	Ouagadougou	Sankarya	Maize	188	178	5
Côte d'Ivoire	Abidjan	Adjamé	Rice	375	--	--
Guinea	Conakry	Madina	Rice	360	290	24
Guinea-Bissau	Bissau	Bandim	Rice	450	250 (2007)	80
Mali	Bamako	Niaréla	Maize	200	152	24
Mauritania	Nouakchott	--	Rice	434	259	67
Niger	Niamey	Katako	Millet	260	157	65
Nigeria	Kano	Dawanu	Maize	285	153	86
Senegal	Dakar	Tiléne	Rice	467	219	113

Source: FEWSNET 2008; in SCN News 38 2010, UNSCN

MAP 3.4: **FRESH TOMATO AND PALM OIL TRADE ROUTES IN WESTERN AFRICA**



Source: Lares (2002)

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Source: ENDA – DIAPOL

© *ENDA – Diapol and SWAC/OECD 2004*

Source: Sahel and West Africa Club (SWAC) (2007). Rural Areas and Agricultural Changes, Atlas on Regional Integration in West Africa, Environment Series, ECOWAS-SWAC/OECD, p. 12-13, map 10 and 11, accessed from www.oecd.org/swac/publications/38409569.pdf on 14 May 2013.

Waste recycling can play a major role in this (see Box 3.4).

Local price regulation of staple foods and goods, often applied through national bodies, are just two options that might allow the sub-region's policymakers to preserve local agricultural production and food markets. Alternatives do exist, yet are heavily underappreciated. The role of co-operatives and non-profit organizations is often overlooked, to the detriment of market diversity and resilience. Such organizations can play key roles in value chains and production. Roles might include recycling biowaste for energy supply and composting; co-operative food gardens and markets; technical advice and skills development agencies; and ecological conservation. It is debatable whether market forces alone can meet all the challenges of food and nutrient security facing the sub-region's cities. Ensuring food security at city scale will likely involve significant rezoning to protect urban agricultural land, as well as better irrigation management. Local scale agricultural production should be improved in urban Western Africa. This requires the involvement of city governments; local and international donors; aid organizations; as well as non-governmental and civil society organizations to match the scale of the effort required.

BOX 3.4: **FOOD AND RURAL-URBAN NUTRIENT FLOWS IN WESTERN AFRICA**

With high urban growth rates across Western Africa, the pressure for adequately abundant and nutritious food supply is great. Urban and rural gardens and farms provide significant, often specialized, contributions to urban food supply, diversifying the food market. Understanding the ecological cycles that affect agricultural production can help ensure long-term food security. Soil nutrients are quickly depleted by inadequate land-use management. Nutrients are cycled into food and leave the soil, making it less fertile over time. Restoring soil nutrient levels is thus critical for guaranteeing adequate, nutritious food supply. Understanding rural-urban nutrient flows further requires reliable data on food volumes and origins.

By studying food markets and household consumption in Accra, Kumasi and Tamale (Ghana), and Ouagadougou in Burkina Faso, a "bottom-up" understanding of food classes and volumes consumed in the cities was obtained during 2007. These data were then used to estimate the area of agricultural land needed to produce the food, as well as an estimation of soil nutrient depletion.

Some 847,650 tons of food crops per year were consumed in Accra, while in Kumasi it was 948,850 tons and in Tamale 137,700 tons. Rural-urban flows constituted 88 per cent in the lean season, whereas in the peak season, peri-urban agriculture accounted for 36 per cent of supply, consisting mainly of vegetables. Up to 90 per cent of fresh leafy vegetables was produced within the city and was also sold on to other cities.

The nutrient profile of the four cities (see table below) indicated that Kumasi and Accra received the highest amount of nutrients, while Tamale received the lowest. Higher nutrient demand indicates higher soil pressures, while lower demand indicates lower resource pressures. It is important to note, however, that lower nutrient demand still places pressure on soil nutrients and other resources.

▲ Peanut vendor in Ouagadougou. **©Romanceor.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported, 2.5 Generic, 2.0 Generic and 1.0 Generic license.

What happens to nutrients in cities is even more interesting. Around 50 per cent of nitrogen and phosphorus ends in surface and groundwater; 22 per cent and 29 per cent of nitrogen and phosphorus, respectively, ends in the soil; and 15 per cent of both nutrients ends up in landfills. Urban surface water, groundwater, soil and landfills together thus receive over 85 per cent of nitrogen and almost 95 per cent of phosphorus. Mining these wasted resources for use as soil fertilizers and to restore ecological integrity is a logical solution to closing urban nutrient loops. Yet accurate information regarding nutrient and other material flows in African cities is difficult to find.

The relevance and importance of understanding these flows - whether into, within, or out of African cities - is an essential area in which more research is required. Strategies for supporting local food production might include closing nutrient loops through integrated water, waste and other systems, as well as innovative eco-engineering solutions. Such strategies have great potential but depend on accurate information. When this information becomes available, it affords city governments the opportunity to devise integrated programmatic responses that steer their transition towards higher levels of urban sustainability, both within and beyond the boundaries of the city.

Nutrient Flows to Cities in Western African Cities (tons/year)

City	Kumasi	Accra	Tamale	Ouagadougou
Nitrogen	4 697	4 318	813	3 025
Phosphorous	559	798	161	790
Potassium	4 209	3 156	462	1 191

Source: Drechsel et al. 2007: Table 7 in source.

Sources: CTA (2005). Feeding the Towns: A Weighty Dilemma, Technical Centre for Agricultural and Rural Cooperation (CTA), SPORE, 117, pp. 4-5; Drechsel, P., Graefe, S., Fink, M. (2007). "Rural-urban food, nutrient and virtual water flows in selected West African cities", (IWMI Research Report 115), International Water Management Institute (Colombo: Sri Lanka).

BOX 3.5: **PROMOTION OF URBAN AND PERI-URBAN AGRICULTURE AND FORESTRY TO ADDRESS CLIMATE CHALLENGES: BOBO-DIOULASSO, BURKINA FASO**

Bobo-Dioulasso, in Burkina Faso's Houet Province, is 360 km south-west of Ouagadougou. The city's 2006 census estimated a population of 497,191 increasing to some 800,000 by 2012. The municipality covers a total surface area of 160,000 ha, of which approximately 30,000 ha is of urban development. Bobo-Dioulasso is considered the economic capital of Burkina Faso because of the importance of its industrial fabric and the dynamism of its commercial, craft and agro-pastoral activities.

Rainfall in Bobo-Dioulasso has been steadily decreasing and a southward migration of isohyets has been recorded. The area has faced climate perturbations for many years and climate models project decreases of 3.4 per cent in rainfall by 2025 and 7.3 per cent by 2050. Further, increased average temperatures of 0.8°C and 1.7°C are projected by 2025 and 2050 respectively.

Evidence of climate change in Bobo-Dioulasso includes delayed onset of the farming season, by as much as two months since the 1950s. There has also been a shorter rainy season; increased temperatures and flooding; and recurring dust storms. The consequences include increased dust pollution; inter-annual variation of agricultural productivity and activities; reduction of livestock watering places; and a rapid decline of pastures used for grazing through drought. These vulnerabilities have increased the rural exodus; raised prices of primary foodstuffs; and have led to outbreaks of some diseases such as tuberculosis, poliomyelitis and meningitis, which had almost disappeared. Flooding, which can be exacerbated by lost vegetation cover, has also led to loss of harvests and dwellings.

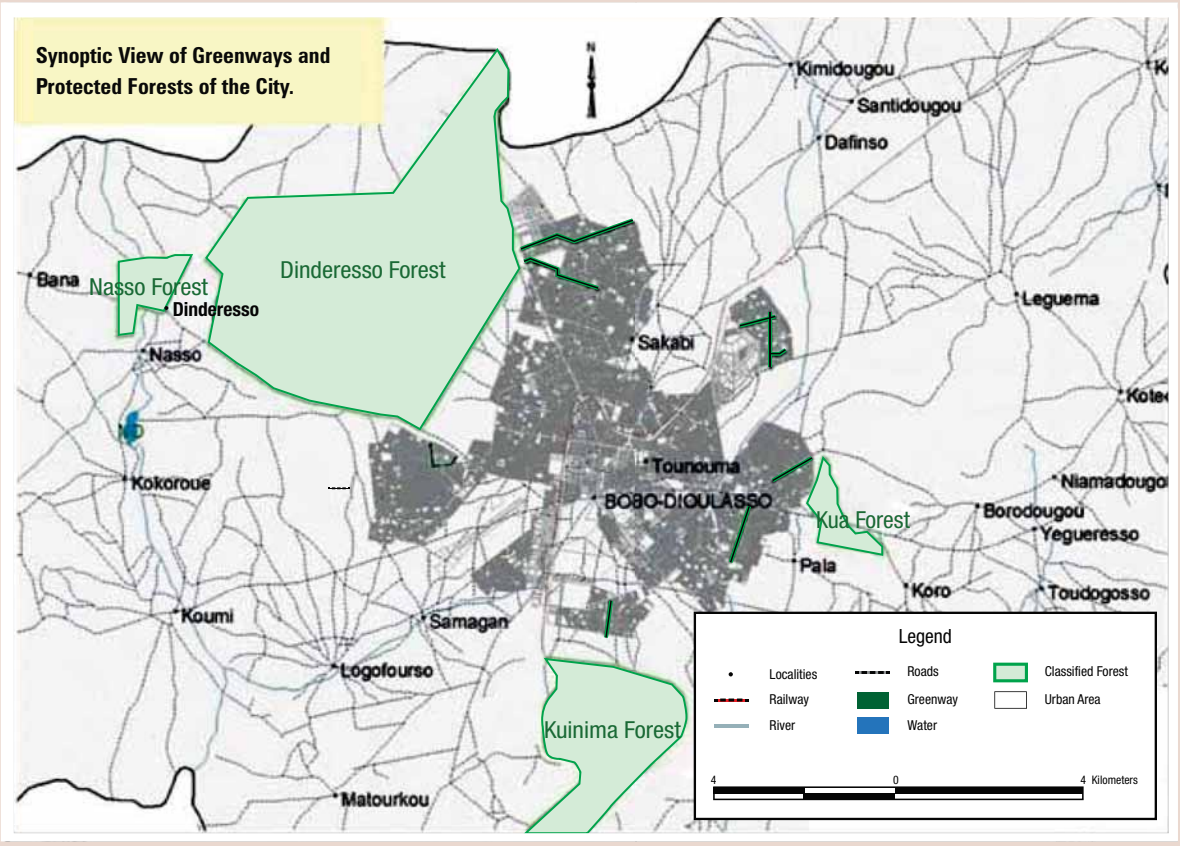
A municipal unit was established to manage Bobo-Dioulasso's partnership in the UN-Habitat's Cities and Climate Change Initiative (CCCI), designed to implement plans to lessen the impact of climate change. Greenways were chosen as the model for an Urban and Peri-urban Agriculture and Forestry (UPAF) project to improve adaptive capacity in Bobo-Dioulasso. By 2012, eight greenways totalling around 60 hectares had been established, connecting the city with the peri-urban forests (see Map 2). Their functions are to restore, protect and manage biodiversity. Regulations that apply to green spaces also apply to the greenways, ensuring their protection within the city. Each greenway has been allotted specific functions and uses. The greenway of District 33, for example, covering 6.4 ha, was allocated functions of forest production; market-gardening; and the development of recreational and environmental awareness spaces. The dual objectives are to increase the environmental resilience of the greenways to climate change while improving living conditions. To this end, the project strives to reduce ambient temperatures and greenhouse gas emissions and improve the resilience of inhabitants by increasing their incomes and diversifying food supply. Green open spaces, peri-urban forests and traditional market gardens are now a permanent feature of Bobo-Dioulasso's expanding green mosaic.

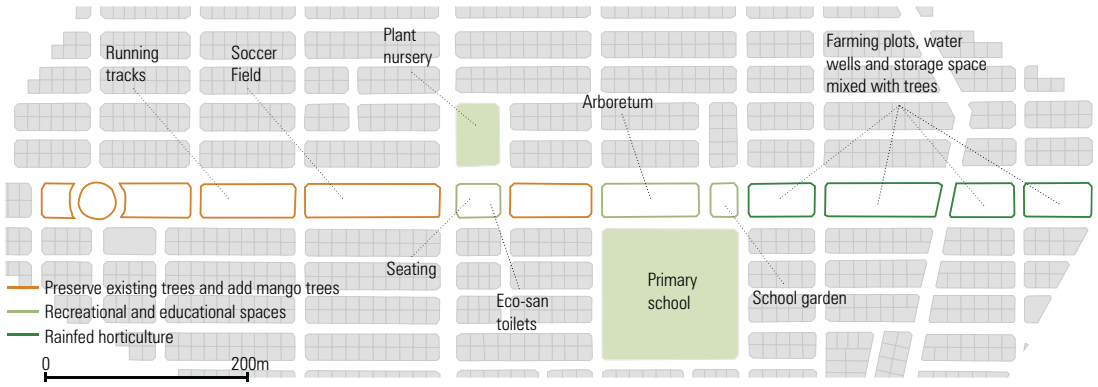
▲ Female bread vendors, Bobo-Dioulasso, Burkina Faso. **©Adam Jones, Ph.D.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

Employing 7 per cent of the city's population, urban agriculture includes market gardening along the Houet River and cereal farming in peri-urban areas. The city's market gardening produce represents 15 per cent of Burkina Faso's total national production. In Phase 3 of the CCCI, the municipality committed to promote UPAF as adaptation and mitigation strategies to climate change.

This pilot project is a key initiative, which aims to showcase greenways as a development model in the face of climate change. It also aims to promote the project as an example of good management governed by appropriate municipal regulation. The implementation of the operational activities will be accompanied by advocacy targeting the adoption of regulatory measures that determine the functions of urban and peri-urban agriculture and forestry within greenways.

BOX 3.5 (CONTINUED): **PROMOTION OF URBAN AND PERI-URBAN AGRICULTURE AND FORESTRY TO ADDRESS CLIMATE CHALLENGES: BOBO-DIOULASSO, BURKINA FASO**





CONCEPT FOR THE SELECTED GREENWAY in Bobo-Dioulasso. With additional greenery and opportunities for a variation of activities this has the potential to be a good meeting place in the neighbourhood. ©UN-Habitat, Frida Skarp

Sources: Municipality of Bobo-Dioulasso - RUAF foundation, (2013). Document of the project on the integration of urban and peri-urban agriculture and forestry (UPAF) in the strategies for fighting against the effects of climate change in Bobo-Dioulasso; Municipality of Bobo-Dioulasso, (2006). Municipal Development Plan 2006-2010; Ministry of Habitat and Urban Planning, Regional Poles of Development Project: Final Report of Support for the Consolidation of the Management System of Solid Waste in Bobo-Dioulasso, 2012; Ministry of Economy and Finance, (2009). Theme 9: the urban growth in Burkina Faso, during the general census of the population and the habitat of 2006 (RGHP-2006); Ministry of Environment and Livelihoods, (2006). National Action Plan for the Adaptation to the Variability and Climate Change in Burkina Faso (PANA); United Nations Programme for Human Settlements in Burkina Faso, Report 2009; Traoré S. (2006). Truck-Farming Production and Supply of the City of Bobo-Dioulasso. End of Training Course Report, ATAS, Agricultural Centre of Matourkou; UN-Habitat & RUAF Foundation, (2013). Flyer on Climate Change and Urban Agriculture.
Compiled by: Hamidou Baguian, Marielle Dubbeling, Moussa SY

BOX 3.6: **THE WEST AFRICAN POWER POOL AND HYDROPOWER**

The West African Power Pool, a regional energy integration project, plays a role as a strategic intermediary for energy security in the sub-region. The power pool has been involved in putting together regional partnerships to improve energy affordability, supply and distribution capacity *(Hydropower Resource Assessment of Africa)* within the Economic Community of West African States and is involved in a number of large hydropower projects. In the long term, the power pool intends to extend Nigeria's energy resources to the rest of the sub-region and to access untapped hydropower resources in Guinea (estimated at 6,000 MW), which can be developed at low cost. For example, the Manantali Dam on the River Senegal will distribute its 200 MW capacity between Mali, Mauritania and Senegal and will help service the cities of Bamako, Dakar and Nouakchott.

Source: HRAA (2008). Hydropower Resource Assessment of Africa; Water for Agriculture and Energy in Africa. The Challenges of Climate Change; Ministerial Conference on Water for Agriculture and Energy in Africa: The Challenges of Climate Change, Sirte, Libyan Arab Jamahiriya, 15-17 December 2008.

Energy

Primary sub-regional energy resources are oil and natural gas (predominantly from Nigeria) and hydropower, which are concentrated in Ghana, Guinea and Nigeria.[145] Ghana and Nigeria constitute the bulk of sub-regional energy demand. With the exception of Monrovia (Liberia), access to electricity in many Western African cities is relatively widespread in comparison with rural areas.[146] Regional energy access vulnerability is exacerbated by the volatility of fossil fuel prices, since 60 per cent of energy generation is derived from oil. Rising urban demand is not being met because of limited electricity generation capacity due to limited capital investment.[147] Average compound growth in sub-regional electricity demand is greater than 7 per cent per annum and is projected to rise from 39 Tera Watt hours (TWh) in 2003 to 140 TWh in 2020.[148]

Energy is essential to boost economic activity and growth in the sub-region's cities. The viability of economic growth trajectories for these cities depends acutely on their access to electricity and fuel supply. For example, in 2004, 75 per cent of Ghana's GDP was accounted for by industrial and services sectors within Accra.

Despite the sub-region's hydropower, gas and oil resources, the majority of poor urban households lack access to electricity, and household needs are largely met from biomass combustion instead. Recent comprehensive data are unavailable.

The potential for renewable energy development in the sub-region is high. For example, biofuel and biogas have the potential to ensure energy resilience (and close waste loops) at the household level and these remain largely unexploited renewable resources. Only 16 per cent of the roughly 23,000 MW of hydropower potential is presently being exploited.[149] There is also high average annual solar energy potential, at 5-6 kWh/m^2 per day.[150] Potentials also exist for sub-regional wind, tidal, ocean thermal and wave energy collection.[151] In order for urban energy infrastructure to keep pace with growing demand for household and income generating activities, national and sub-regional grids may need to be considered.

National and local governments in the sub-region may need to also consider decentralized renewable energy options to offer local-scale energy security that supplements supply and alleviates demand on national and sub-regional grids. Decentralizing and diversifying the energy market through a variety of energy technologies holds significant potential for filling the sub-region's needs in the short and medium term. Biodigesters can close organic waste and sewerage loops. Solar technologies can harness radiation. Energy savings management; retrofit technologies (e.g., insulation); and design considerations that lower energy footprints can all play a role in building local energy security, affordability and resilience.

Over the longer term, however, centralized production systems will also be necessary to support macroeconomic growth and it is likely that regional sharing agreements must be put in place to achieve this goal. Existing agreements such as the West African Power Pool (Box 3.7) are already responding to sub-regional energy integration needs, although additional support and partnerships with agencies such as the African Development Bank, the World Bank and the International Monetary Fund will likely be necessary to ensure energy security at scale in the sub-region. It is important to ensure that efficiency losses are minimized through well-maintained energy delivery infrastructures at the city scale, as well as to revise building energy efficiency standards and introduce measures for lowering energy footprints of transport systems.

Waste Management

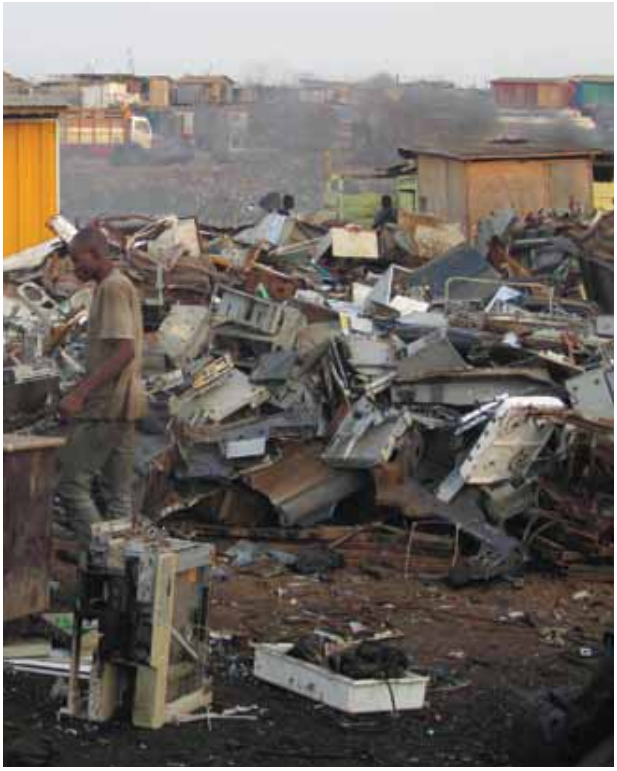
Western Africa's highly populated cities generate correspondingly large quantities of waste, the greater portion of which is solid household organic matter. Four cities are examples of this situation. Accra's household waste output of between 100 and 167 kg per capita per year by 2005 was greater than the combined output of Kumasi, Tamale (Ghana) and Ouagadougou (Burkina Faso). This may indicate Accra's relative affluence since, with the exception of Tamale (population around 500,000), the three larger cities are roughly the same size (see Table 3.3).[152] In total, during 2005 Accra generated a daily average of around 1,500 tons of waste.[153] A 2009 study of eight cities in Nigeria found that the Lagos Waste Management Authority handled 255,556 tons per month, followed by the Kano State Environmental

Protection Agency at 156,676 tons per month with organics once again constituting the bulk of the waste. Municipal solid waste management in Nigeria is poor, as there are no landfill regulations or standards. Sanitary landfills introduced in Lagos and Onitsha more than 20 years ago are no longer operational.[154]

Despite many Western African cities having appropriate waste disposal policies, the reality is often different, with uncontrolled open dumping in cities such as in Bamako, Mali. Unsanitary waste disposal methods include on-site incineration and household incineration (often by women and children) that pose air pollution health risks.[155] Inadequately managed landfills are often close to, or co-located with, informal and low-income settlements, resulting in waste pickers hindering landfill operations. In Lagos, inadequate solid waste removal has resulted in informal sector operators collecting or scavenging waste to sell to resource merchants and recyclers.[156] In 2003, 85 per cent of waste materials in Bamako were recovered by the informal sector. Urban organic waste was sold to farmers who separated it for fertilizers, despite the possibility of contamination from plastic, electronic and other waste. Farmers in Bamako and Ougadougou pay dump truck drivers for the removal of urban waste;[157] an illegal practice widespread throughout Western Africa.

Waste collection, covering 57 per cent of households in Bamako District, is conducted by around 120 self-employed microenterprises, called *Groupements d'Intérêt Économique,* which collect 300,000 tons of waste[158] using donkey-carts.[159] Bamako's waste distribution system has 36 formal secondary delivery points but only 15 are in use, while 75 informal (unauthorized) dumping sites and waste piles dot the city. Vegetable gardeners *(Maraîchers)* who farm on the Niger River bank, still make use of decomposed municipal solid waste as fertilizer, relying on the strong Sahelian sunshine to disinfect the waste.[160]

Urban waste management systems in the sub-region are under enormous pressure, with severe health risks and environmental degradation among the consequences of inefficient management. Transport costs for waste transfer to remote sites, as in Bamako, are set to increase as fuel prices rise.[161] Closing waste loops may be a critical factor in unlocking other opportunities in the energy and agriculture sectors. General and localized waste recycling schemes already exist informally in cities but the market needs to be sensitively formalized and structured to ensure that jobs are better remunerated, safer and have decent employment conditions. It is also critical to review waste management legislation and policies, especially where these prohibit recycling. The sub-region shows high potential for biomass recycling (i.e. waste-to-energy, waste-to-compost and waste-to-animal feed). The promotion of local scale composting, as well as the use of biomass digesters, may improve waste management at local and household scales. There are further opportunities to ensure safer recycling and reuse practices and a standardized set of safe measures is required for the sub-region.



▲ Agbogbloshie, a suburb of Accra, Ghana is a "digital dumping ground" - a destination for both legal and illegal dumping of electronic waste (e-waste) from industrialized nations. **©Marlenenapoli.** Licensed under the Creative Commons CC0 1.0 Universal Public Domain Dedication.

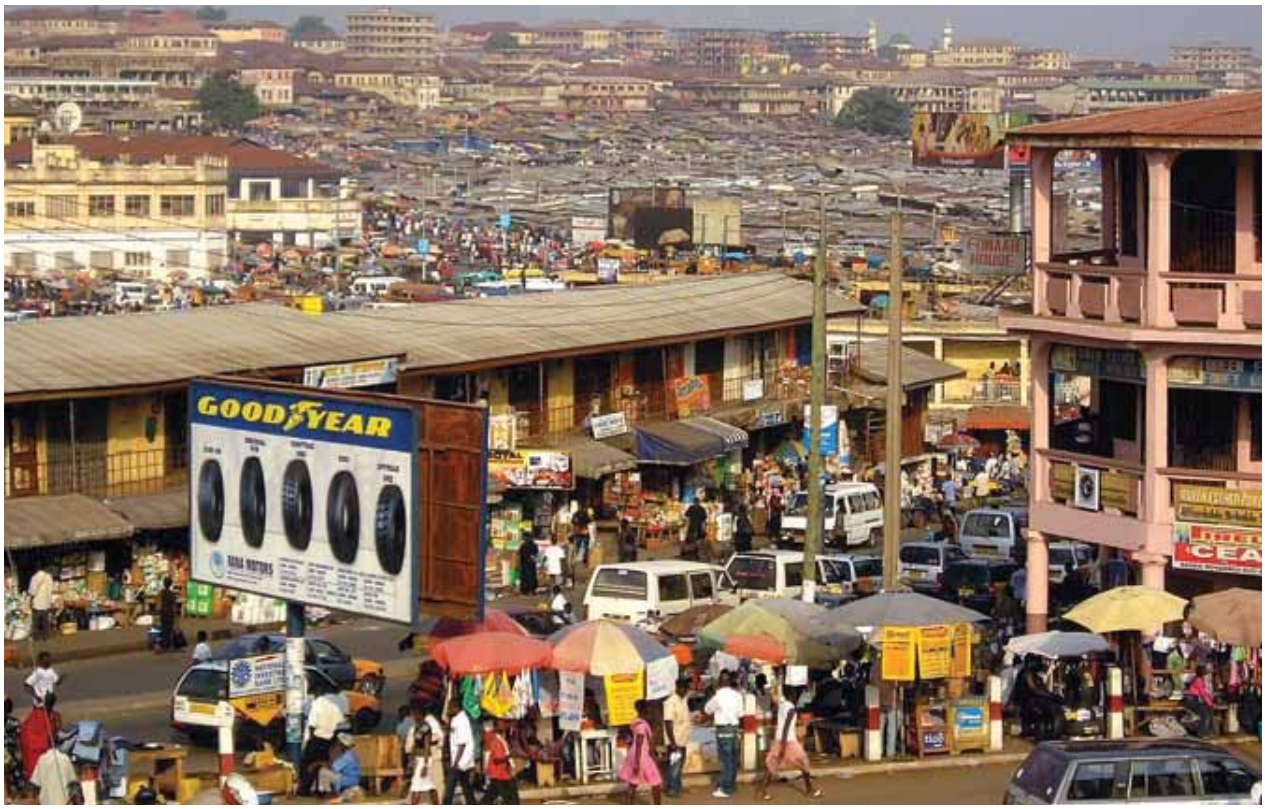
Urban Ecosystem Management

Ecosystem functions that operate at scales within, and beyond, the urban domain are of particular importance to livelihoods and activities such as agriculture, forestry and fishing. The southward spread of the Sahel, and encroachment of desert on northern cities in Western Africa, presents challenges that require responses and management initiatives beyond city boundaries. Wetland and watercourse degradation, as well as activities such as clearing unsuitable land for agriculture or uncontrolled upstream logging, render cities more vulnerable to flooding and drought. Ecosystems must be maintained by sustainably managing all activities within the broader catchment area in which cities are located.

Healthy coastal ecosystems are critical to sustain coastal agriculture and fishing. Coastal, estuarine, wetland and marine systems are already under pressure from high and escalating coastal urbanization, exacerbated by uncontrolled urban waste and pollution. Coastal agriculture and fisheries also depend on effective upstream catchment management.

Urban planning and management in the sub-region will benefit greatly from adopting and implementing integrated approaches to ecosystem protection and building adaptive capacity. Multifunctional use of open space with clear regulatory protection and effective management can promote public understanding of the value of ecosystems to urban sustainability and resilience (see Box 3.5).

3.5 Western Africa: Urban Culture and Change Agents



Kumasi, Ghana. **©Lattitude Canada.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

Migration, Culture and Identity in Urban Western Africa

Western African cities such as Douala and Lagos existed as important religious, commercial and trade centres centuries before colonialism but recently have been growing at rates disproportionate to their historical purpose.[162] In the 1960s, two-thirds of urban growth could be attributed to rural-urban migration, as well as the reclassification of smaller settlements which grew to urban size. By the 1990s, this had slowed to 30 per cent.[163] Migration patterns around the turn of the millennium also indicated significant urban-rural flows[164] and a small slowdown in urban growth rates (see Section 3.1).

Migration in the sub-region today is rural-urban and transboundary in significant measure, yet the response of governments has been hostile to migrants, typifying them as rural dwellers who do not share the "right to the city". In Nigeria, for example, several million migrants were expelled in the early 2000s.[165] Despite this, people find ways to re-enter urban areas on other terms. Sweeping anti-migration measures taken by central and city governments are largely futile and only create deeper exploitative conditions for migrants. The stigmatization of rural migrants in urban areas by leaders and public institutions reflect an inability to view urbanization as a positive process.

Migration lies at the heart of the cultural heterogeneity of Western African cities that allows for the establishment of new identities and lifestyles[166]; a trend that cannot be reversed through expulsion of migrants and immigrants. Migrants are an essential part of how "notions of kinship and community" are refashioned in urban Western African societies,[167] while at the same time contributing to the entrenchment of ethnicity as a critical factor in "local organization" in the sub-region.[168] This is especially the case in older communities in Kumasi

(Ghana), Kano and Ibadan (Nigeria), as well as smaller urban areas.[169] However, the emphasis on ethnicity as a factor in the segregation of Western African cities should be questioned as high rates of unplanned and chaotic urban expansion (especially of poor and mixed-income neighbourhoods) render ethnicity (as a territorial identity marker) a historical myth rather than adequately representing the present reality in the sub-region's cities.[170] National and transnational identity markers inform a strongly cosmopolitan Western African popular culture.[171] Music and popular drama for example, while ethnic in origin, have expanded to become national and transnational.[172] Senegalese music and the rapid expansion of Nigeria's film industry (Nollywood) extend to expatriate and diasporic communities throughout Africa and the rest of the world, illustrating the complex mix that constitutes popular culture in urban Western Africa. At the same time, however, ethnicity plays a key role in these industries. For example, Nollywood is dominated by Igbo businessmen, financiers, marketers and distributors.[173]

Cosmopolitan and local orientations combine in Western African cities, reflecting a different conception of identity and belonging than has traditionally been the case in rural areas. In rural locales ethnic nationalism was more easily exploited by the state to construct new national identities, facilitated through the establishment of customary or "native" law.[174] In cities, a more universal citizenship was awarded to Africans and Europeans, because European civil and criminal law was applied. However, ethnicity was a key factor in determining access to state-controlled resources. In addition, ethnicity is in part responsible for a "differential urban citizenship in the construction of patronage networks. Kumasi's residential population, for instance, is more segregated along ethnic lines than in Accra,[175] but socio-economic circumstances of ethnic groups contribute more to this segregation than cultural factors.

Western African cities have deeply entrenched levels of inequality and inequity, yet it is hardly helpful to paint the picture of the sub-region's urban society as being in "perpetual crisis".[176] The processes that are unfolding in the sub-region's cities are characterized by new dynamics that are more prevalent amongst youth and involve significant identity shifts that negate the idea of cosmopolitanism and retreat into a combination of ethnic, territorial, Muslim and Christian fundamentalist and evangelical transnational groups.[177] Further, new logics of socialization have successfully taken the form of political protest,[178] which indicates that the urban societal changes unfolding in Western African cities, in terms of identity, belonging, contestation and participation are significant and fundamental.

Ethno-religious contestation in Nigeria between Islamic and Christian groups, for example, has resulted in bloody confrontations in the autonomous "Jesus Our Saviour" quarter in Lagos and in the northern Kaduna State and southern Delta State.[179] However, these conflicts are often driven by deeper issues concerning governance of integration and how indigenous rights are guaranteed.

In Nigeria, "indigenes" refers to the original ethnic inhabitants of local areas, while "settlers" refers to new arrivals. In the 1990s, when "indigeneship certificates" were distributed, presumably to allay concerns over advancing cosmopolitanism, they had the effect of restricting the rights of non-indigenes in terms of political participation, land ownership and school attendance, for example.[180] Lack of access to "indigeneship certification" as well as arbitrary and inconsistent application of this classification resulting from poor governance and political exploitation of "indigeneship", are central drivers of conflict and the rise of exclusionary ideologies in the region.[181] Christian and Islamic groups as well as youth groups in the city of Jos (Nigeria), which once celebrated diversity,[182] play a strong role in fostering and spreading exclusionary ideologies and violence.[183]

It is certain that the region is set to undergo fundamental changes in its sociocultural identity as urbanization levels are projected to reach nearly 80 per cent in some countries by 2050 (see Table 3.2). Urban politics, though supposedly local in nature, is likely to have sub-regional significance due to the huge volume in the movement of people and goods between countries. Ensuring cities that can harness and complement the vast range of (especially informal) activities and modes of human settlement is critical to future stability and growth, and will help guide the transition to stable urban societies.

Agents of Change

By most indications the crisis and vulnerability narrative that is so readily attributed to Western Africa is being met with a perspective which views this crisis as symptomatic of an embryonic force for change in the sub-region and that new forms of urban politics are set to emerge. The youth will surely play a critical role. Transboundary interconnections between urban markets will also play a role in shaping the future, whether these connections are regional or worldwide. Yet, with all these considerations, it remains difficult to ascertain whether Western African cities will yield a profound new order or will lapse into "riot and racket".[184] In that light, it is prudent to establish who constitute the key change agents or strategic intermediaries in the urban spaces of Western Africa; that is, who is contributing to its transformation, and how?

Emerging Middle Class and Potential for Private Sector Growth

Harnessing the potential value of Western African urban economies and their growing middle classes requires significant private sector expansion and foreign direct investment into the region's large and secondary cities. In a region rich in minerals, oil, ecological wealth and arable soil, the staggering potential for renewable energies (especially solar and hydro-power) relies on decisions made now to facilitate the development of healthy, equitable and robust socio-economic and cultural urban centres. Yet it is unclear whether or not the current boom in oil and other resource-based economic activities will translate into enhanced service

Niamey, Niger. Young rappers from various hip hop groups at the Scenes Ouvertes Rap concert. **©Giacomo Pirozzi/Panos Pictures.**

industries, trade etc. Moreover, political and social stability is a key requirement for sustained growth that leverages the diverse potential base for economic expansion that exists in the region. The growing urban middle class holds great potential for boosting this economic growth and diversification, as well as ensuring that political and social stability is maintained.

Youth as Agents of Change

The demographic youth bulge has become a key social and political driver of change in the sub-region and makes up the majority of city residents (Table 3.12). Amidst this overwhelmingly youthful population, fertility rates are relatively low, indicating that social change is unfolding in this new melting pot of diverse, yet disenfranchised majority. The composition of youth in the sub-region is heterogeneous[185] and they are fragmented in terms of ideological and identity underpinnings. Yet they will likely play a key role in determining the political and sociocultural future of Western African societies.

Western Africa's youth is caught between extremes, varying from war, unrest and violent protest at one end, to rampant organization of different social movements at another. Largely disconnected from the national populist rhetoric of their governments, the youth have "ambivalent political expressions and social practices"[186] and are "without markers"; that is they are without clear orientation to any particular political beliefs, ideology or awareness.[187] The youth are often viewed as forces of violence and destabilization of the nation state.[188] These views often fail to acknowledge the positive aspects that could be harnessed and developed through inclusion and acknowledgement of emerging qualities.

Intergenerational conflict in the region has taken on massive dimensions due to the sheer disconnect with tradition that new modes of negotiated modernity have introduced into Western African cities.[189] The changes are also not immune to the influence of global media. Youth identity is being constructed in terms of global influences that are appropriated, reinterpreted and incorporated into local urban conditions and changing circumstances. Amidst these changes, the construction of citizenship identity itself is changing.[190] Heavily dependent on informality, the youth in Western Africa represents a force for social change, even though its orientations and destination still remain unclear. They are absorbing, replicating and remaking diverse value systems, belief structures and normative orientations into new languages, behaviours, sociopolitical ideological orientations, and sources for political agitation or, conversely, thoughtless malaise and delinquency. The lack of ability to create futures that resemble the sociocultural historical trajectory of older generations, who experienced strong support from nuclear and

TABLE 3.12: **WESTERN AFRICAN YOUTH – URBAN AGE PROFILES**

Country	City	Percentage urban population under 15 years of age	Percentage urban population over 50 years of age
Benin	Cotonou	37.85	7.65
Burkina Faso	Ouagadougou	34	7.85
Côte d'Ivoire	Abidjan	33.7	5.6
Ghana	Accra	34.75	12.15
Mali	Bamako	41.45	7.6
Mauritania	Nouakchott	40.4	9.05
Niger	Niamey	41.65	8.4
Nigeria	Lagos	34.85	11.6
Nigeria	Abuja	43.1	10.5
Nigeria	Ibadan	35.05	17.85
Nigeria	Kano	43.6	9.7

Source: UN-Habitat 2008, p.196

extended family networks, is facilitating migration to cities. The youth of Western Africa today are negotiating a very different set of everyday circumstances than their forebears.

Their plight is different, but it is so for rulers and older generations to fully understand these differences. There are severe disconnects between programmes that intend to energize youth along national populist lines but that, in reality, further alienate them from the functions of the state which is, in effect, an absent or alien force to the sub-region's youth. For the most part, youth despise what the state represents to them; a form of autocratic control over society that denies them opportunities from which to learn and prosper on their own terms. Relegated to informal modes of income generation, and an existence outside of formal institutions and the public sector, youths find different ways through which to realize their ambitions, even if these are unrealistic or overly ambitious. Without avenues to test different growth trajectories through formal educational institutions and apprentice programmes, youths develop their own, often misguided institutions through which they exert informal contestation of the state and the sociocultural institutions that mark the cornerstones of the society in which they survive on a daily basis. Despite the prevalence of intergenerational conflict and disconnect between value and belief systems, the intergenerational transfer of informality between older generations and the youth remains high. Broadly, youth constitutes the most significant driving force. They are significant actors in civil society, whether as informal actors or through criminal activities. The potential for them to play a critical role in steering urban governance to meeting their current and future needs is hence very high. In the sub-region's post-conflict contexts, youths constitute a key avenue through which reconstruction and reconciliation might be fostered.[191] Focusing sustainable urban development strategies on youth inclusion is a key priority and can serve to improve household- and local-scale resilience. For example, the youth might be absorbed into skills development and small business start-ups around modular, decentralized renewable energy technologies and urban agriculture. Some responses to the high levels of youth unemployment have included the promotion of youth in the agricultural sector as well as in public infrastructure maintenance and green economic development programmes.[192] In Porto Novo (Benin) the Songhai Centre runs an active skills development programme for youth.[193] In the long term, education and skills development that match the economic growth paths of Western African cities are essential to unlocking the potential of urban youth in the region.

Government, Non-government and International Organizations

Governmental, non-governmental and international organizations and agencies have a key role to play in steering Western African urban society towards greater inclusion, economic growth and sustainable development. Institutions such as the World Bank, the African Development Bank and various agencies of the United Nations are part of the broader spectrum of actors in Western Africa, which also include non-governmental and civil society organizations, and private sector actors. Youth, religious, community and other bodies[194] have the potential to impact significantly upon urban governance in Western Africa.[195] Their capacity to effect change is limited, however, as they are locked in territorial battles of their own to secure spaces of operation and secure financial support.

The consequential piecemeal actions of civil society could further exacerbate the fragmentation of urban management.[196] Effort is required to establish strategic intermediaries that can help bring about more coordinated action between different actors in civil society to greater overall effect in Western African cities. In this respect, national and city governments can play a key role by initiating programmes that support integrated urban and regional development. They can also work in cooperation with non-government and international agencies to improve socioeconomic urban development strategies.

Microfinancing Agencies

Microfinancing schemes have been a popular response among developmental experts who are tasked with the challenges of urban and rural informality,[197] as they are critical to ensuring sustainability of household budgets as well as small and informal businesses. A key challenge facing peri-urban (and rural) farmers, for example, is lack of credit.[198] In Ghana, Liberia, Nigeria and Sierra Leone, at least 34 microfinance organizations and 50 microfinance bankers, investors and practitioners existed in 2008.[199] The microfinance sector has evolved from a piecemeal industry to one that is benefitting from structures introduced by central banks and apex institutions.[200] Focused on micro, small and medium enterprises, it has exhibited a keenness to invest in new technologies, products and operating models.[201] The need for access to commercial growth capital is very high in the region and the sector's potential in Western Africa is estimated to lie between USD 8 billion and USD 42 billion.[202] It is a fast-growing market in need of greater levels of efficiency as well as additional capital, which have waned in the wake of the 2008 global financial crisis.[203] Recognizing the potential of the informal sector to buffer social inequality and income generation inertia, the Central Bank of Nigeria has established a policy for microfinance with the aim of boosting employment. The objectives of microfinance in the informal sector include enabling it to professionalize by employing more highly skilled workers; to provide financial services and management support for informal business activities; enabling skills development; and, improving transparency in financial and other affairs, perhaps leading to a semi-formalization of the sector. In Nigeria, this new policy stipulates that a minimum of one per cent of the annual budget of state governments should be dedicated to the lending services of microfinance banks.

Local and Transnational Spiritual Organizations

Faith-based organizations and neighbourhood associations have taken root and are playing a critical role in urban governance. Spirituality and faith-based institutions - whether local, national or international (i.e. global cross-congregational religious movements and associations) - are attractive sources of community cohesion; psychological and emotional counselling; spiritual healing; and charitable work as they are influential over the daily lives of Western African urban residents, as seen in a heavily populated neighbourhoods such as Jesus Our Saviour in Lagos, Nigeria. While influential, these groups also contribute to the fragmentation of urban spaces along religious lines by locally enforcing their own laws. Similarly, Islamic organizations hold great sway in local urban territories and preserve zones of "self-governance" that replicate functions for which the state would otherwise be responsible, if it were still present in the public sphere and in the running of the daily affairs of Western African societies.

Informal sector actors

In general, Western African cities are characterized by a retreat of the state from a range of functions. Responsibility for dealing with the infrastructural, institutional and governance challenges that city dwellers face falls to a range of actors that lie outside of municipal and national institutions, extending to international institutions, local associations, international religious networks and migrant associations.[204] Informality persists as a key mode through which employment, land and housing acquisition, trade, service provision and other functions are conducted in Western African urban society. The privatization of urban territory, fragmentation of civil society, as well as piecemeal governance and service provision characterizes the sub-regions cities.[205] In 2001 and 2002 most of the working age populations of cities such as Abidjan, Bamako, Cotonou, Dakar, Lomé, Niamey and Ouagadougou were self-employed (i.e. in excess of 25 per cent, up to between 50 per cent and 60 per cent,[206]) while the formal sector employed at most 15 per cent.[207] The proportion of working age people in these cities with no education ranged from 50-60 per cent.[208]

It is not appropriate to speak of a "quiet encroachment" of informality in Western Africa.[209] Informality is not merely an alternative mode of operation through which conventional infrastructures are encroached upon. Informality is a wholly alternative set of practices, indigenous in origin, which remained unrecognized in law for a long period of time during colonialism, only to find some integration with formal systems in the post-colonial era. The informal sector is arguably the real economy of Western African cities. It is the economy through which sociocultural and economic linkages are formed, interrupted, reproduced and transformed through competitive and cooperative practices. These practices are enabled through a variety of activities that fall outside of formal regulation, control or support, even though formal-informal sector linkages are important. Informality has continued unabated through all the historical changes in Western African societies. It is a *de facto* system of governance and social arrangement.

Urban fragmentation in the sub-region takes on many forms. These may follow ethnic or religious or create autonomous "liberated" zones,[210] but the forms are ultimately heavily determined by income level distributions. The absence of the state from the public sphere is striking in the sub-region's cities, except the pervasive and often corrupt police presence that employs its own version of informality by collecting bribes and favours from the public. The state does not serve as an administrator and regulator of public affairs in any meaningful measure. Where the state retreats from the public sphere, other actors fill the functions that society requires and new independent social forms of order emerge. Even though these may be considered informal in the classical sense, they represent the majority frameworks through which urban governance is socially administered within the citizenry itself. In this sense, informality has greater claim to legitimacy than the state. With daily, direct experience of the futility of these dual systems in operation, the youth are not oblivious to this reality. It is difficult to

predict what will ultimately emerge.

Informal sector farmers, traders and service providers play key roles as producers and employers in urban Western Africa. Often, the ingenuity of the sub-region's cities is revealed through the variety of ways in which informal sector actors seek out and create opportunities, if only just to survive. Harnessing this informal sector energy and insight into urban market needs for goods and services presents opportunities for city governments to diversify production chains and service provisions. This could be achieved through improving credit and financing for informal sector actors and agencies, as well as by setting up supporting agencies (co-operatives, advice centres, skills development agencies) and infrastructures (market infrastructure and water supply for urban farmers), which can stimulate and support informal sector activities.

Gender Empowerment

Gender empowerment shows the potential to stimulate significant social and cultural change in the sub-region's cities. In Abidjan, Bamako, Cotonou, Dakar, Lomé, Niamey and Ouagadougou gender earning gaps are more pronounced than ethnic ones.[211] Gender earning gaps[212] ranged from 50 per cent in Niamey (Niger) to 79.2 per cent in Abidjan (Côte d'Ivoire) (Table 3.13), illustrating the extent of inequity and the importance of tackling the issue in Western African urban society. However, female-led urban households are not necessarily much poorer than those headed by men but the females headed homes tend to be less well educated than their male counterparts.[213] Male-headed households, though, fare worse in urban areas and poverty exceeds that of other households by between three and five times.[214]

Education, improved access to opportunities and family planning are priority areas for central and city governments to engage with gender empowerment.[215] Particular attention should be given to the high proportion of young women in Western African cities.[216] Education, microfinancing and national policy[217] are needed to stimulate gender transformation and to guide local gender empowerment implementation frameworks in urban Western Africa.

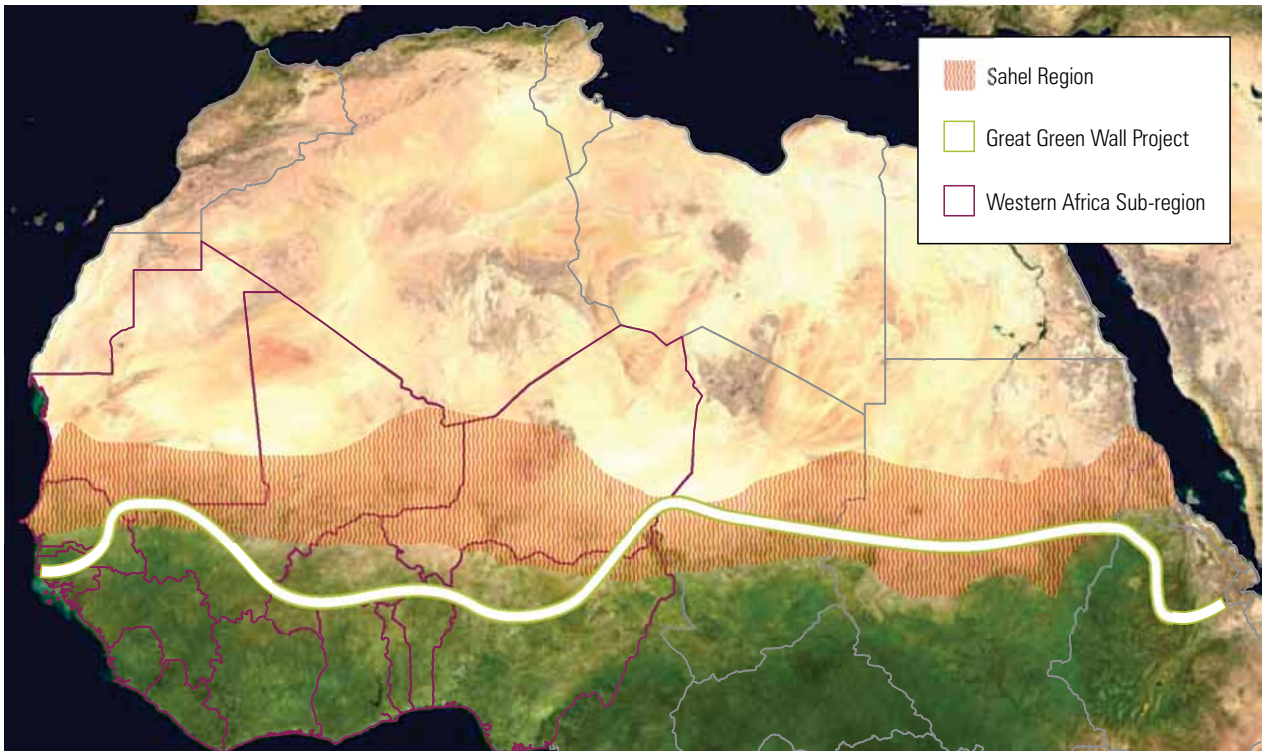
▲ Young shopkeeper in Abomey, Benin. Gender earning gaps are significant in the sub-region's cities. **©Adam Jones, Ph.D.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

TABLE 3.13: **RAW EARNINGS GAP FOR GENDER AND ETHNICITY IN SEVEN WESTERN AFRICAN CITIES**

City	Country	Gender Earning Gap in City (%)	Ethnic Earning Gap in City (%)
Abidjan	Côte d'Ivoire	79.2	27.9
Bamako	Mali	73.6	-18.2
Cotonou	Benin	77.9	-1.5
Dakar	Senegal	55.6	6.8
Lomé	Togo	78.7	-11.3
Niamey	Niger	50.0	1.9
Ouagadougou	Burkina Faso	75.4	-53.7

Source: Adapted from DiAL 2009, pp. 24, Table 1.

3.6 Emerging Issues



The Sahel and the Great Green Wall project. The project is backed by the African Union and is aimed at halting the advancing Sahara Desert by planting a belt of trees 15km (nine miles) wide and 7,775km (4,831 miles) long. **©MJS.** Satellite image source: NASA/Public Domain.

Climate Change, Resource Insecurity and Eco-Migration in the Sahel

Climate change projections for the sub-region (see Section 3.3) indicate growing uncertainty in making predictions, especially for rainfall patterns, floods and droughts. The sub-region's largely coastal urban populations live in high density, often low-lying and vulnerable areas.[218] Floods occur regularly, with cities unprepared for the scale and degree of their destruction. Poor catchment management exacerbates vulnerability to extreme events while weather variability introduced by climate change is exacerbating these. Mali, Mauritania and Sudan are extremely vulnerable to climate change-induced droughts, yet this vulnerability may well extend to other countries, affecting cities such as Bamako, Dakar, Douala, Lagos, Niamey and Ouagadougou.

The southward extension of the Sahel by around 200 km[219] impacts severely on livelihoods and resources, creating millions of climate refugees. Farther inland, the Great Green Wall Project, a 4,000 km planted "green wall" from Senegal to Djibouti, will span 11 countries and aims to stop the southward advance of the Sahel.[220] Capital cities such as Bamako, Dakar, Niamey, Nouakchott and others to the north are vulnerable to the impacts of desertification and will enjoy some protection from the transnational greenbelt project that recognizes the critical role that ecosystems play in protection against extreme events.[221]

Lack of precipitation, particularly in Burkina Faso, Chad, Mali and Niger, led to food shortages in 2011, which extended into the first half of 2012.[222] This was followed by heavy rains and flooding. Heavy downpours during July and August 2012 affected over 1.5 million people across Western and Central African countries, with Niger, Nigeria and Senegal the most affected. Precipitation levels in excess of 150 per cent above normal were recorded in south-eastern Mauritania; nearby areas in Mali; mid and lower levels of the Niger Basin in Cameroon, Mali, Niger and Nigeria; and in the Lake Chad Basin in Niger, Chad, Nigeria and Cameroon.[223]

In August 2012, daily precipitation reached 119 mm in Niamey, 299 mm in Kayes (Mali), 179 mm in Gambia, 275 mm in Bida (Nigeria) and 151 mm in Cap Skirring

▲ Lagos's Makoko, the "floating settlement", which is particularly vulnerable to sea level rise and storm surges. **©Heinrich-Böll-Stiftung.** Licensed under the Creative Commons Attribution-Share Alike 2.0 Generic license.

(Senegal).[224] Not only the quantity, but also the variability in precipitation over this period was significant. In 2011, the city of Agadez (Niger), received half of its annual precipitation (i.e. 112 mm) by June, whereas in 2012 it was dry till June,[225] after which precipitation was extremely high. Niamey received only 35 per cent of its annual precipitation between January and July 2012, followed by above average rains and floods.[226] Bobo-Dioulasso (Burkina Faso) received twice its average rainfall in July.[227] Niamey's vulnerability to flooding is especially severe since more than 200 mm of rain can fall in an hour.[228] The coastal cities of Lagos (some parts of which are two metres below sea level) and Port Harcourt (Nigeria) are subject to flash floods with low-lying slum settlements being particularly vulnerable.[229] Accra and Kumasi (Ghana), and Freetown (Sierra Leone) have been severely affected in recent decades[230] and poor drainage systems in these cities exacerbate susceptibility.

Climate change impacts are already driving conflict in Western African regions that border the Sahel.[231] Declining rainfall and desertification have driven agriculturalists and pastoralists southward, intensifying conflict over land and water. The ethnic diversity of northern West Africa contributes to the potential for conflict over resources. Local Sahel communities have developed conflict mediation systems but these have largely failed to prevent the escalation of clashes.[232] These conflicts increase the migration to cities, as well as reduce agricultural produce. An increase in large dam construction in Western Africa is a further source of tension,[233] especially because of the high levels of regional interdependency on catchment systems.

Sea Level Rise

Coastal cities in the sub-region (such as Accra, Cotonou and Lagos) are particularly vulnerable to increased storm surges and coastal erosion.[234] Lagos's Makoko, the "floating settlement", which is on reclaimed land, is particularly vulnerable with increasing spring tides and peak flows of sea level already having an impact.[235]

Climate Change and Urban Household Vulnerability

Individual urban households are also vulnerable to the impacts of climate change. Remote effects such as climate-related factors in major agro-production areas (for example drought, flooding or natural disasters in the United States Midwest Corn Belt, or the Siberian wheat growing region) can have major impacts upon global food prices, putting additional pressure on local urban household's budgets through increased costs of food obtained from global markets. Local effects such as climate-related migration, drought, flooding and extreme events can also increase poor urban household vulnerability. Resource scarcities, for example which drive up the global price of oil, can likewise impact

▲
An internet center in Accra, Ghana. Accra is becoming a regional telecommunications hub. **©Jonathan Ernst / World Bank.** Licensed under the Creative Commons Attribution 2.0 Generic license.

heavily on imported foods, rendering the poor even more insecure.

At the household level, the costs of water, energy, food and transport all combine to consume the major share of the household budgets of the poor. Double, triple and even quadruple price-squeeze effects can result from the interactions between fluctuating prices in the aforementioned sectors. In this respect, measures that increase household level resilience to climate change impacts, as well as to global resource scarcities and price hikes (e.g. in oil, coal and food), are required. Easing pressure on household budgets through local, decentralized approaches, including promotion of urban agriculture, can free up money.

Cities, Growth Hubs and Regional Integration

As previously outlined, the Western African region has recently experienced a mining boom, as well as new discoveries of oil and natural gas. At the same time, soaring global food prices led to a shift in foreign direct investment into Western Africa, away from extractives, towards the agricultural sector.[236] Remittances into the sub-region remained large, boosting private equity funds and real estate investment.[237]

Conditions for sub-regional growth and integration have been spurred on by emerging business, educational and cultural hubs[238] as well as by a growing middle class.[239] Business hubs are emerging due to regional expansion, with Lagos evolving as a key banking centre, while Accra is becoming one for telecommunications.[240] Education hubs are forming in areas where knowledge centres and information communications technology come together and work to mutual benefit, as in Accra. Cultural hubs are emerging around music and film. Locally-produced, low-budget "Nollywood" films have a strong regional and continental market.[241] "Afrobeats" has emerged as a strong musical genre which appeals widely to Western African youth. Senegalese and Malian music has reached an international market and has great potential for growth.[242] Lagos is a key innovator of musical traditions. Religion, too, plays a key role in regional integration; that is to say where regional[243] and transnational Christian churches[244] as well as militant Islamic movements are concerned (e.g. Al Qaida in the Islamic Maghreb, or AQIM).

Transnational religious movements are taking advantage of deregulated state media to build private enterprises that impact powerfully on the circulation of images and the creation of subjects and publics[245] on the continent.

Shared energy infrastructure agreements such as the West African Power Pool (see Box 3.7), and regional transport corridors linking cities from east to west and inland locations to coastal ports and port infrastructure promise to further spur sub-regional economic integration.[246] In addition, the free movement of ECOWAS citizens across borders without the need for passports is contributing to regional integration, although the system that guarantees this movement requires improvement if such integration is to be realized in terms of labour, goods and services.

▲ A member of an AQIM Touareg brigade which aims to control large areas of the Sahel. **©Magharebia.** Licensed under the Creative Commons Attribution 2.0 Generic license.

Conflict

In recent years, conflict with Islamic militants in Western Africa has escalated. AQIM or militant groups under its influence have been launching kidnappings, attacks, arrests and bombings in the Sahel[247] besides trafficking cocaine through northern Mali.[248] The French Embassy in Bamako, Mali, was bombed in January 2011, and shortly afterwards two French nationals were kidnapped in Niamey, Niger. Nouakchott, the capital of Mauritania, was bombed in February 2011[249] in a failed bid to kill the country's president.

In Nigeria, Boko Haram *(Jamaatul Ahjilsunnah lidawati wal Jihad)* has been responsible for bombings and shootings; targeting bars and places of Christian worship in major and small urban centres in the north of the country. In urban zones where the population is largely following a faith-based composition, such as "Jesus Our Saviour" in Lagos, segregation and intolerance can exacerbate pre-existing (often historical or ethnic) conflicts. Large numbers of disenfranchised and unemployed youth, who dominate the demographics of the Western African region as well as its cities, are ideal breeding grounds for radicalization, whether by religious or ethnic extremists, youth gangs, criminal organizations and drug or human trafficking gangs. Inequality is strongly linked to sectarian and ethnic violence in the region[250] and this is especially the case with urban inequality resulting from migration.[251]

ENDNOTES

1 Potts, D. (2012). "Whatever happened to Africa's rapid urbanisation?" Africa Research Institute, Counterpoints, February 2012. p. 6 & 10.

2 *Ibid*, p. 3.

3 UNOWA (2007). Urbanization and Insecurity in West Africa. Population Movements, Mega Cities and Regional Stability, UNOWA Issue Papers, United Nations Office for West Africa (UNOWA), October 2007, p. 11.

4 Africapolis (undated), Urbanization Trends in West Africa 1950-2020. Available online www.afd.fr/webdav/site/afd/shared/PUBLICATIONS/THEMATIQUES/autres-publications/BT/0808ProjetFicheResumeeAfricapolisV4-en.pdf. Accessed on: 13 May 2013, p. 2; Hitimana, L., Heinrigs, P., Trémolières, M. (2011). West African Futures: Settlement, Market and Food Security, Sahel and West Africa Club (SWAC) Secretariat/ OECD, No. 1, June 2011, p. 1.

5 Bah, M., Cissé, S., Diyamett, B. Diallo, G., Lerise, F., Okali, D., Okpara, E., Olawoye, J., and Tacoli, C. (2003). Changing rural-urban linkages in Mali, Nigeria and Tanzania, *Environment and Urbanization,* Vol. 15, no. 1, pp. 13-24, p. 15.

6 *Ibid*, p. 18.

7 *Ibid*, p. 20.

8 World Urbanization Prospects (2011). *World Urbanization Prospects: The 2011 Revision*, United Nations Departments of Economic and Social Affairs (UNDESA), Population Division, April 2011.

9 Africapolis (undated). Africapolis: Urbanization Trends in West Africa 1950-2020, accessed from www.afd.fr/webdav/site/afd/shared/PUBLICATIONS/THEMATIQUES/autres-publications/BT/0808ProjetFicheResumeeAfricapolisV4-en.pdf on 13 May 2013.

10 World Urbanization Prospects (2011). *World Urbanization Prospects: The 2011 Revision*, United Nations Departments of Economic and Social Affairs (UNDESA), Population Division, April 2011.

11 *Ibid*

12 AEO Western Africa (2012). *African Economic Outlook 2012*. Western African Countries, African Development Bank, Development Centre of the Organisation for Economic Co-operation and Development (OECD DEV), United Nations Development Programme, United Nations Economic Commission for Africa, p. 4-5.

13 Ibid, p. 4; IMF REO (2012). *Regional Economic Outlook. Sub-Saharan Africa. Maintaining Growth in an Uncertain World,* World Economic and Financial Services, International Monetary Fund (IMF), October 2012, website: www.imf.org, p. 2.

14 *Ibid*, p. vii.

15 AEO Western Africa (2012). *African Economic Outlook 2012*. Western African Countries, African Development Bank, Development Centre of the Organisation for Economic Co-operation and Development (OECD DEV), United Nations Development Programme, United Nations Economic Commission for Africa, p. 4.

16 UNECA/AU ERA (2012). *Economic Report on Africa 2012. Unleashing Africa's Potential as a Pole of Economic Growth,* United Nations Economic Commission for Africa (UNECA), African Union (AU) (Ethiopia: Addis Ababa), p. 37.

17 AEO Western Africa (2012). *African Economic Outlook 2012*. Western African Countries, African Development Bank, Development Centre of the Organisation for Economic Co-operation and Development (OECD DEV), United Nations Development Programme, United Nations Economic Commission for Africa, p. 5.

18 IMF REO (2012). *Regional Economic Outlook. Sub-Saharan Africa. Maintaining Growth in an Uncertain World,* World Economic and Financial Services, International Monetary Fund (IMF), October 2012, website: www.imf.org, p. 2.

19 Schumacher, I. (2009). "Sierra Leone sees iron ore investment", *Miningmx*, 18 September 2009, www.miningmx.com/news/ferrous_metals/Sierra-Leone-sees-iron-ore-investment.htm; Reuters (2011). "London Mining starts up Sierra Leone iron ore", 2 December 2011, accessed from www.miningmx.com/news/ferrous_metals/London-Mining-starts-up-Sierra-Leone-iron-ore.htm on 13 May 2013.

20 Reuters Online (2012). "Niger says more oil found in CNPC's Agadem", *Reuters Online,* 3 August 2012, accessed from http://in.reuters.com/article/2012/08/03/niger-oil-idINL6E8J381420120803 on 13 May 2012; Xe Currency and Forex News (2013). "China's CNPC in Niger oil pact with Taiwan's CPC", *Xe Currency and Forex News* , accessed from www.xe.com/news/2013-03-29%2000:44:00.0/3280865.htm on 13 May 2012.

21 ADB RISP (2011). *Regional Integration Strategy Paper for West Africa 2011-2015*, African Development Bank (ADB), African Development Fund, Regional Departments – West (ORWA/ ORWB), Regional Integration and Trade Department (ONRI), March 2011, p. i, 5.

22 *Ibid*, p. 5.

23 AEO Western Africa (2012). *African Economic Outlook 2012*. Western African Countries, African Development Bank, Development Centre of the Organisation for Economic Co-operation and Development (OECD DEV), United Nations Development Programme, United Nations Economic Commission for Africa, p. 4.

24 ADB RISP (2011). *Regional Integration Strategy Paper for West Africa 2011-2015*, African Development Bank (ADB), African Development Fund, Regional Departments – West (ORWA/ ORWB), Regional Integration and Trade Department (ONRI), March 2011, p. 5; see later section 3.6.1 and 3.6.2 on Emerging Issues.

25 *Ibid*, p. 5: see Graph 4: Source ADB Statistics Department April 2011.

26 AEO Western Africa (2012). *African Economic Outlook 2012*. Western African Countries, African Development Bank, Development Centre of the Organisation for Economic Co-operation and Development (OECD DEV), United Nations Development Programme, United Nations Economic Commission for Africa, p. 5.

27 *Ibid*, p 6.

28 ADB RISP (2011). *Regional Integration Strategy Paper for West Africa 2011-2015*, African Development Bank (ADB), African Development Fund, Regional Departments – West (ORWA/ ORWB), Regional Integration and Trade Department (ONRI), March 2011,p. 9-10.

29 *Ibid*, p. 5: see Graph 4: Source ADB Statistics Department April 2011.

30 The multidimensional poverty index (MPI) *"looks at overlapping deprivations in health, education and standard of living … (t)he MPI is the product of the multidimensional poverty headcount (the share of people who are multidimensionally poor) and the average number of deprivations that each multidimensionally poor household experiences (the intensity of their poverty)"*. Source: UNDP (2013). *Human Development Report 2013. The Rise of the South: Human Progress in a Diverse World,* United Nations Development Programme, p. 27.

31 ADB (2011). *African Development Bank*. The Middle of the Pyramid: Dynamics of the Middle Class in Africa, Chief Economist Complex, African Development Bank, market Brief, April 20 2011, p. 2.

32 *Ibid*, p. 2.

33 UNDP (2011).*Human Development Report 2011. Sustainability and Equity: A Better Future for All,* United Nations Development Programme, p. 143.

34 UNDP (2013). *Human Development Report 2013. The Rise of the South: Human Progress in a Diverse World,* United Nations Development Programme, p. 143 & 160.

35 ADB (2012). *African Development Bank. Statistical Yearbook 2012,* African Development Bank (ADB), p. 47.

36 UNECA/AU ERA (2012). *Economic Repofrt on Africa 2012. Unleashing Africa's Potential as a Pole of Economic Growth,* United Nations Economic Commission for Africa (UNECA), African Union (AU) (Ethiopia: Addis Ababa), p. 37.

37 AEO Western Africa (2012). *African Economic Outlook 2012*. Western African Countries, African Development Bank, Development Centre of the Organisation for Economic Co-operation and Development (OECD DEV), United Nations Development Programme, United Nations Economic Commission for Africa, p. 110.

38 These are the Islamist Ansar Dine and Movement for Oneness and Jihad in West

ENDNOTES

Africa (MOJWA) versus the separatist group National Movement for the Liberation of Azawad (MNLA).

39 *Ibid*, p. 4.

40 Ismail. N. (2011). "Whether it comes from the West or rising powers like China, foreign direct investment has made a significant contribution to Western Africa's economic development". Position paper for Centre for Security Studies (CSS), ETH Zurich, Switzerland.

41 Stearns, S. (2010). China and Nigeria Building Huge Free Trade Zone in Lagos, Voice of America, 2 September 2010, accessed from www.voanews.com/content/china-and-nigeria-building-huge-free-trade-zone-in-lagos-102148814/155724.html on 13 May 2013.

42 ECOWAS/WAEMU/EU(2008). *European Community – West Africa. Regional Strategy Paper and Indicative Programme 2008-2013, Economic Community of West African States (ECOWAS)*, West African Economic and Monetary Union (WAEMU), European Union (EU), 30 July 2008, p. 17.

43 *Ibid*, p. 32.

44 UN-Habitat (2008). State of African Cities Report 2008: A Framework for Addressing Urban Challenges in Africa, Nairobi, p. p. 52.

45 ACET (2012). *West African Trends Newsletter. Special Issue: Reflections on 2011.* A newsletter for the Rockefeller Foundation prepared by the African Centre for Economic Transformation (ACET), Issue 1 2012, p. 18.

46 ECOWAS/WAEMU/EU(2008). *European Community – West Africa. Regional Strategy Paper and Indicative Programme 2008-2013, Economic Community of West African States (ECOWAS)*, West African Economic and Monetary Union (WAEMU), European Union (EU), 30 July 2008, p. 33, 54 & 60.

47 ADB RISP (2011). *Regional Integration Strategy Paper for West Africa 2011-2015*, African Development Bank (ADB), African Development Fund, Regional Departments – West (ORWA/ORWB), Regional Integration and Trade Department(ONRI), March 2011, p. 8-9.

48 *Ibid*, p. 8-9.

49 *Ibid*, p. 8.

50 *Ibid*, p. 9.

51 *Ibid*, p. 14-19; Annex 1 in source.

52 Metzger, M. (2008). "Regional cooperation and integration in sub-Saharan Africa", UNCTAD (United Nations Conference on Trade and Development), Discussion Paper No. 189, September 2008, p. 22.

53 ECOWAS/CSAO/SWAC/OECD (2006). *Migration,* Atlas on Regional Integration in West Africa, Population Series, Economic Community of West African States (ECOWAS), Sahel West African Club (CSAO/SWAC), Organization for Economic Cooperation and Development (OECD), p. 13-15.

54 *Ibid*, p. 10.

55 *Ibid*, p. 13.

56 Potts, D. (2012). Whatever happened to Africa's rapid urbanisation?, Africa Research Institute, Counterpoints, February 2012, p. 14.

57 ECOWAS/CSAO/SWAC/OECD (2006). *Migration,* Atlas on Regional Integration in West Africa, Population Series, Economic Community of West African States (ECOWAS), Sahel West African Club (CSAO/SWAC), Organization for Economic Cooperation and Development (OECD), p. 13.

58 *Ibid*, p. 10.

59 ADB RISP (2011). *Regional Integration Strategy Paper for West Africa 2011-2015*, African Development Bank (ADB), African Development Fund, Regional Departments – West (ORWA/ORWB), Regional Integration and Trade Department (ONRI), March 2011, p. 9.

60 This is a Gini-coefficient measure - which ranges from 0 to 1 and where 1 represents complete equality.

61 Ibid, p. 10.; no date was given by the source.

62 Herrera, K., C. Nordman, X Oudin and F. Roubaud. (2011). "Informal Sector and Informal Employment: Overview of Data for 11 Cities in 10 Developing Countries." In: WIEGO Urban Policies Research Report Resource Document. Available at: http://wiego.org/sites/wiego.org/files/publications/files/Herrera_WIEGO_WP9.pdf, accessed 6 June 2013.

63 ADB RISP (2011). *Regional Integration Strategy Paper for West Africa 2011-2015*, African Development Bank (ADB), African Development Fund, Regional Departments – West (ORWA/ORWB), Regional Integration and Trade Department (ONRI), March 2011, p. 10.

64 DiAL (2009). *Decomposing Gender and Ethnic Earning Gaps in Seven West African Cities*, Nordman Christophe, Robilliard Anne-Sophie and Roubaud Fancous (authors), DiAL Document de Travail DT/2003/09, p. 2.

65 ADB RISP (2011). *Regional Integration Strategy Paper for West Africa 2011-2015*, African Development Bank (ADB), African Development Fund, Regional Departments – West (ORWA/ORWB), Regional Integration and Trade Department (ONRI), March 2011, p. 10.

66 *Ibid*, p. 5.

67 Olaseni, M. & Alade, W. (2012). "Vision 20: 2020 and the challenges of infrastructural development in Nigeria", *Journal of Sustainable Development,* vol. 5, No. 2 February 2012, www.ccsenet.org/jsd, website: http://dx.doi.org/10.5539/jsd.v5n2p63, p 63.

68 *Ibid*, p. 63.

69 Ogunlesi, T., (2012)., *In Lagos, a BRT System Struggles to Make an Impact*, Perspectives, No. 3.12, pp..24-26, p. 24.

70 Such as gender inequalities, drug production and trafficking on a global scale, political insecurity and conflict, tedious bureaucracies, corruption, and socio-economic and ethnic segregation.

71 Fuwape, J.A. and Onyekwelu, J.C. (2011). Urban forest development in West Africa: benefits and challenges, *Journal of Biodiversity and Ecological Sciences*, vol. 1, No. 1, Issue 1, p. 87.

72 ICLEI CBO (2012). Cities and Biodiversity Outlook. Action and Policy. A Global Assessment of the Links Between Urbanization, Biodiversity and Ecosystem Services, Local Governments for Sustainability (ICLEI), Secretariat for the Convention on Biological Diversity, Stockholm Resilience Centre, p. 8.

73 Hodson, M., Marvin, S., Robinson, B. Swilling, M.(2012). "Reshaping urban infrastructure material flow analysis and transitions analysis in an urban context", *Journal of Industrial Ecology*, In Press, website: www.wileyonlinelibrary.com/journal/jie

74 IUCN (2004). "Réduire la vulnérabilité de l'Afrique de l'Ouest aux impacts du climat sur les ressources en eau, les zones humides et la desertification", International Union for the Conservation of Nature (IUCN). In Sahel and West Africa Club (SWAC) (2008). *Climate and Climate Change*, Atlas on regional integration in West Africa, Environment Series, , ECOWAS-SWAC/OECD, January 2008, p. 14.

75 ECOWAS/ CSAO/SWAC/OECD (2008). *Climate and Climate Change,* Atlas on Regional Integration in West Africa, Environment Series, Economic Community of West African States (ECOWAS), Sahel West African Club (CSAO/SWAC), Organization for Economic Cooperation and Development (OECD); In UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine), p. 29 see Box 3.

76 *Ibid*, p. 1.

77 *Ibid*, p. 29, Box 3.

78 UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine), p. 30.

79 IFAD (2010). *Addressing climate change in West and Central Africa*, International Fund for Agricultural Development (IFAD).f

80 UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine) UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine), p. 30.

81 UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine), p. 31.

82 *Ibid*, p. 31.

ENDNOTES

83 *Ibid*, see Figure 4 from IPCC in source.

84 UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine), p. 35.

85 *Ibid*, p. 35.

86 *Ibid*, p. 35.

87 *Ibid*, p. 35.

88 *Ibid*, p. 35.

89 Sahel and West Africa Club (SWAC) (2008). *Climate and Climate Change*, Atlas on Regional Integration in West Africa, Environment Series, ECOWAS-SWAC/OECD, p. 11, map 5, accessed from www.oecd.org/swac/publications/40121025.pdf on 14 May 2013.

90 Boko, M., I. Niang, A. Nyong, C. Vogel, A. Githeko, M. Medany, B. Osman-Elasha, R. Tabo and P. Yanda, (2007). *Africa. Climate Change 2007: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J., and Hanson, C.E. (eds.), *Cambridge University Press*, (UK: Cambridge), 433-467; UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine), p. 39.

91 UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine), p. 46.

92 *Ibid*, p. 39.

93 Boko, M. et al (2007), p. 437.

94 IFAD (2010). *Addressing climate change in West and Central Africa*, International Fund for Agricultural Development (IFAD)., no page numbers in source.

95 *Ibid*

96 *Ibid*

97 ECOWAS/ CSAO/SWAC/OECD (2008). *Climate and Climate Change,* Atlas on Regional Integration in West Africa, Environment Series, Economic Community of West African States (ECOWAS), Sahel West African Club (CSAO/SWAC), Organization for Economic Cooperation and Development (OECD), p. 19.

98 *Ibid*, p. 19.

99 AMAP SWIPA 2011; In UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine), p. 47.

100 UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine), p. 47; Boko, M., I. Niang, A. Nyong, C. Vogel, A. Githeko, M. Medany, B. Osman-Elasha, R. Tabo and P. Yanda, (2007). *Africa. Climate Change 2007: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J., and Hanson, C.E. (eds.), *Cambridge University Press*, (UK: Cambridge), 433-467; IFAD (2010). *Addressing climate change in West and Central Africa*, International Fund for Agricultural Development (IFAD)., no page numbers in source.

101 Boko, M., I. Niang, A. Nyong, C. Vogel, A. Githeko, M. Medany, B. Osman-Elasha, R. Tabo and P. Yanda, (2007). *Africa. Climate Change 2007: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J., and Hanson, C.E. (eds.), *Cambridge University Press*, (UK: Cambridge), 433-467, p. 450.

102 *Ibid*, p. 451.

103 UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine), p. 47.

104 ECOWAS/ CSAO/SWAC/OECD (2008). *Climate and Climate Change,* Atlas on Regional Integration in West Africa, Environment Series, Economic Community of West African States (ECOWAS), Sahel West African Club (CSAO/SWAC), Organization for Economic Cooperation and Development (OECD), p. 21.

105 *Ibid*, p. 22.

106 AGRHYMET 2010; In UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine), p. 38.

107 FAO GGC (2012). Growing Greener Cities in Africa. First Status Report on Urban and Peri-Urban Horticulture in Africa, Food and Agricultural Organization of the United Nations (FAO), p. 15.

108 UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine), p. 46.

109 *Ibid*, pp. 8, 54, 72

110 ECOWAS/ CSAO/SWAC/OECD (2008). *Climate and Climate Change,* Atlas on Regional Integration in West Africa, Environment Series, Economic Community of West African States (ECOWAS), Sahel West African Club (CSAO/SWAC), Organization for Economic Cooperation and Development (OECD), p. 18.

111 *Ibid*, p. 34.

112 AGRHYMET 2010; In UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine), p. 34.

113 *Ibid*, p. 34.

114 FAO (Food & Agriculture Organization). (2008). Food climate E-newsletter 2. Accessed from: www.fao.org/climatechange/53883/en/ on 13 May 2013, December 2008. In UNEP (2011). Livelihood Security. Climate Change, Mitigation and Conflict in the Sahel, United Nations Environment Programme (Geneva: Châtelaine), p. 34.

115 IPCC *(Intergovernmental Panel on Climate Change).* (2007).Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J., and Hanson, C.E. (eds.), *Cambridge University Press*, (UK: Cambridge), 433-467. In ECOWAS/ CSAO/SWAC/OECD (2008). *Climate and Climate Change,* Atlas on Regional Integration in West Africa, Environment Series, Economic Community of West African States (ECOWAS), Sahel West African Club (CSAO/SWAC), Organization for Economic Cooperation and Development (OECD), p. 16.

116 World Bank (2012), *Food Price Watch*, Poverty Reduction and Equity Group, Poverty Reduction and Economic Management (PREM) Network, The World Bank, Volume 3, Issue 12, November 2012.

117 FAO GGC (2012). Growing Greener Cities in Africa. First Status Report on Urban and Peri-Urban Horticulture in Africa, Food and Agricultural Organization of the United Nations (FAO), p. 21.

118 *Ibid*, p. 24.

119 *Ibid*, p. 22.

120 *Ibid*, p. 24.

121 Drechsel, P., Graefe, S., Fink, M. (2007). "Rural-urban food, nutrient and virtual water flows in selected West African cities", (IWMI Research Report 115), International Water Management Institute (Colombo: Sri Lanka), p. 15-16.

122 UNEP (2013) *City-Level Decoupling: Urban resource flows and the governance of infrastructure transitions*. A Report of the Working Group on Cities of the International Resource Panel. Swilling, M., Robinson, B., Marvin, S. and Hodson, M., p. 68.

123 Urban sustainability, as outlined by Professor Edgar Pieterse of the African Centre for Cities (ACC) at the University of Cape Town, is contingent on social, economic, ecological, physical (infrastructural, technological) and political sustainability (Pieterse 2011).

124 Eyoh, D. (2007). "Politics of urban identity in Anglophone Africa", in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp. 117-134.

125 UNOWA (2007). Urbanization and Insecurity in West Africa. Population Movements, Mega Cities and Regional Stability, UNOWA Issue Papers, United Nations Office for West Africa (UNOWA), October 2007, p. 9-12.

126 *Ibid*, p. 15.

ENDNOTES

127 *Ibid*, p. 18.

128 ICG (2004). *Liberia and Sierra Leone: Rebuilding Failed States*, ICG (International Crisis Group) Africa Report No. 87, December 2004, p. 16; In UNOWA (2007). Urbanization and Insecurity in West Africa. Population Movements, Mega Cities and Regional Stability, UNOWA Issue Papers, United Nations Office for West Africa (UNOWA), October 2007, p. 12)

129 UNOWA (2007). Urbanization and Insecurity in West Africa. Population Movements, Mega Cities and Regional Stability, UNOWA Issue Papers, United Nations Office for West Africa (UNOWA), October 2007, p. 35.

130 Diouf, M. (2007). "Social crises and political restructuring in West African cities", in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp.95-116., p. 105.

131 UN-Habitat (2008/9). *State of the World's Cities 2008/9: Harmonious Cities*, United Nations Human Settlements Programme, UN HABITAT, London, Sterling, VA, p. 104.

132 UN-Habitat (2009). Global Urban Indicators – Selected Statistics: Monitoring the Habitat Agenda and the Millennium Development Goals. Available online: www.unhabitat.org/downloads/docs/global_urban_indicators.pdf. Table 9.

133 Stren. R. and Eyoh, D. (2007). Decentralisation and urban development in West Africa, in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp. 1-24, p. 2.

134 That is, according to the Lagos State Traffic Management Authority (LASTMA); see Ogunlesi 2012, 25.

135 UN-Habitat (2009). Global Urban Indicators – Selected Statistics: Monitoring the Habitat Agenda and the Millennium Development Goals. Available online: www.unhabitat.org/downloads/docs/global_urban_indicators.pdf. Table 11.

136 WHO & UNICEF (2008). "A snapshot of drinking water and sanitation in Africa. A regional perspective based on new data from the WHO/UNICEF Joint Monitoring Programme for water Supply and Sanitation", *prepared for AMCOM as a contribution to the 11th Summit of Heads of State and Government of the African Union, with special theme: Meeting the Millennium Development Goal on Water and Sanitation 30 June to 1 July 2008*, World Health Organisation (WHO), United Nations Children's Fund (UNICEF), p. 6.

137 SCN News 38 (2010). "Food and nutrition security in West-Africa: opportunities and challenges", Supplement on the 11th Annual ECOWAS Nutrition Forum, United Nations System Standing Committee on Nutrition, No 38 Early-2010, p. 2.

138 FEWSNET (2008). *Food Security in West Africa: Lean Season Markets and Hazards Update August 2008*, joint paper FAO/WFP/CRS/CUKSS/FEWSNET, accessed from: www.reliefweb.int/rw/RWFiles2008.nsf/FilesByRWDocUnidFilename/YSAR-7JESPN-full-report.pdf/$File/full_report.pdf on 13 May 2013; In SCN News 38 (2010). "Food and nutrition security in West-Africa: opportunities and challenges", Supplement on the 11th Annual ECOWAS Nutrition Forum, United Nations System Standing Committee on Nutrition, No 38 Early-2010, p. 2.

139 Sahel and West Africa Club (SWAC) (2007). *Rural Areas and Agricultural Changes*, Atlas on Regional Integration in West Africa, Environment Series, ECOWAS-SWAC/OECD, p. 12-13, map 5, accessed from www.oecd.org/swac/publications/38409569.pdf on 14 May 2013.

140 *Ibid*, p. 12-13, map 10 and 11, accessed from www.oecd.org/swac/publications/38409569.pdf on 14 May 2013.

141 Cofie, O. (undated). Emerging issues in urban and peri-urban agriculture in West Africa: Briefing note, International Water Management Institute (IWMI), RUAF, pp. 1-12, p. 4-6.

142 *Ibid*, p. 4.

143 *Ibid*, p. 5-6.

144 *Ibid*, p. 6.

145 HRAA (2008). *"Hydropower resource assessment of Africa", Water for Agriculture and Energy in Africa.* The Challenges of Climate Change, Ministerial Conference on Water for Agriculture and Energy in Africa: The Challenges of Climate change, Sirte, Libyan Arab Jamahiriya, 15-17 December 2008.

146 ECREEE (2010). "Challenges and Opportunities of scaling-up renewable energy in West Africa", presented by Mr Mahama Kappiah (Executive Director of ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE) at "Power Kick for Africa" – Renewable Energy Policies for Sustainable African Development, Accra, 21-23 June 2010.

147 *Ibid*

148 *Ibid*

149 ECREEE (2010). "Challenges and Opportunities of scaling-up renewable energy in West Africa", presented by Mr Mahama Kappiah (Executive Director of ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE) at "Power Kick for Africa" – Renewable Energy Policies for Sustainable African Development, Accra, 21-23 June 2010, p. 12.

150 *Ibid*, p. 12.

151 *Ibid*, p. 12.

152 Danso, G., Drechsel, P., and Cofie, F. (2005). "Developing policy support on closing rural-urban nutrient recycling for urban and peri-urban agriculture in West Africa: Application of multi-stakeholder processes and approaches", Paper presented at the international conference on urban and peri-urban agriculture, October 2005, Yaounde, Cameroon. International Water Management Institute (IWMI), website: www.agricultures-urbaines.com/IMG/Danso.pdf.

153 Tuani, E.M. (2008). "Managing urbanisation and waste disposal in West Africa, case study of Oblogo Accra-Ghana", May 2008, accessed from www.iswa.org/uploads/tx_iswaknowledgebase/Managing_urbanisation_and_waste_disposal_in_West_Africa_Elom_Tuani.pdf on 13 May 2013, p. 2.

154 Oguweleka, T.C. (2009). "Municipal solid waste characteristics and management in Nigeria", *Iran J. Environ. Health. Sci. Eng.*, vol. 6, No.3, pp. 173-180.

155 *Ibid*, p. 178.

156 Adebola, O.O. (2006). "The roles of informal private sector in integrated solid waste management in the achievement of the millennium development goals (MDGs) in Lagos, Nigeria", *paper presented at the Solid Waste, Health and Millennium Development Goals, CWG-WASH Workshop 2006, Kolkata, India* p. 1-2.

157 Eaton, D. and Hilhorst, T. (2003). "Opportunities for managing solid waste flows in the peri-urban interface of Bamako and Ouagadougou", *Environment and Urbanization*, vol. 15, No. 1, April 2003.

158 UN-HABITAT (2010). *Solid Waste Management in the World's Cities. Water and Sanitation in the World's Cities 2010.* United Nations Human Settlements Programme, (Earthscan: London, Washington DC), p. 2.

159 *Ibid*, p. 48.

160 *Ibid*, p. 129.

161 Rodi , L., Scheinberg, A., Wilson, D.C. (2010). "Comparing solid waste management in the world's cities. Key-note paper at ISWA World Congress 2010, Urban Development and Sustainability – a Major Challenge for Waste Management in the 21st Century, Hamburg, Germany, 15-18 November 2010, p. 13 but no page numbers given)

162 Simone, A. (2002). "Principles and realities of urban governance in Africa", UN-HABITAT Global Campaign on Urban Governance. p. 13.

163 Bocquier & Traoré 2000; in DiAL 2003, p. 7.

164 DiAL (2003). *Migration and Urbanization in Francophone West Africa: A Review Of the Recent Empirical Evidence*, Beauchemin Chris & Bocquier Philippe (authors), DiAL Document de Travail DT/2009-07, p. 9.

165 Diouf, M. (2007). "Social crises and political restructuring in West African cities", in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow

ENDNOTES

Wilson International Center for Scholars, pp.95-116., p. 98.

166 Eyoh, D. (2007). "Politics of urban identity in Anglophone Africa", in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp. 117-134. p., 120.

167 *Ibid*, pp. 117-134, p. 118.

168 Eyoh, D. (2007). "Politics of urban identity in Anglophone Africa", in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp. 117-134, p. 120.

169 *Ibid*, p. 121.

170 *Ibid*, p. 121.

171 *Ibid*, p. 121.

172 Barber, Karin, John Collins, and Alain Ricard. (1997). *West African Popular Theater*, (Oxford: James Currey; Bloomington: Indiana University Press). In Eyoh, D. (2007), The politics of urban identity in Anglophone Africa, In in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp. 1-24, p. 121; Collins, J. (1994). *Highlife Times*. Accra: Anansesem. In Eyoh, D. (2007). The politics of urban identity in Anglophone Africa. In Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp. 1-24, p. 121; Sherwood, S. (2009). "Songs of Senegal", *New York Times*, December 3 2009, website: www.nytimes.com/2009/12/06/travel/06senegalmusic.html?pagewanted=all&_r=0.

173 Haynes, J. (undated). "Nollywood", Long Island University, p. 1., accessed from http://myweb.brooklyn.liu.edu/jhaynes/Haynes/nollywood%20iec%20pfd.doc.pdf on 14 May 2013.

174 Mamdani, M. (1996), *Citizen and Subject. Contemporary Africa and the Legacy of Late Colonialism,* Princeton Studies in Culture/Power/History, Ortner, S.B., Dirks, N.B., Eley, G. (Eds), (Kampala, Fountain Publishers; Cape Town, David Philip; London, James Currey) p. 69-71.

175 Owusu, G. Agye-Mensah, S. (2011). A Comparative Study of Ethnic Residential Segregation in Ghana's Two Largest Cities, Accra and Kumasi, Population and Environment, June 2011, Volume 32, Issue 4, pp 332-352, p. 332.

176 Diouf, M. (2007). "Social crises and political restructuring in West African cities", in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp.95-116., 95.

177 *Ibid*, p. 96.

178 *Ibid*, p. 97.

179 Kwaja, C. (2011). Nigeria's pernicious drivers of ethno-religious conflict, Africa Security Brief, No 14, July 2011, p. 4.

180 *Ibid*, p. 2.

181 *Ibid*, p. 4-6.

182 *Ibid*, p. 2.

183 *Ibid*, p. 6.

184 Mbembe, A. (1992). "Traditions de l'autoritarisme et problemes de government en Afrique sub-Saharienne", *Afrique et Development*, vol. 17 , No. 1, pp. 37-62, p. 179: In Diouf, M. (2007). "Social crises and political restructuring in West African cities", in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp.95-116..

185 Diouf, M. (2007). "Social crises and political restructuring in West African cities", in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp.95-116., p. 99.

186 *Ibid*, p. 101.

187 *Ibid*, pp.1-19, p. 99.

188 Sommers, M. (2003). "Urbanization, war and Africa's youth at risk. Towards understanding and addressing future challenges", Basic Education and Policy Support (BEPS) Activity, p.4.

189 DiAL (2011). Intergenerational Transmission of Self-Employed Status in the Informal Sector: A Constrained Choice or Better Income Prospects? Evidence from Seven West African countries, Pasquier-Doumer Laure (author), DiAL Document de Travail DT/2011-09 2011, p. 2.

190 Diouf, M. (1999). "Urban youth and Senegalese politics: Dakar 1988-1994", In J. Holston, ed., Cities and Citizenship. Durham, NC: Duke University Press. In Eyoh, D. (2007). "Politics of urban identity in Anglophone Africa", p. 124. In Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp. 117-134, p. 117; Diouf, M. (2007). "Social crises and political restructuring in West African cities", in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp.95-116; Eyoh, D. (2007). "Politics of urban identity in Anglophone Africa", in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp. 117-134.

191 Mac-Ikenjima, D. (2008). Youth development, reintegration, reconciliation and rehabilitation in post-conflict West Africa: A framework for Sierra Leone, Liberia and Cote d'Ivoire, International NGO Journal, Vol. 3(9), pp. 146-151, p. 146.

192 ACET (2012). *West African Trends Newsletter. Special Issue: Reflections on 2011.* A newsletter for the Rockefeller Foundation prepared by the African Centre for Economic Transformation (ACET), Issue 1, 14-15.

193 *Ibid*, p. 15.

194 Diouf, M. (2007). "Social crises and political restructuring in West African cities", in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp.95-116., 96; Bah, M., Cissé, S., Diyamett, B. Diallo, G., Lerise, F., Okali, D., Okpara, E., Olawoye, J., and Tacoli, C. (2003). Changing rural-urban linkages in Mali, Nigeria and Tanzania, *Environment and Urbanization*, Vol. 15, no. 1, pp. 13-24,, p. 22.

195 Diouf, M. (2007). "Social crises and political restructuring in West African cities", in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp.95-116., 104.

195 *Ibid*, p. 96.

197 Akintoye 2008, p. 97.

198 Bah, M., et al (2003), p. 17-18.

199 Goodwell Investments (2009). Emerging oppotunties for microfinance in West Africa: Executive summary of report into the growth and investment potential for the period 2009-2013, Goodwell Investments, Alitehia Capital, DARC Foundation and First Bank, p. 1.

200 *Ibid*, p. 1.

201 *Ibid*, p. 2.

202 *Ibid*, p. 2.

203 *Ibid*, p. 3.

204 Diouf, M. (2007). "Social crises and political restructuring in West African cities", in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp.95-116., p. 95.

205 *Ibid*, p. 76.

206 Dimova, R.D., Nordman, C.J. and Roubaud, F. (2008) *Allocation of Labour in Urban West Africa: Implication for Development Policies.* IZA Discussion Paper No. 3558. Accessed at: http://ssrn.com/abstract=1150747, p. 13.

207 *Ibid*, p. 12.

208 *Ibid*, p. 12.

209 Bayat, A. (2000). "From 'dangerous classes' to

ENDNOTES

'quiet rebels': politics of the urban sub-altern in the global south", *International Sociology*, SAGE.

210 Diouf, M. (2007). "Social crises and political restructuring in West African cities", in Eyoh, D. and Stren, R. (eds.) Decentralization and the Politics of Urban Development in West Africa, Comparative Urban Studies Project, Woodrow Wilson International Center for Scholars, pp.95-116., p.10.

211 DiAL (2009). *Decomposing Gender and Ethnic Earning Gaps in Seven West African Cities*, Nordman Christophe, Robilliard Anne-Sophie and Roubaud Fancous (authors), DiAL Document de Travail DT/2003/09.

212 Raw gender earnings gaps at levels of 50.0 in Niger and 77.9 in Benin (i.e. in Table 3.21) indicate that women earn an average of 50 per cent and 22.1 per cent in Niger and Benin, respectively.

213 Oduro, A.D. (2002) Poverty in Ghana. An Analysis of Trends in the 1990s. mimeo. In Oduru, A.D., Aryee, I., (2003). "Investigating chronic poverty in West Africa", Centre for Policy Analysis, Chronic Poverty Research Centre (CPRC) Working Paper No. 28, April 2003, p. 26.

214 Aryee, I., (2003). "Investigating chronic poverty in West Africa", Centre for Policy Analysis, Chronic Poverty Research Centre (CPRC) Working Paper No. 28, April 2003, p. 26.

215 UNOWA (2007). Urbanization and Insecurity in West Africa. Population Movements, Mega Cities and Regional Stability, UNOWA Issue Papers, United Nations Office for West Africa (UNOWA), October 2007, p.19.

216 UN-Habitat (2008/9). *State of the World's Cities 2008/9: Harmonious Cities*, United Nations Human Settlements Programme, UN HABITAT, London, Sterling, VA; Table 9 in source document.

217 UNOWA (2007). Urbanization and Insecurity in West Africa. Population Movements, Mega Cities and Regional Stability, UNOWA Issue Papers, United Nations Office for West Africa (UNOWA), October 2007, p. 19.

218 Boko, M., et al (2007), p. 433-467; IFAD (2010). *Addressing climate change in West and Central Africa*, International Fund for Agricultural Development (IFAD).

219 ECOWAS/ CSAO/SWAC/OECD (2008), p.11.

220 Bascombe, B. (2012). "Senegal begins planting the great green wall against climate change", *The Guardian*, 12 July 2012, website: www.guardian.co.uk/environment/2012/jul/12/senegal-great-green-wall;

221 OSS (2008). "The great green wall initiative", Sahara and Sahel Observatory (OSS), www.oss-online.org/pdf/imv-en.pdf, p. 9.

222 Haeseler, S. (2012). Drought with subsequent floods in the area of Sahel in West Africa 2011/2012 updated: October 2012, p. 1.

223 ACMAD (2012). African Centre Of Meteorological Applications for Development, Flood Report Over West Africa. Synopsis, September 2012.

224 *Ibid*

225 Haeseler, S. (2012). Drought with subsequent floods in the area of Sahel in West Africa 2011/2012 updated: October 2012, p. 4.

226 *Ibid*, p. 4.

227 *Ibid*, p. 1.

228 Weischet, W., Endlicher, W. (2000) Regionale Klimatologie. Teil 2: Die Alte Welt. Teubner, Stuttgart, 628 S; In Haeseler, S. (20120. Drought with subsequent floods in the area of Sahel in West Africa 2011/2012 updated: October 2012, p. 4, p. 6.

229 Action Aid International (2007). *Unjust Waters. Climate Change, Flooding and the Protection of Poor Urban Communities: Experiences from Six African Cities*, Action Aid International, accessed from www.actionaid.org.uk/doc_lib/unjust_waters.pdf, p. 7.

230 *Ibid*

231 ECSP Report (2006/7). *Climate-Related Conflicts in West Africa*, Nyong, Anthony. (author), Report from Africa. Population, Health, Environment and Conflict, ECSP Report Issue 12, Available at: www.wilsoncenter.org/sites/default/files/Nyong12.pdf, p. 36.

232 *Ibid*, p. 37.

233 *Sahel and West Africa Club (SWAC) (2006). Transboundary River Basins, Atlas on Regional Integration in West Africa, Environment Series, ECOWAS-SWAC/OECD, p. 18, map 6, accessed from www.oecd.org/swac/publications/38409569.pdf on 14 May 2013.*

234 IFAD (2010). *Addressing climate change in West and Central Africa*, International Fund for Agricultural Development (IFAD), no page numbers given.

235 Action Aid International (2007). *Unjust Waters. Climate Change, Flooding and the Protection of Poor Urban Communities: Experiences from Six African Cities*, Action Aid International, accessed from www.actionaid.org.uk/doc_lib/unjust_waters.pdf, p. 9.

236 ACET (2012). *West African Trends Newsletter. Special Issue: Reflections on 2011.* A newsletter for the Rockefeller Foundation prepared by the African Centre for Economic Transformation (ACET), Issue 1 2011, p. 8.

237 *Ibid*, p. 8.

238 ACET (2012). *West African Trends Newsletter. Special Issue: Reflections on 2011.* A newsletter for the Rockefeller Foundation prepared by the African Centre for Economic Transformation (ACET), Issue 1, p. 18.

239 *Ibid*, p. 19.

240 *Ibid*, p. 18.

241 *Ibid*, p. 18.

242 Pratt & Ndiaye 2004, referencing overall source doc and not a particular page.

243 ACET (2012). *West African Trends Newsletter. Special Issue: Reflections on 2011.* A newsletter for the Rockefeller Foundation prepared by the African Centre for Economic Transformation (ACET), Issue 1, p. 20.

244 Comaroff, J. and Comaroff, J.L (2008). Faith, in Shepherd, N. and Robins, S. eds., *New South African Keywords* (Auckland Park, South Africa, Jacana Media), p. 94.

245 *Ibid*, p. 94.

246 ADB RISP (2011), p. 8.

247 Goita, M. (2011). "West Africa's growing terrorist threat: confronting AQIM's Sahelian Strategy", Africa Security Brief A Publication of the Africa Centre for Strategic Studies, No. 11. February 2011, 1.

248 *Ibid*, p. 4.

249 *Ibid*, p. 2.

250 ACET (2012), p. 8.

251 *Ibid*, p. 9.

PART FOUR

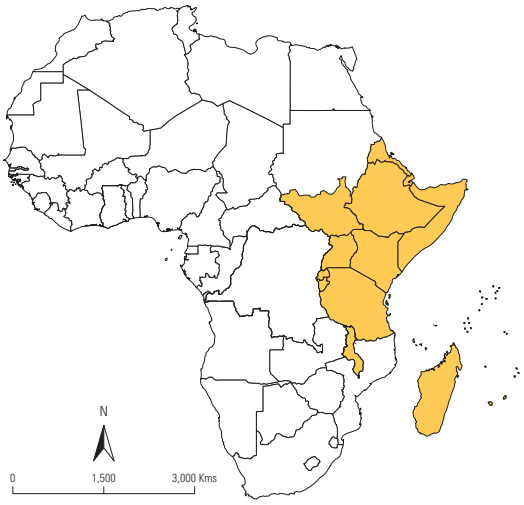
THE STATE OF **EASTERN AFRICAN CITIES**

Port Louis, the capital city of Mauritius. **©Peter Kuchar.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license

4.1
Population and Urbanization

Tanzania's capital Dar es Salaam has overtaken Nairobi and is presently Eastern Africa's largest city. **©moizhusein/Shutterstock**

MAP 2.1: **THE EASTERN AFRICAN SUB-REGION**



For the purposes of this report, the Eastern African sub-region includes 17 countries and territories: Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mayotte (Fr.), Réunion (Fr.), Rwanda, Seychelles, Somalia, South Sudan, Tanzania and Uganda.[1] The population of the sub-region was an estimated 292.7 million in 2011. Of these, 63.5 million (21.7 per cent) lived in areas classified as urban and 229.1 million (78.3 per cent) rural.[2]

In 2011, Eastern Africa remained the world's least urbanized sub-region but with its projected average annual urban growth of 5.35 per cent over the 2010-20 decade, it is by far the world's most rapidly urbanizing. Although South Sudan's low urban population share (18.0 per cent) has influenced the sub-regional urbanization rate for 2011 downwards, the country's relatively small population of 10.3 million, compared to Eastern Africa's total population, caused the overall sub-regional urbanization rate to decline by just 0.2 per cent.

Urbanization Rates (2000-2050)

Not much has changed in the ranking of Eastern African countries by their urbanization levels since the 2010 version of this report. Demographic change typically occurs comparatively slowly and a four-year interval cannot be expected to generate notable shifts unless exigent factors such as major natural- or human-made disasters cause significant population movements. Six countries remain well below 20 per cent urban (see Figure 4.3). Burundi, with a 10.9 per cent urbanization level, remains the sub-region's least urbanized country. It is followed by Uganda (15.6 per cent), Malawi (15.7 per cent), Ethiopia (17.0 per cent), South Sudan (18.0 per cent) and Rwanda (19.1 per cent). There were no changes in ranking at the high end either: the small island of Réunion (an integral department of France) remains the sub-regional leader with 94.3 per cent, followed by Djibouti (77.1 per cent), Seychelles (53.6 per cent) and Mauritius (41.8 per cent).[3]

Perhaps more revealing than changes in the urbanization level are the absolute numbers of additional urban dwellers that must be accommodated, because such figures give a better impression of the urban housing units, additional services and employment required in future.

Whereas in the 2000-2010 decade the Eastern African sub-region saw 20.8 million new urban dwellers, the decades to 2050 are projected to generate multiples of this figure (Tables 4.1 and 4.2). The forecast for the current decade is that the total number of Eastern African urban dwellers will increase by more than 50 per cent. The 2030-2040 decade is projected to add numbers of urban dwellers equivalent to 110 per cent of the entire 2010 urban population of the Eastern African sub-region. The total number of urban dwellers in 2040 is projected to reach a massive five times the 2010 figure. These are highly disturbing numbers given the already significant shares of the urban population in Eastern Africa that are unemployed, living in slum conditions, or both.

The figures in Table 4.1, however, concern projections that may have methodological or other errors embedded, as already explained in Chapter 1.

However, even if the actual numbers and percentages differ from the forecasts, the message embedded in these urban projections - despite that Eastern Africa will remain largely rural in the foreseeable future - should be very clear. As a region, and as individual countries, Eastern Africa will face huge challenges associated with massive urban population increases; monumental new and additional demands for adequate and affordable housing and urban services; and, perhaps most importantly, urban-based income-generation opportunities.

Although the realities differ at the national level, and whereas urban growth is definitely decelerating in most Eastern African countries (that is, declining urbanization rates), the absolute increases in urban population will nevertheless be highly challenging. Exceptions are small island states like Seychelles, Mauritius and, to some extent, Réunion where urban population growth is small in absolute terms or even already declining.

However, given these islands' very limited territories they will also experience urban challenges.

Ethiopia and Tanzania are on particularly strong paths of absolute urban population growth with 41.9 million and 61.5 million respectively between 2010 and 2050. Over that period, Kenya will have to accommodate 38.1 million new urban dwellers, Uganda 31.9 million, Madagascar 27.7 million, Somalia 14.4 million and Malawi 14.0 million. Although these nations will see somewhat lesser absolute (but still quite strong) urban growth, they too need to prepare for their inevitable urban futures. Projections indicate that five countries are now heading for urban majorities: Madagascar and Somalia by 2040; Mauritius, South Sudan and Tanzania by 2050. Eight countries will still be largely rural by 2050: Burundi, Comoros, Eritrea, Ethiopia, Kenya, Malawi, Rwanda and Uganda despite their current strong to moderate absolute urban growth, because of their relatively late entry in the global urban transition (Figure 4.3).

Table 4.3 shows the average annual rates of change of urbanization for Eastern Africa, in decade intervals between 1950 and 2050, revealing some interesting features. Nearly all countries of the sub-region saw their all-time urbanization peak around independence. After that peak, a long-term trend of steady deceleration in annual urbanization rates set in and this trend is projected to continue. However, these decelerating urban growth rates still imply rapidly growing urban populations in absolute terms. Most countries of the sub-region also show secondary urbanization rate peaks around approximately one generation after the primary peak, after which a longer-term deceleration trend sets in again.

Conflict and refugee countries show somewhat different trends, with secondary urbanization peaks correlated with armed conflict, severe political unrest or both in these countries. For example, the 1994 Rwandan genocide coincided with a massive jump in annual urbanization rates because of the two-pronged impacts of increased rural-urban migration, of people seeking refuge and safety in cities, while the genocide lowered the rural population in parallel. Nations such as Ethiopia, Eritrea and Somalia, which experienced or are still experiencing disasters, such as civil conflict and severe droughts also show clear deviations from the broad sub-regional pattern of decelerating urban growth rates, with significantly fluctuating inter-decade urbanization rate changes. Somalia's urbanization rate soared during the 1970-80 decade after a coup, the assassination of its president and the 1977 Ogaden War. Thereafter, probably because of the increasing domestic hostilities, the decade-interval urbanization rates show steady increases, quite different from the general trend in the rest of the sub-region and clearly showing the impacts of conflict on urbanization. Newly independent South Sudan is now making up for decades of conflict-induced urbanization deferral, besides receiving ethnic southward population flows from Sudan.

TABLE 4.1: **EASTERN AFRICA POPULATION DATA (2000-2050)**

Population	2000	2010	2020*	2030*	2040*	2050*
Total (*000)	217,303	284,942	369,095	464,783	571,668	686,342
Urban (*000)	40,054	60,851	93,390	141,289	208,066	294,332
Urban (%)	18.4	21.4	25.3	30.4	36.4	42.9
Rural (%)	81.6	78.6	74.7	69.6	63.6	57.1

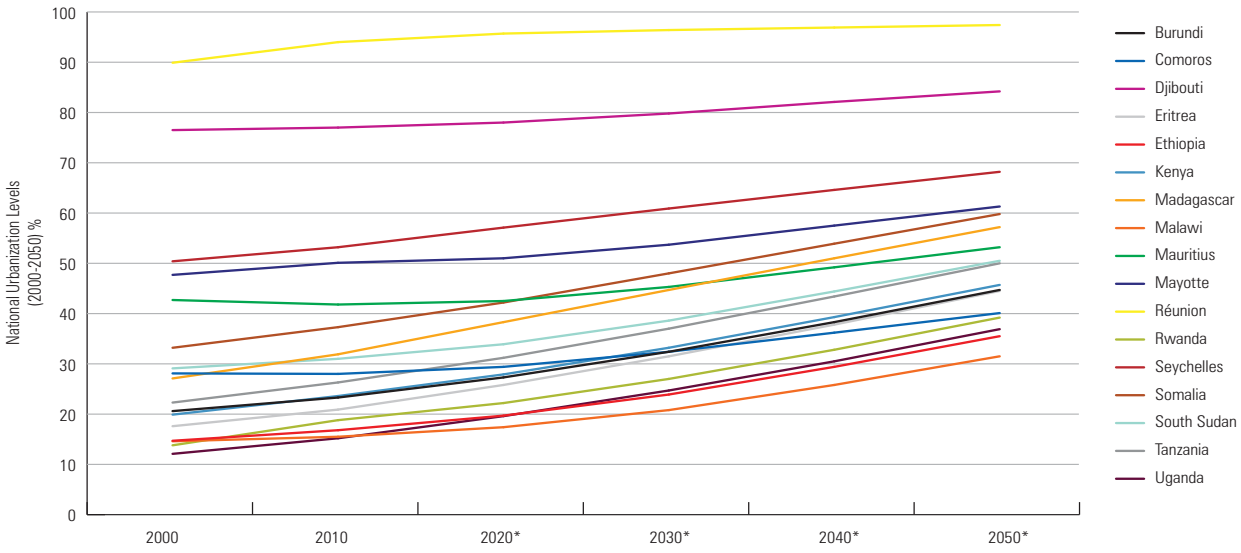
** Projections*
Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York 2012.

TABLE 4.2: **DECADE-INTERVAL ABSOLUTE INCREASE OF THE URBAN POPULATION 2000-2050 (THOUSANDS)**

Country	2000-10	2010-20*	2020-30*	2030-40*	2040-50*	2010-50*
Burundi	366	485	631	815	1,006	3,303
Comoros	48	68	102	140	166	524
Djibouti	124	148	176	180	175	803
Eritrea	452	668	877	1,148	1,360	4,505
Ethiopia	4,234	5,972	8,483	10,883	12,363	41,935
Kenya	3,332	5,126	7,193	9,920	12,514	38,085
Madagascar	2,447	5,126	5,309	6,697	8,141	27,720
Malawi	675	1,284	2,274	3,884	5,912	14,029
Mauritius	33	35	53	56	40	217
Mayotte	31	36	46	58	60	231
Réunion	131	100	74	54	32	391
Rwanda	883	1,121	1,629	2,345	3,099	9,077
Seychelles	6	5	5	4	2	22
Somalia	1,019	1,689	2,685	3,834	5,175	14,402
South Sudan	683	864	1,230	1,807	2,313	6,897
Tanzania	4,190	7,246	11,251	16,433	22,375	61,495
Uganda	2,142	3,815	5,880	8,520	11,533	31,890
Eastern Africa	20,796	33,788	47,898	66,778	86,266	255,526

** Projections*
Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York 2012.

FIGURE 4.3: **NATIONAL URBANIZATION LEVELS (PERCENTAGE OF TOTAL COUNTRY POPULATIONS)**



** Projections*
Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York 2012.

TABLE 4.3: **DECADE AVERAGE RATE OF CHANGE IN URBAN POPULATION, 1950-2050**

	1950-60	1960-70	1970-80	1980-90	1990-00	2000-10	2010-20	2020-30	2030-40	2040-50
Eastern Africa	**5.41**	**6.02**	**6.24**	**4.88**	**4.14**	**3.83**	**4.13**	**4.00**	**3.76**	**3.39**
Burundi*	3.45	3.34	7.61	6.73	4.03	5.29	4.34	3.77	3.41	3.05
Comoros	8.54	6.44	5.03	4.69	2.58	2.63	2.88	3.17	3.15	2.79
Djibouti	5.48	8.49	8.99	5.51	2.75	2.00	1.95	1.93	1.64	1.37
Eritrea*	5.38	5.16	4.22	3.42	2.59	5.30	4.75	4.03	3.61	3.07
Ethiopia*	5.37	5.39	3.94	5.03	4.60	3.63	3.57	3.56	3.25	2.74
Kenya	5.64	6.63	7.83	4.38	4.59	4.29	4.30	3.99	3.74	3.32
Madagascar*	5.34	5.31	5.46	5.11	4.49	4.62	4.61	4.09	3.53	3.09
Malawi	4.27	5.72	7.22	6.52	4.14	3.45	4.41	4.90	5.08	4.74
Mauritius	4.14	4.63	1.61	1.30	0.93	0.62	0.63	0.87	0.84	0.58
Réunion	6.36	5.59	3.48	6.01	2.90	1.80	1.18	0.80	0.54	0.31
Rwanda*	5.78	5.87	7.14	4.54	10.64	5.83	4.45	4.20	4.01	3.62
Seychelles	1.42	5.65	4.29	1.21	1.25	1.50	1.08	0.93	0.68	0.32
Somalia*	5.27	5.15	7.46	1.28	2.29	3.47	3.96	4.18	3.98	3.67
South Sudan*	..	1.60	2.41	6.37	3.11	4.84	3.96	3.82	3.83	3.42
Tanzania	6.83	7.04	9.34	5.71	4.56	4.39	4.79	4.64	4.34	3.91
Uganda*	7.23	7.42	4.16	7.20	4.00	5.49	5.61	5.08	4.56	4.02

Legend

Primary urbanization rate peak

Secondary urbanization rate peak

Steadily decelerating urbanization rates

Accelerating urbanization rates

*Countries affected by conflict, political unrest or receiving refugees

Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York 2012.

The Larger Eastern African Cities

High to very high growth rates will apply over the current decade to the largest Eastern African cities (Table 4.4). The greatest demographic pressure can be expected in Dar es Salaam, where a projected annual average of 226,000 new urban dwellers will have to be accommodated. Dar es Salaam has taken over the lead position from Nairobi and is presently Eastern Africa's largest city. Demographic pressures are also exceptionally high in conflict-ridden Mogadishu, with a projected average annual growth rate of almost 9 per cent - the highest among the larger cities of the sub-region. It is difficult to imagine how Mogadishu will be able to make adequate provision for the projected additional average annual urban growth of 126,000 new citizens through the end of this decade.

Nairobi, the second largest city in the sub-region, accommodates more than one-third of Kenya's total number of urban dwellers. Kampala is experiencing the second highest growth rate and also contains a disproportionate share of Uganda's total urban population (31.2 per cent). The impacts of continued rapid growth of Eastern African primate cities include acute housing shortages, traffic congestion, pollution

Daily life and business move along in the busy and bustling taxi park in Kampala, Uganda. Kampala accounts for 31.2% of Uganda's total urban population.
©Black Sheep Media/Shutterstock

TABLE 4.4: **POPULATION DYNAMICS FOR EASTERN AFRICAN CITIES >750,000 INHABITANTS**

City	Country	2011 Population	Av. Annual Growth rate 2010-20 (%)*	% of Urban Population 2011	% of Total Population 2011	Av. Annual Population Increase 2010-20*	2025 Population*
Dar es Salaam	Tanzania	3,588	6.63	29.1	7.8	226,000	7,276
Nairobi	Kenya	3,363	5.26	33.7	8.1	170,000	6,143
Addis Ababa	Ethiopia	2,979	3.30	20.7	3.5	96,000	4,705
Antananarivo	Madagascar	1,987	6.27	28.6	9.3	119,000	3,898
Kampala	Uganda	1,659	6.75	31.2	4.8	107,000	3,540
Mogadishu	Somalia	1,554	8.89	43.1	16.3	126,000	3,309
Kigali	Rwanda	1,004	5.60	48.0	9.2	53,000	1,835
Mombasa	Kenya	972	5.00	9.7	2.3	47,000	1,775
Lilongwe	Malawi	772	6.19	32.0	5.0	45,000	1,538

** Projections*
Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York 2012.

and uncontrolled peri-urban sprawl. These countries should take vigorous interventions to direct more of their urban growth away from the capital. There is, however, increasing evidence that Eastern African governments (and those in Central Africa) are acting upon the challenges to their largest cities.

Significant interventions are under way to redevelop existing urban areas or establish satellite cities at some distance from the capital to disperse urban population and economic growth. Prime examples are interventions currently proposed (or under way) in Kenya, Tanzania and Uganda.

Satellite cities, or urban redevelopment projects, have the dual purpose of accommodating and promoting new commercial and services development, as well as providing outflow destinations for urban commerce and population. These satellite cities are mostly developed with foreign investments and either promote high-quality urban areas at distance from the crowded capital or encourage redevelopment to raise densities in existing urban areas. Tatu City, "Africa's City of the Future", for instance, is a proposed satellite city along Nairobi's major northern radial road close to the capital. It is envisaged to promote new commercial developments and accommodate 70,000 residents, as well as 30,000 daily visitors, once completed.

Another proposed Kenyan satellite city will soon emerge in Konza, some 60 km southeast of the Nairobi Central Business District (see Text Box 4.1). Konza is envisaged as a 2,000 hectare "Technology City" to enhance Kenya's global competitiveness in technology and innovation. Konza Technology City is a variant of the exo-urbanization applied over the past decades in East Asia where foreign investment-induced urbanization built on labour-intensive and assembly manufacturing for export-oriented industrialization. Although exact details are still scarce at the time of writing, Konza Technology City appears to aim more at knowledge and technological innovation industries than assembly industries.

In Uganda, Kalungulu City is developing along the Kampala-Entebbe urban development corridor, 18 km outside Kampala. Kalungulu is planned to host a sports stadium, houses and apartments, a business centre, schools, hotels and shopping malls.[5] As the largest gated community in Uganda, there are concerns around the trend to develop gated communities and the resulting segregation of the rich and the poor. Here too, failure to plan adequately for accommodating low-income households - the very people needed to service the city - appears to forebode familiar grounds for further urban slum proliferation. A Government of Tanzania-Dar es Salaam partnership opts for urban redevelopment of Kigamboni as a future industrial and Indian Ocean maritime port area. The 65 million m^2 area in Dar es Salaam is envisaged to include commercial, trade and industrial, educational, recreational and residential facilities for 500,000 inhabitants. Tanzania is planning and implementing six other satellite city projects around Dar es Salaam. These are Mji Mwema, Kimbiji and Kongowe to the South; Pugu Kajiungeni to the West; and Bunju and Luguruni to the North.[6]

These cities and urban redevelopment programmes have already sparked fierce public debate. Matters of equity are being raised since these new developments are clearly built for the rich, with threatened evictions of poor and low-income residents in some areas to be developed. The discussions are typically centred on the debate of what is required in the general interest and the rights and needs of the individual. In each case, these represent a political trade-off, whereby the rights and vulnerabilities of the urban poor in particular should be respected. Although Eastern African governments should be commended for their renewed commitment to planning in dealing with the unfolding urbanization processes in the region, catering preferentially for the residential and office needs of rich urban populations may backfire. The needs of the poor should be incorporated through equality and human rights-based urban interventions. All Eastern African cities need cleaners, waste collectors, gardeners, *askaris* (watchmen) and other low-income service providers. Failure to provide them decent and affordable homes will generate more urban slums.

BOX 4.1: **'SILICON SAVANNAH': KONZA TECHNOLOGY CITY, KENYA**

▲
Konza Techno City, Kenya. **©www.konzacity.co.ke**

On 23 January 2013, Kenyan President Mwai Kibaki turned the first sod in a USD 14.5 billion project to develop a new techno-city on a 2,110 hectare site 60 km south-east of Nairobi. The project had been launched in 2009 to cash in on the international trend towards business process outsourcing and information technology enabled services, which were claimed to have generated USD 110 billion in global revenues in 2010. This economic sector employs some 2.8 million people across the world, yet Africa has few national programmes designed to exploit this offshore services market. The Kenyan government asked the International Financial Corporation to undertake a feasibility study, which acted as the catalyst for this grandiose contribution to its Kenya Vision 2030 initiative.

The Konza City concept was produced by a team from the United Kingdom, China and Brazil. Phase One will be the construction of a science park; centres for business process outsourcing, international finance, research; and tourism facilities. This was estimated at costing USD 3 billion in 2011.

Konza will eventually include a central business district; a technology park; a business process outsourcing park; a university campus; and residential functions surrounded by a green belt. Full construction is anticipated to take 20 years and, according to its advocates, Konza City is expected to create 20,000 jobs in information technology by 2015 and at least 200,000 jobs by 2030. To describe these aims as ambitious would be an understatement. Investors have been reluctant to commit resources because of the global financial crisis. There are also fears that projects as large as these serve as conduits through which public and private monies may be siphoned off by the well-connected. Moreover, questions are being raised about the city's target population as few, if any, housing facilities for the lower- and low-income households required to service the city seem to be incorporated in this scheme. That is tantamount to inviting slum formation around this new model city, replicating the very African urban management and planning errors of the past and today.

Sources: Fripp (2011); Shikwati, (2012); Konza Techno City (2013); BBC (2013).[4]

4.2 Global Change and Implications for Urban Development

Malagasy women sorting vanilla in Sambava, Madagascar. Agriculture is the mainstay of Madagascar's economy and the island is the dominant global vanilla producer. **©Lemurbaby.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license

Global influences on the Eastern African sub-region depend, crucially, on the nature of external dynamics and on the environment within which these are expected to impact. Taken individually, the countries of Eastern Africa are varied, yet for the purposes of understanding the possible external influences impacting upon them some measure of abstraction will be necessary. It seems useful, therefore, to attempt to group the Eastern African states by sub-region.

There are the countries of the Horn: Djibouti, Ethiopia, Eritrea and Somalia. These are largely separated by geography from the rest of Eastern Africa, by the aridity of Kenya's Northern Frontier District and the swamps of South Sudan. Their position and history expose them, necessarily, to events and developments in Saudi Arabia and Yemen across the Red Sea.

There are the countries of the East African Community: Burundi, Kenya, Rwanda, Tanzania and Uganda. To this grouping one might, for convenience sake, add two potential future members: the new state of South Sudan and Malawi.

Finally, there are the islands of the Indian Ocean: Comoros, Madagascar, Mauritius and Seychelles as well as Mayotte and Réunion, the last two with political status as integral departements of France and part of the European Union. It is worth remarking that all of these island states enjoy a more tenuous relationship with the African continent than the other countries of Eastern Africa, largely as a result of their greater exposure to the trading, ethnic and cultural influences that have emanated westwards from across the Indian Ocean.

Regional Economic and Political Vulnerabilities

In terms of external influences on the countries of the sub-region it is important to bear in mind that, with few exceptions, mineral exports have thus far made little contribution to their economies. On the whole the sub-region's mining potential remains unrealized and the majority of the population is dependent upon subsistence agriculture. Exploitation or the potential role of minerals and hydrocarbons to the regional economy depends on world prices or, in the case of uranium, on decisions about the future of nuclear power. Such influences remain in the future, although global markets will affect exploration and decisions about exploitation.

Prospects offered by the recent discoveries of hydrocarbons in Eastern Africa, largely offshore but also within Ethiopia, Somalia and along the Rift Valley, are very significant for Eastern Africa's development and growth in the near to medium terms. Most of these deposits are still some years away from exploitation but promise a radical change in the macroeconomic fortunes of the countries within whose boundaries or waters they fall. They may have another less desirable effect, however. Even should they avoid the fate that has befallen so many other African states, where oil wealth has unbalanced economies to the point of collapse, there is also the influence that such assets exercise in the political realm. Leaders who suddenly find themselves masters of such potential wealth are inclined to hold on to power at virtually any cost. Much of the material gain that could be spent diversifying the economy and uplifting living standards finds its way into the pockets of the politically well-connected and their foreign associates.

Agricultural commodities, especially exports of tea, coffee, tobacco, cut-flowers and vegetables, are presently far more important to Eastern Africa and this sector is extremely vulnerable to weather patterns. The tobacco market is also going to be affected by current campaigns in the industrialized world to reduce smoking, though this may make Asian tobacco markets more important.

Recent upheavals in global financial markets have had a relatively modest direct impact on the financial sector in Eastern Africa. Kenya, with a well-developed stock exchange, may claim to be a regional financial hub, while the banking sectors of Mauritius and to a lesser extent Seychelles are also significant. Still, having ridden out the initial waves of international recession, Eastern Africa's economies might be exposed to a protracted economic downturn that would affect investment, particularly in infrastructure.

In macroeconomic terms, the greatest danger to Eastern Africa is the weakening of fiscal policy buffers since the onset of the crisis in 2007. This reduces the ability of governments to engage in counter-cyclical policies to mitigate the effects of external financial shocks.[7]

The Horn of Africa

Countries of the Horn are all especially vulnerable to changes in an already harsh natural environment. Partly as a result of this, their modern history has been marked by chronic conflict over livelihoods, sometimes punctuated by periods of all-out war involving one or all of them together. An authoritarian regime maintains a hold over Eritrea, and is heavily dependent on a compliant military that consumes some 25 per cent of the national budget.[8] Exploitation of gold resources since 2011 has had startling effects on economic growth rates for a country in which almost 80 per cent of the population still engages in agriculture or fishing.

Eritrea's geographical isolation from the rest of the region has been reinforced in recent decades by its political and diplomatic position and, among neighbouring states, enjoys friendly relations only with Sudan. A rapprochement with Ethiopia would radically change Eritrea's regional role because of its Red Sea ports, but this seems a distant prospect.[9]

Somalia's collapse as a functioning state came largely as a result of the end of the Cold War. This deprived Mogadishu of the largesse of its Super Power backers and unleashed the full weight of rival clan-backed militias competing for national power. It also ended Somalia's abortive wars of conquest for the Ogaden, an area in Ethiopia's Somali Region. International intervention unintentionally fanned the flames of conflict. Despite recent military gains against Al-Shabaab, peacekeeping forces drawn largely from Burundi, Ethiopia, Kenya and Uganda have yet to re-establish the authority of the federal government in Mogadishu over a great part of the national territory. Some parts of Somalia, which unilaterally declared independence in 1991, remain unrecognized but are functional in relative terms. Other parts in the northeast, principally Puntland, have enjoyed *de facto* autonomy for the past 20 years. The remainder of the national territories and its revenues are controlled by shifting alliances of clan-based militias led by warlord/businessmen and "entrepreneurs" who have little to gain from resuscitating effective state sovereignty but who profit indirectly from donor support.[10]

Ethiopia, the largest and most influential state in the Horn of Africa, is valued by Western governments for its assistance in curtailing Islamist extremism. Landlocked, its main urban centres are separated from the coast by vast distances and challenging landscapes. For the past 20 years its government has pursued a state-led development model and severe restrictions have been placed selectively on foreign investment. This may have to change, given the massive capital demands of the ambitious and extensive capital investment policy designed to improve urban, hydropower and communications infrastructure. The inflationary effects of state financing are placing serious strains upon a domestic economy that has also felt the brunt of shocks to its major trade partners: the European Union and China. Oil, coal and gas comprise eight per cent of Ethiopian imports, thus it is also vulnerable to global energy price fluctuations.[11] It seems likely that Ethiopia will have to open its market to foreign investors in the near future, especially as this would allow it access to International Monetary Fund development loans. Whether this would also be reflected in an opening of a still very narrow democratic space remains to be seen. At present, civil society and non-governmental organizations operate on sufferance, which makes policy advocacy from outside ruling party structures difficult.[12] Djibouti has grown in importance over the last decade because of the outlet it provides Ethiopia to the Red Sea as well as its significance as a base for French, United States and Japanese forces engaged in counter-terrorism and anti-piracy operations.[13] Construction began in December 2012 of a new bulk-seaport at Tadjoura on the country's northern coast, adding to the existing Port of Djibouti and the container terminal at Doraleh. This will reinforce Djibouti's ambitions to establish itself as a competitor to Durban and Dar es Salaam as a continental trans-shipment hub.[14]

Kenya's new Thika highway. Construction and telecommunications are expected to remain the backbone of Kenya's economic growth. **©Fountain Monthly www.fountainnews.co.ke**

The East African Community, South Sudan and Malawi

The East African Community (EAC) was resuscitated in 2000 by the governments of Kenya, Tanzania and Uganda. Burundi and Rwanda became members in 2009, South Sudan's eventual accession to the community is taken almost for granted and Malawi has occasionally been considered.[15] A previous attempt at maintaining the EAC collapsed in 1977, largely because of the political and ideological rivalries of its leaders and economic imbalances. The community today has proved more robust and more ambitious, with talks at one stage of an East African Federation, though neither Burundi nor Tanzania are enthusiastic about this, and popular opinion elsewhere may also prove nationalistically negative.[16]

The community states its aims as deep economic, social and political integration, beginning with a customs union (phased in between 2005 and 2010), moving to a common market (phasing in began in 2010), a monetary union and ultimately a political federation. The fledgling common market acts as a powerful incentive for domestic and foreign investment in property and infrastructure, as political and economic capitals vie for roles as bridgeheads to a large, expanding single market. Still, this enterprise has had various challenges to face: institutional and political obstruction; non-tariff trade barriers; restrictions on the mobility of labour and capital, residence and the ownership of property; and the lack of a common customs pool. The issue of monetary convergence is likely to delay the introduction of a common currency, especially once Uganda starts exporting oil. There is also the issue of overlapping membership of other regional organizations, a common problem for the development of Africa's regional economic communities.[17]

The EAC project has many facets, of which only one will be highlighted here, namely the attempt to reduce the economic distance of landlocked or inland centres from large global markets. Three of the community's five states are landlocked and in the event that Malawi and South Sudan become members that would become five out of seven. The three existing landlocked member states account for 40 per cent of the sub-region's population and 30 per cent of its economic activity, but the lack of connective infrastructure to the coast adds immensely to the cost of trade.[18]

The disadvantages of distance from the coast are not limited to landlocked countries since Nairobi, one of the sub-region's largest, densest urban and industrial centres, is 500 km from the sea. Yet, for historical and climatic reasons, the coastal ports of Dar es Salaam and Mombasa have little industrial development. Population projections anticipate higher growth rates in the highland interior than the coastal settlements, further aggravating the regional imbalance of economic activity. To offset the adverse results of such developments, comprehensive and sequenced plans have been advocated to transform the community as a whole into a coastal economy.[19] So radical a proposal will obviously face immense political, administrative and financial obstacles, but would completely alter the ways in which the region and its component states interact with the global economy.[20]

Construction and telecommunications are expected to remain the backbone of Kenya's economic growth, as real estate development and investment in roads gather pace. Nairobi's status as a diplomatic hub, as well as global and regional headquarters for many international governmental and non-governmental organizations, will continue to promote economic growth there, albeit with distorting effects on market prices. Tourism has held up remarkably well, despite the eurozone crisis, although continued economic hardship and fears of continued terrorist reprisals for the country's security operations in Somalia may have an adverse effect.[21]

Tanzania's healthy economic growth rate has also been underpinned by increases in the construction of houses, roads and bridges. The increasing significance of extractive industries is transforming the structure of this historically agricultural economy, and exploitation of significant offshore hydrocarbon reserves will bolster government revenues.[22] Offshore oil and gas discoveries could easily reignite tensions between Zanzibar and mainland Tanzania, even to the point where the latter may

BOX 4.2: ROAD AND RAIL NETWORK MASTER PLANS FOR THE EAST AFRICAN COMMUNITY

Current EAC Railway Network with proposed new lines

Legend

- Current Railway Line
- Proposed Railway Line
- Ferry

Current EAC Road Network with proposed new links

Legend

- Mombasa - Malaba - Katuna corridor (plus proposed)
- Tunduma - Iringa - Dodoma - Arusha - Namanga - Moyale corridor (plus proposed)
- Dar es Salaam - Dodoma - Isaka - Mutukula - Masaka corridor (plus proposed)
- Nyakanazi - Kasulu - Sumbawanga - Tunduma corridor
- Biharamulo - Mwanza - Musoma - Sirari - Lodwar - Lokichogio corridor
- Sections/Links connecting with East African neighbours; those of inter-regional connectivity

Development of the infrastructure network in the EAC offers the prospect of massive economic and financial gains, and might also lead to higher growth in secondary cities. A study undertaken in 2010 showed that the costs of inland logistics in Eastern Africa accounted for 42 per cent of total import value, the highest in the world. In part this reflected the inefficiency of the ports in Dar es Salaam and Mombasa, but most of the costs resulted from the poor state of the region's road and rail infrastructure. Mombasa, Eastern Africa's largest port, handled almost 23 million tons of cargo in 2012 and Dar es Salaam 12.1 million tons. The latter is increasing its market share, however, despite higher costs and longer turnaround times, as a result of the upgrading of the Dar es Salaam-Burundi-Rwanda-Uganda-DRC transport corridor, along which 86 per cent of roads had been paved by 2012.

Without rehabilitation of the region's rail links, however, an overreliance on trucks will cause rapid deterioration of the road network. Kenya has responded to the competition from Dar es Salaam by investing heavily in its Mombasa port, as well as by construction of a railway to the western town of Malaba, on the border with Uganda. This will form part of the USD 13 billion railway linking Mombasa, Kampala and Kigali. In response, Tanzania is investing USD 10 billion in a new deep water port at Bagamoyo, proposed to be operational by 2017, with a rail spur to the main line to Uganda. Although a USD 29 billion budget has been approved for the EAC Railway Authority, it remains to be seen whether the community will be able to slough off the political and bureaucratic impediments to the implementation of policy decisions.

Source: CPCS Transcom (2009) East African Railways Master Plan Study. Available at: www.eac.int/infrastructure
Sources for Textbox: EAC (2011) 4th EAC Development Strategy (2011/12-2015/16): Deepening and Accelerating Integration (Arusha, EAC); CPCS Transcom (2009). East African Railways Master Plan Study: Final Report (Bridgetown Barbados, CPCS Transcom); Economist Intelligence Unit (2013). "East Africa's next gateway", 23 August 2013.

once again seek secession. An agreement, concluded late in 2012, gives Zanzibar's government full control over any gas or oil reserves found within its territory. However, this agreement has not yet been ratified by the Tanzanian parliament.[23] The role of the private sector in promoting the economy has been identified in the five-year national development plan, approved in September 2010, though institutional barriers and power shortages continue to pose major problems. High operating costs, poor port infrastructure and poor connections also currently prevent Dar es Salaam from fully exploiting its strategic location on the sub-region's coast.[24] The Tanzanian Port Authority has plans for a major upgrade to the harbour facilities though this does not appear to be part of the recently released Dar es Salaam Master Plan for 2012-2032.[25]

Uganda's growth was adversely affected during 2011 by economic downturns in Europe and the United States. Future prospects are improved by the expectations of producing 200,000 barrels of oil a day by 2015/16, which would net the government some USD 2 billion a year in revenue.[26] The issue of oil permits and contracts has already led to intense parliamentary debate and even friction within the ruling party, some of whose members are resisting presidential pressure in ways that could destabilize the political system.[27] In Uganda many of the oil finds lie along the borders with the Democratic Republic of Congo (DRC), complicating relations with that country, which has little control over its eastern territories. There is some speculation that South Sudan will seek to link its oil sector to those of Uganda and Kenya. Uganda also stands to benefit from the process of state construction in South Sudan, where its businessmen already compete with Kenya for a share in the retail market. In 2011, the South Sudan government estimated that Uganda was earning about USD 200 million annually from its northern neighbour, and that some 150,000 Ugandan traders were operating in the country.[28]

Burundi, Rwanda and Uganda have become deeply involved in the affairs of the DRC over the last two decades, particularly in the east of that country where Kinshasa's authority is successfully contested by armed groups. Such is the suspected extent of Kigali's involvement that foreign donors have withheld large amounts of aid to their once-favoured recipient country since the end of the 1994 genocide. Conflict continues in eastern Congo and Rwanda's fortunes will depend greatly upon how this is resolved. Internally, the Rwandan government uses the security threat to maintain a firm grip on political life, and the economy is centrally managed, albeit efficiently. In 2009, Rwanda adopted an Environment and Natural Resources Plan, based upon sustainable resource management as a means of planning for environment and climate change.[29] The suspension of some aid payments persuaded the government to issue a EUR 400 million bond in April 2013 for infrastructure development. African sovereign bonds are attracting a great deal of attention among overseas investors as they offer attractive rates of return compared to the European and North American bond markets. Tanzania has already raised USD 600 million in a private bond placement.[30]

Burundi's government faces a number of internal and external problems. The presidential succession is likely to cause tensions within the ruling party and opposition groups find themselves marginalized in a restrictive and dangerous political environment. The economy's agricultural export base (tea and coffee) is vulnerable to adverse weather as well as to the economic downturn in the European Union, the country's principal trade and aid partner.[31]

South Sudan's economy is fragile and underdeveloped. In addition, the government is inexperienced and overwhelmed by a flood of foreign advisers. South Sudan has exported oil since the 1980s, and the battle for control over the oilfields was a major contributing factor in the recent war for secession which culminated in the country's independence in 2011. In its continued dispute with Khartoum over wider security and boundary issues, the government in Juba halted all oil production in January 2012. The economic damage this caused, especially in South Sudan, whose government depends on oil for at least 95 per cent of its domestic revenues, was severe. It also contributed to Sudan's economic downturn and to a spectre of urban unrest in Khartoum that might mirror that of Northern Africa's cities. For now, disaster seems to have been averted by a compromise agreement negotiated by the African Union in Addis Ababa, which will see South Sudan resume its oil production in exchange for certain security concessions from Khartoum. Nonetheless, much of South Sudan government planning still appears to be predicated upon the continued discovery of new oilfields, which is by no means assured. Such planning includes a new capital at Ramciel, in Lakes State, ultimately intended to replace Juba, which is less central (Text Box 4.3). Developments in this new state's hydrocarbon industry will play a determining role in the immediate prospects for post-conflict reconstruction, and for plans to build pipelines through Eastern Africa to reduce or eliminate dependence on Port Sudan.

South Sudan looks south and east for its economic connections: towards the East African Community and Ethiopia. Cooperation with its northern neighbour, Sudan, is undertaken reluctantly given their past relations. The political decision to halt oil production in January 2012 was little short of disastrous financially, but revealed the weight of principle and national pride in deciding serious matters of policy, as well as the centralized nature of decision-making. There is a danger that the Government of South Sudan is over-optimistic in its calculations of its oil wealth, and that it may engage in expensive but unproductive projects as a result.[32] Announcements in April 2012 that China had offered a development loan of USD 8 billion have been subsequently denied by Beijing.[33]

Malawi's uncertain economic position leaves its policymakers with little room to manoeuvre. The country's new president, Joyce Banda, has taken drastic measures to tackle the disastrous consequences of her predecessor's policies. She has repaired relations with donors and international financial organizations, but at the cost of adopting austerity measures and devaluation, adding to the general impoverishment of the population in the short- to medium-term.[35]

The exploitation of uranium deposits has encouraged the

BOX 4.3: **RAMCIEL, NEW CAPITAL FOR SOUTH SUDAN**

Despite its financial woes South Sudan's government appears determined to press ahead with building a new capital at Ramciel, at a site more centrally located than the current one of Juba. The population of Juba has doubled to nearly 400,000 since the civil war ended in 2005. The local Bari community in Juba has objected to the expansion of Juba to incorporate new villages, and for lack of skills has benefitted only indirectly from the economic opportunities multiplying in their town. Arguments over jurisdiction between the central, state and local authorities have made adjustment to the changing demands of a rapidly expanding Juba impossible. The expropriation of sites for the construction of government buildings, the expense of compensation and delays caused by litigation were other factors weighing against Juba.

In 2003, the late John Garang, leader of the Sudan People's Liberation Movement, advocated the creation of a new capital in the Ramciel area should the south gain independence. This was to serve as a focus for the reinforcement of a sense of national identity in an ethnically diverse country. An initial site for Ramciel was rejected after surveys found the ground unsuitable. The new site straddles the Nile, measures some 19,000 km^2 and currently has a population of 500,000, drawn from several different ethnic groups.

The official justification for this ambitious project is that it will attract substantial foreign investment into the country to underpin a 200-year programme of sustained economic development. The military background of most members in government is reflected in the 2011 cabinet presentation on Ramciel. Political will and the government's ability to attract investment into the country's economy are seen to be the ingredients that are driving development.

A South Korean company has won the contract to begin mapping and surveying the new site. The minister responsible has expressed confidence that the government's austerity programme will soon be something of the past and that Ramciel will arise from the infrastructure poor area of Greater Yirol.

Source: www.gurtong.net[34]

search for additional minerals but oil exploration contracts granted for blocks in Lake Malawi have revived dormant disputes with Tanzania about lacustrine boundaries. So far, common sense by both governments has prevailed and the matter has been referred for regional mediation, though it may eventually have to be referred to the International Court of Justice for settlement.

Indian Ocean Islands

Mauritius has earned its position as the best place to do business in Africa south of the Sahara. Its economy is based on financial services, sugar, textiles and tourism. Its democratic political system and its respect for property rights and investor protection have earned it an enviable reputation in the marketplace.[36] The protracted economic crisis in the European Union, the island's principal trading partner and source of its tourists and investment, will impact heavily on the tourism sector. This will probably lead to a loss of jobs and the suspension of hotel and real estate development.[37]

For the size of its market, the Seychelles performed even better than Mauritius as a tourist destination in 2012, directly earning USD 245 million (equivalent to 23.5 per cent of gross domestic product). The sector employs about one-quarter of the workforce and, if indirect revenues and suppliers are included, this figure rises to 58 per cent with USD 604 million in earnings. Surviving the European downturn will be made easier as tourists arrive in larger numbers from markets such as China and the United Arab Emirates.[38]

The Comoro archipelago has enjoyed little political stability since independence in 1975. Disputes between the three main islands - Grande Comore, Anjouan and Moheli - and a restive military have precipitated 21 coups and attempted coups since then, while high unemployment and frequent food shortages aggravate the risk of public unrest. Debt relief and aid from the Middle East remain crucial, but will depend on the government adopting rational economic policies.[39]

The recent political history of Madagascar, the largest of Africa's Indian Ocean islands, has been particularly troubled following a coup in March 2009. This led to a period of official international isolation and the suspension of most foreign aid. Protracted negotiations and mediation appear to have led to a compromise, paving the way for a return to constitutional rule later in 2013. However, it will take several years for an already poor economy to recover from the dislocations of the past four years.[40]

▲ The famous Clock Tower in Victoria, Mahe, Seychelles, was built in 1903 as a memorial to Queen Victoria and modelled on the 'Little Ben' Clock in London. **©18042011/Shutterstock**

4.3
Social and Environmental Vulnerabilities

A busy market street in Antananarivo, Madagascar. In Madagascar, 52 per cent of the urban population are living below the poverty line. **©Tom Turner.** Licensed under the terms of the GNU Free Documentation License, Version 1.2 or any later.

Poverty and Inequality

Madagascar has relatively high poverty levels, with 52 per cent of the urban population living below the poverty line (Table 4.5). In Addis Ababa, Ethiopia, 31.4 per cent of the population was unemployed in 2008.[41] In Malawi, around 24 per cent of Blantyre's population live in poverty.[42] Inequality in the sub-region's cities is generally high and in 2003, Addis Ababa had an income Gini coefficient of 0.61 and a consumption Gini coefficient of 0.56 (Table 4.6). Surveys on 17 towns around Lake Victoria found that inequalities in these towns resembled those of capital cities, indicating that poverty is largely spread evenly throughout the urban domain.[43] This suggests that poverty and inequality levels are largely comparable in Eastern African cities.

The high poverty and inequality levels in the sub-region and its cities, as well as the high level of growth of slums and informal settlements, contribute to the reproduction of conditions under which the poor currently suffer. They reflect the lack of access to services, opportunities, institutions, or the mobility to seize opportunities. Informality characterizes the means by which the large majority of the working age population find employment and acquire land and housing. Similarly, services and household goods are accessed from the informal sector. How do inequality and inequity, in respect of access to formal systems, reproduce at the societal level over the long term? Inequalities at this scale indicate that a poverty trap is in operation in the sub-region, to which resistance can be expected over time. The high levels of literacy and political engagement enjoyed by countries such as Kenya and Uganda, may yet lead to more contestation with the state in respect of greater political change that goes beyond service delivery concerns. To some extent this is reflected in the way that certain cities act as strongholds for opposition politicians. Though absolute poverty is generally far worse in Africa's rural areas, it is in the cities that inequality and relative poverty become most starkly apparent.

Climate Change and Natural Disasters in Eastern Africa

Prone to natural disasters such as floods, droughts and cyclones, the sub-region is considered to fall in a "global vulnerability hotspot".[44] Climate change poses a range of potential threats to Eastern Africa and its cities. Regionally, rising temperatures and changes in precipitation threaten to exacerbate pre-existing vulnerabilities to drought, flooding, topsoil loss, sea level rise in coastal cities and may even increase incidence and spread of diseases such as malaria. Drought and falling water levels may affect sub-regional agricultural

TABLE 4.5: **PERCENTAGE OF URBAN POPULATIONS LIVING BELOW THE NATIONAL POVERTY LINE IN SELECTED EASTERN AFRICAN COUNTRIES**

Country	Year	Percentage Urban Population Below National Poverty Line
Burundi	2006 (c)	34.0
Comoros	2004 (c)	34.5
Ethiopia	2005	35.1
Kenya	2005 (c)	33.7
Madagascar	2005	52.0
Malawi	2004	25.4
Rwanda	2011	22.1
Tanzania	2007	21.8
Uganda	2009	9.1

Source: World Development Indicators 2012, Table 2.7 (c) = World Bank estimates.

TABLE 4.6: **URBAN GINI COEFFICIENTS, AND CITY GINI COEFFICIENTS FOR EASTERN AFRICAN CITIES AND NATIONAL GINI COEFFICIENTS FOR EASTERN AFRICAN COUNTRIES.**

Country	City	Year	City Gini Coefficient	Country Gini Coefficient
Burundi (WDI 2012, Table 2.9)	--	2006	--	0.33 (i)
Burundi	Bujumbura	2006	0.47 (c)	0.49 (c)
Comoros (WDI 2012, Table 2.9)	--	2004	--	0.64 (i)
Djibouti (WDI 2012, Table 2.9)	--	2002	--	0.40 (i)
Ethiopia	Addis Ababa	2003	0.61(i)	--
Ethiopia		2004-5		0.44 (c)
Ethiopia	Addis Ababa	2003	0.56(c)	--
Ethiopia (WDI 2012, Table 2.9)	--	2005 (i)	--	0.30 (i)
Kenya	Nairobi	2006	0.59 (i)	0.45(c)
Kenya	--	2005	--	0.47(i)
Madagascar (WDI 2012)	--	2010	--	0.44 (i)
Malawi (WDI 2012)	--	2004	--	0.39 (i)
Malawi	--	1998	--	0.52 (c)
Rwanda (WDI 2012)	--	2011	--	0.50 (i)
Rwanda	Kigali	2005	0.47 (i)	--
Seychelles (WDI 2012)	--	2007	--	0.65 (i)
South Sudan (WDI 2012)	--	2009	--	0.45 (i)
Tanzania (WDI 2012)	--	2007	--	0.37 (i)
Uganda	--	2005-6	--	0.43 (i)
Uganda (WDI 2012)	--	2009	--	0.44 (i)
Uganda	Kampala	2002	0.47 (c)	--

(i) = income Gini coefficient (c) = consumption Gini coefficient
Sources: Urban/City Gini Coefficients sourced from Global Urban Indicators 2009, Tables 26 and 27) and National Gini Coefficients sourced from World Development Indicators 2012, Table 2.9.

production and hydropower output capacity.

Early indications are that these effects are already being felt, especially in cities dependent upon hydropower such as Nairobi. Eastern African cities and urban areas (e.g. Antananarivo, Arusha, Kigali and Lilongwe) suffer from inefficient and absent infrastructures, service provisions and formal institutions. They are vulnerable to climate change impacts and natural disasters, as there is little existing infrastructural and institutional capacity to cope with unforeseen changes that may occur.

Thirteen African countries are listed in the world's top 15 that are most vulnerable to risk from natural hazards; these include Burundi, Eritrea and Ethiopia, with Eritrea considered to head the global list.[45] Coping with disasters, such as drought and crop failure or cyclonic flooding, is nigh impossible without external assistance from other regional and global sources, reflecting the poor state of disaster readiness of Eastern African cities.

The dangers confronting Eastern African urban populations include increased or intensified conflict and competition over resources and services that are already in scarce supply in the sub-region.

Ali Hussein camp is one of several large camps for Internally Displaced People (IDPs) on the edge of Burao town, Somalia. Some people have come from Mogadishu and South Central Somalia to escape conflict, others have fled drought. **©Oxfam East Africa.** Licensed under the Creative Commons Attribution 2.0 Generic license.

Regional Climate Change and Urban Vulnerability in Eastern Africa

Models of climate change in the sub-region project temperature increases of 1.5 to 2 degrees Celsius between now and 2050, increasing to between 2 and 4 degrees Celsius between 2050 and 2100.[46] Although the sub-region overall is projected to experience increased average annual rainfall, Eastern Africa south of the equator is expected to see a decline in rainfall, and the North is projected to experience increased rainfall distributed in less frequent but more intense, shorter events.[47] Accurate rainfall projections are, however, encumbered by the difficulty of incorporating the El-Niño Southern Oscillation, which introduces a great deal of uncertainty into the modelling of future rainfall trends, as well as weakening the capacity for adaptation planning in the sub-region.[48]

Extreme events (such as storm surges, floods, hurricanes, storms, and drought) are likely to be exacerbated by climate change.[49] These present a critical threat to the sub-region and its cities, especially considering how global climate changes may combine with the El Niño Southern Oscillation Effect.[50] Beledweyne in Somalia's Hiraan Region experienced flash flooding in September 2012, with 3,500 families displaced as a result. Flooding in Southern Sudan between June and September 2012 affected more than 258,000 people in 39 counties. In Ethiopia, the Afar and Eastern Gambella regions were struck by floods during September 2012, affecting close to 7,000 people. With weak to moderate El Niño effects set to intensify, it is likely that extreme weather events will increase, especially with projected increased rainfall over the October to December period.[51]

Kampala, an inland city, experiences increased rainfall during "extreme climatic events", rendering the city vulnerable to flooding, pollution and health risks, especially affecting the urban poor living in areas such as Katwe, Kinawataka, Natete and Ndeeba.[52] In Bwaise, Kalerwe, Katanga and Kivulu insufficient drainage capacity increased runoff by six times.[53] Rainfall is the most common cause of flooding in the city, exacerbated by poor drainage infrastructure. The adaptive capacity of the population, around 30 per cent of which live in poverty and 40 per cent are unemployed, is particularly

TABLE 4.7: **MAJOR DISASTER INCIDENTS IN EASTERN AFRICA 1980-2000**

	Cyclones (1980-2000)			Droughts (1980-2000)			Earthquakes (1980-2000)			Floods (1980-2000)			
	# of events	Loss of lives		# of events	Loss of lives		# of events	Loss of lives		# of events	Loss of lives		Population affected by conflicts
Country	**Annual Average**	**Annual Average**	**Per Million**	**Annual Average**	**Annual Average**	**Per Million**	**Annual Average**	**Annual Average**	**Per Million**	**Annual Average**	**Annual Average**	**Per Million**	**Annual Average**
Djibouti	--	--	--	--	--		--	--	--	0.19	8.57	18.26	23.4
Eritrea	--	--	--	--	--	--	--	--	--	--	--		70.0
Ethiopia	--	--	--	0.57	14,303.19	286.2	--	--	--	1.00	27.14	0.50	24.0
Kenya	--	--	--	0.29	4.05	0.16	--	--	--	0.24	12.86	0.50	--
Madagascar	0.71	48.81	3.87	0.24	9.52	0.78	--	--	--	--	--	--	
Malawi	--	--	--	--	--		0.05	0.43	0.05	0.43	23.33	2.36	--
Rwanda	--	--	--	--	--	--	--	--	--	0.05	2.29	0.34	23.0
Somalia	--	--	--	0.24	29.57	4.14	--	--	--	0.52	117.62	15.38	3.0
Uganda	--	--	--	0.29	5.48	0.29	0.14	0.33	0.02	0.14	7.05	0.36	45.0
Tanzania	--	--	--	--	--	--	--		0.71	22.00	0.77	--	--

Source: Global Urban Indicators 2009 Table 22.

low in terms of flood resilience. The city requires local and citywide spatial, infrastructural and institutional responses to improve its adaptive capacity to flooding and other climate change effects.[54]

Towns and cities in the sub-region are vulnerable to droughts and cyclones. Burundi, for example, has experienced a decline in water availability. Drought in the Horn of Africa has affected swathes of urban and rural dwellers, increasing migration patterns towards urban areas, where rural dwellers seek help from aid camps run by international agencies. When conflict combines with natural disaster, as in Somalia, aid agencies often have to withdraw, leaving local populations destitute and devoid of hope, and therefore increasingly vulnerable to various forms of exploitation.

Droughts in the sub-region have led to a net reduction in the production of staples and key crops such as maize, millet, sorghum, sugar cane and wheat. In the Comoros and Madagascar, prolonged drought and intensive rainfall seasons have led to rapid declines in soil fertility.[55] Eastern African countries at risk of drought include Djibouti, Eritrea, Ethiopia, Kenya and Somalia. A 2000 drought resulted in Kenya requiring food aid for around 2 million people. The areas that have been most severely affected by drought in Eastern Africa are in northern Kenya, central and southern Somalia, parts of Eritrea as well as the border between Djibouti and Ethiopia. Between 1980 and 2000 Ethiopia's occurrences of drought were recorded as increasing (see Table 4.7).[56]

These trends have continued during the past decade, with many East African countries affected by climate disasters such as extreme floods (e.g. Ethiopia in 2005; Kenya and South Sudan in 2010) and droughts in 2010/2011. The protracted drought of 2011 in the Horn of Africa affected some 13 million people across Somalia, Ethiopia and Kenya. Impacts on pastoralist communities were severe and difficult to overcome, because of nomadic peoples straddling national boundaries and weak institutional links between government and donor agencies. The effects of Somalia's 20-year internal conflict were exacerbated and rising inflation put food prices beyond the reach of the poor. By July 2011, 3.2 million Somalis needed life-saving assistance; Kenya required aid for 3.75 million Kenyans and a further 550,000 Somali refugees. Ethiopia's humanitarian caseload was 4.8 million people, including 240,000 Somali refugees. Though lessons were learned by governments and humanitarian agencies during this particular emergency; tens of thousands died, hundreds of thousands were displaced and millions lost livelihoods and meagre assets. This was a particularly serious drought; unprecedented in its severity in some areas, but it would be rash to discount it as a once-off event.[57]

Topsoil loss in Kenya has been dramatic over the past two and half decades, decreasing fertility and water absorption capacity of the soil.[58] In Malawi, droughts and floods reduced gross domestic product (GDP) by around 1.7 per cent per year, and by a minimum of 9 per cent during a severe one-in-twenty-year drought. Kenya and Ethiopia are among the most drought-prone countries in the sub-region.[59] Ethiopia has incorporated environmental legislation in its development planning, launching a Climate Resilient Green Economy Facility in 2013. However, environmental management and

BOX 4.4: **THE FIVE CITY CLIMATE CHANGE ADAPTATION NETWORK**

Cape Town (South Africa), Maputo Municipal Council (Mozambique), Port Louis Municipal Council (Mauritius) and Temeke Municipality (Dar es Salaam, Tanzania) are part of a five-city network pioneering climate change adaptation through participatory research and local action. In partnership with stakeholders and decision-makers, each city has a ***Climate Resilience Handbook*** that makes use of downscaled climate models; desktop research; documentation; ethnographic perspectives; observations; and participatory action tools.

Key areas stressed in the handbooks are interconnectivity, continuity and local relevance. ***Interconnectivity*** refers to the mutually linked systems that are affected by climate change and which threaten sustainability; namely social, economic and environmental systems. ***Continuity*** refers to the need for cohesion between the processes of planning, implementation, monitoring and evaluation in service of adaptation strategies and agendas. ***Local relevance*** refers to the need to adapt or customize solutions to local specificities by accommodating local knowledge, visions, plans and actions already being taken in terms of spatial planning.

In Eastern Africa, handbooks have been generated for Temeke Municipality and Port Louis and mainstreaming adaptation agendas have commenced in local government. In Temeke, specific issues being addressed include coastal mangrove integrity, dynamite fishing and its effects on coral reefs and sustainable fishing, flooding and transport systems. In Port Louis, the focus has been on introducing renewable energy (solar and wind), addressing flooding, drought, protection of coral reefs and threats to port infrastructure from tropical cyclones and storm surges. In both cases, the projects have engaged in participatory processes to identify adaptation options with local participants and have established "SMART" (i.e. specific, measureable, achievable, realistic and time-framed) goals for the city. They have set up capacity building, monitoring and evaluation and frameworks for action in each case, as outlined in their respective handbooks.

Source: ICLEI-Africa (2012).[66]

enforcement capacity remain weak.[60] Declines in Eastern African lake fisheries may also occur, further threatening food security.[61]

Cities such as Dar es Salaam, Djibouti, Mombasa, Port Louis and Victoria, are vulnerable to sea level rise.[62] A one-metre sea level rise in Kenya, for example, could incur losses of USD 500 million dollars in coconuts, cashew nuts and mangoes.[63] Central Dar es Salaam is highly prone to flooding, but many other low-lying and high-risk areas have also been identified.[64] Island nations, such as Madagascar, the Seychelles and Reunion, may have suffered a decline in the integrity of their coral reef systems because of changing ocean salinities, which in turn may reduce natural protection levels provided by coral reefs from storm surges and tsunamis. The diverse habitats and species hosted by coral reef systems will also be affected and tourism-dependent economies of these islands will suffer.[65]

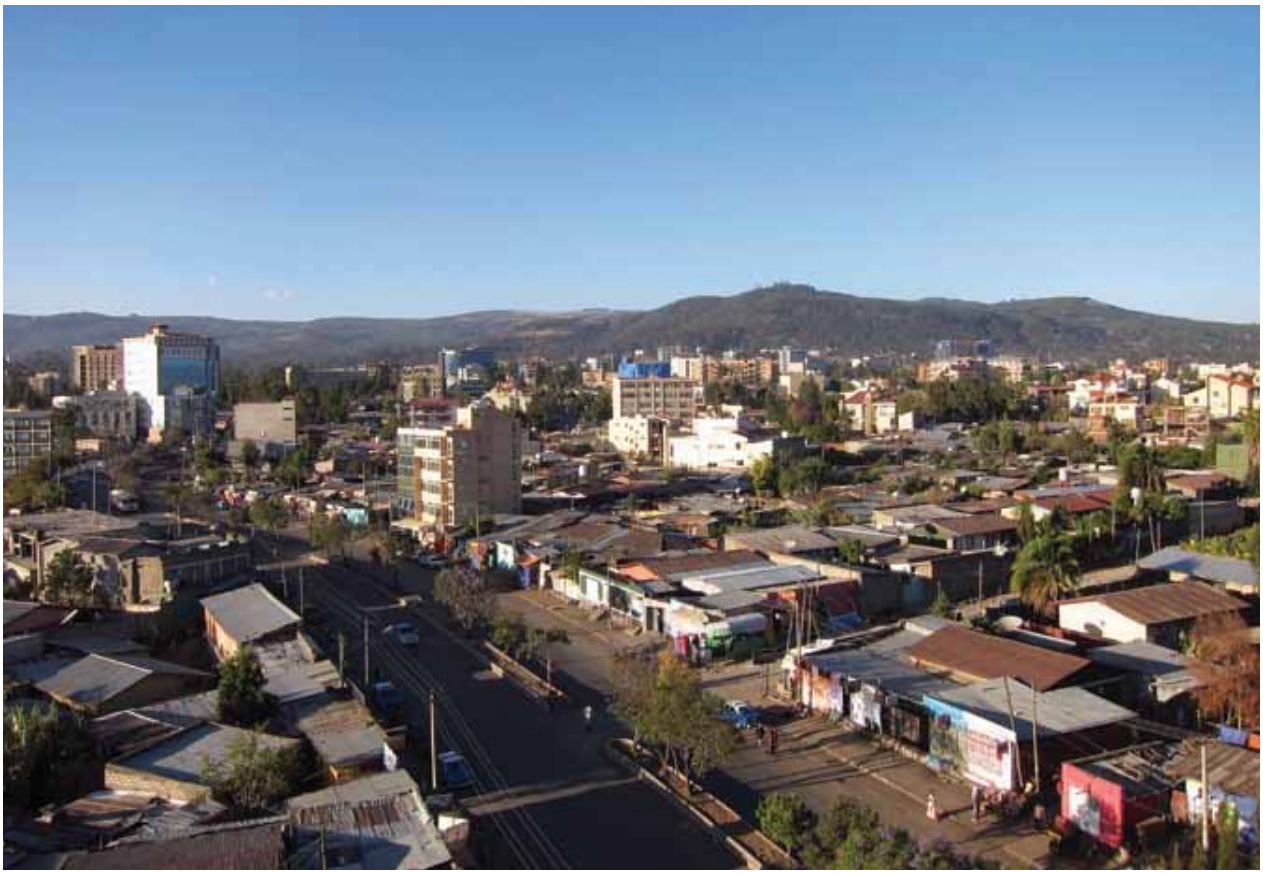
Mahe (Seychelles) has embarked on a land reclamation adaptation project to boost climate resilience, but adaptation programmes (see also Text Box 4.4) are few and poorly carried out in the rural areas of the sub-region, with adaptation essentially being "forced" upon the rural poor. They are not active participants in adaptation but are subject to it, forced to migrate to wherever the possibility of better survival exists. Many of the displaced walk hundreds of kilometres to reach places of safety, only to be further disenfranchised and exploited in their new countries or cities of residence.

In Kenya and Tanzania, where hydropower is a key energy source, climate change threatens energy supply. Tanzania's power shortages are estimated to account for 4 per cent of national GDP.[67] Drought is hence a serious threat to energy security and energy dependent activities. Rainfall is predicted to decrease in central Tanzania, where hydropower facilities are located. In Nairobi, water rationing has been employed to sustain energy supply, but these efforts are likely to prove inadequate to ensure the necessary scales of savings. It is important for cities to implement schemes for catchment management that alleviate upstream water losses, and promote better general ecosystem health. City water footprints often extend far from their immediate locations and cities have to move outside of their regular governance boundaries in order to ensure their future survival. At the regional and continental levels, water sharing is likely to become increasingly important. Ethiopian dam projects along the Blue Nile have exacerbated tensions with Egypt, which has occasionally adopted a threatening position (see Section 4.6). With South Sudan recently added to Eastern African countries that depend on the Nile, water sharing between nations is set to become even more hotly contested. Regional-scale agreements over shared water bodies such as the Nile River and Lake Victoria will likely be necessary to ensure long-term stability in the region and downstream countries.

Warming may exacerbate incidences of malaria in Eastern Africa; especially as the warm September to November and March to June periods have experienced higher rainfall.

There has been a recent spread of malaria into the central highlands of Kenya, for example, where malaria had previously not been detected. Increased incidence of, and vulnerability to, malaria is projected to occur in Burundi, Ethiopia, Kenya and Rwanda. Waterborne diseases, such as cholera and typhoid, may also increase due to warmer weather combined with wet conditions. This particularly affects slum settlements in densely populated urban areas where waterborne diseases are likely to spread more quickly.[68]

4.4
Urban Planning and Resource Management



Addis Ababa, the capital of Ethiopia. Ethiopia has both the highest proportion and the highest absolute number of slum dwellers in the sub-region. **©neiljs.** Licensed under the Creative Commons Attribution 2.0 Generic license.

Urban Governance in Eastern African Cities

Eastern African cities are characterized by sprawl, high levels of slums and informality, with limited institutional capacity to regulate, administer and manage housing and land market functions. Internal conflicts in the sub-region have crippled central governments and local municipalities in countries such as Somalia. Essentially, cities in Eastern Africa are fast growing, with the majority of growth taking place in slums. Ineffective and dual (formal and informal) land management systems present Eastern African governments with many local-level challenges, especially in terms of infrastructure provision and access to services. There is also a significant lack of monitoring and measuring systems that can provide data required to inform strategy-making and implementation. Informal systems fill a gap in the absence of adequate state capacity and political will to organize effective systems of governance and provide a sociocultural framework through which land markets can continue to operate.

Institutions are confronted with the unpredictability of urban-rural movement in Eastern Africa. Cities such as Nairobi have displayed significant return flows of people from the city to rural areas.[69] The complex dynamics of human movement in Eastern Africa add to planning difficulties, and more locally specific frameworks of understanding will be required to direct and inform planning and adaptation, especially at city, municipal and neighbourhood levels.

Urban planners in Eastern Africa are heavily influenced by the normative orientations of urban planning in the Global North. This is reflected in the three elements comprising most urban planning in Eastern Africa: a master plan (such as a spatial development framework); planning and building standards and regulations; and, a system to control

development.[70] Yet, the direct transplanting of the master planning approach into Eastern African planning contexts ignores the fact that the majority of growth in Eastern African cities occurs in slums and informal settlements. In such circumstances master planning may directly contribute to further social and spatial marginalization or exclusion from the urban fabric.[71] The segregation that characterizes many Eastern African cities involved the deployment of European urban planning processes as instruments of division and control over colonial cities and their populations, segregating them along racial, ethnic, or political lines.[72]

Planning regimes deployed in Eastern African (and other African) cities have not been focussed upon the needed sociopolitical reforms and changes necessary in African cities. Consequently, while isolated pockets of planned urban spaces exist in terms of residential, industrial and corridor developments, these remain largely piecemeal, responding only to a minority of, often wealthier, recipients.[73] Negotiating existing patterns of segregation, as well as how formal and informal systems combine, are critical elements to unlocking the "dualistic nature of urban development" that persists in cities such as Kampala and Nairobi where informal housing and development control procedures dominate.[74]

Urban governance regimes vary between Eastern African countries, with various types of centralized and decentralized systems. Radical changes introduced under Kenya's new constitution of 2010 should have major implications for local governments in the country. On paper, the constitution stipulates a reduction in presidential authority; a greater role for parliament; and an independent judiciary. It also makes provision for greater devolution of powers to elected local and district governments, though this will take time to implement. Kenya's urban governments can thus be expected to change. However, it is unclear whether this change will make them more responsive to popular pressures, as many of the new arrangements seem to have allocated more power to appointed officials than elected representatives.[75] There is also a very real danger that this attempt at devolution will swallow up resources for a multitude of additional staff that might otherwise have been spent on service delivery. As Kenya's public debt edges close to 50 per cent of gross domestic product, some government officials see the new system as financially, and politically, unworkable.[76]

With 45.2 per cent of Nairobi's income going to the richest 10 per cent of its population in 2006, and only 1.6 per cent of the city's income going to the poorest 10 per cent, the ability to deploy decentralized controls, functions and services within the city require accommodating a complex range of local considerations. [77] Instead, programmes that operate under these circumstances usually focus on *in situ* development and improving the resilience of poor urban households to shocks, as with the Nairobi Urban Social Protection Programme which Oxfam initiated in October 2009.[78]

In Blantyre, Malawi's commercial capital, the City Council administers all planning through the Directorate of Town Planning and Estates Management, yet development has been uneven and few neighbourhood commercial centres exist. Blantyre City Council is the leading authority in respect of slum upgrading, working alongside UN-Habitat in the "Cities without Slums Programme", to halve by 2015 the proportion of the population that lack access to adequate water and sanitation. The council also works alongside the Ministry of Lands, Housing and Urban Development and the Malawi Housing Corporation to provide housing in Blantyre. [79] Challenges that prevail in the city, however, include "lack of security of tenure and land governance, corruption, inadequate human capacity and poor billing system[s], and a lack of transparency leading to low revenue collection".[80]

Strong centralized governance is exercised in Ethiopia and Rwanda over functions, control mechanisms and services, albeit to different degrees. Ethiopia has a history of centralization, though a level of decentralization has occurred in Addis Ababa and Dire Dawa with regard to community participation; employment creation; service delivery; local empowerment; and housing. Both cities have, in a sense, been elevated to the same level of authority as the nine Ethiopian states.[81]

In September 2009, 30 people were killed in riots in Kampala, perhaps contributing to the decision of the central government to become more directly involved in the city. After the failure of decentralized governance due to corruption and lack of resources, the Government of Uganda tabled a bill in 2010 to take over management of the city.[82]

Rural-urban migration has been especially high in conflict-ridden Somalia, where the government exerts limited control over the national territory and informal modes of land and housing acquisition; trade, employment, security and service provision dominate everyday life. Mogadishu has been particularly affected by high levels of violence and the city's northern districts are patrolled by militias and vigilante groups in the absence of formal policing systems. Security has improved since the Islamist youth movement Al-Shabaab withdrew from Mogadishu in August 2011, though killings continue and the Transitional Federal Government remains inherently unstable.[83]

Municipal and central governments have only limited capacity to govern urban land markets effectively. Revenue from land and property transfers, sales, rates and taxes, upon which municipalities generally depend, is uncollected and is captured by the informal sector. The dual system of land management in Eastern African cities therefore presents municipalities, city and central governments with a challenge; the system is unsuitable for the long-term development of these cities, since municipal revenues and the capacity to act are inadequate to the task. Since the 1990s, municipal services have been heavily privatized in Eastern African cities and the modes through which privatization of municipal services has proceeded include open competition; management contracts; franchising; concessions; and, compulsory competitive tendering. For example, by 1996, 56.8 per cent and 55 per cent, respectively, of Kampala and Jinja (Uganda) households were supplied by private water companies.[84]

Private developers and service providers are active in Eastern African cities, despite the insecurity associated with investment; opportunities exist for growth precisely because of the lack of formal infrastructure and service provision. Private sector projects usually involve establishing gated developments aiming for off-grid infrastructural security. These inadvertently fragment urban landscapes, contributing to higher levels of separation of the wealthy from poor areas and residents (see also Text Box 4.1)[85]. In summary, urban governance in Eastern African cities encounters a wide range of contexts, including high levels of poverty, slums and inequality, and conflict-ridden urban zones that are contested by militant political and religious groups. Decentralization faces a range of challenges, especially that of achieving greater levels of coordination, revenue collection, and more equitable governance and service provision across the city. Overcoming these challenges would provide an essential foundation for healthy and liveable urban environments in Eastern Africa.

Slums and Informal Settlements

High slum and informal settlement growth rates reflect the unmet demand for land and housing in Eastern African countries.

Household budgets are dominated by spending on food, energy and transport, which prevents them from absorbing the exogenous shocks that raise prices in these sectors. Consequently, there is little room for poor and low-income households to raise revenue to invest in formal land and housing markets. Unless households can be made more resilient to increases in price for food, energy and transport, there can be no thought of transition to more formal urban systems (see Box 4.5).

The vast majority of people in Eastern Africa live in slums (Table 4.8), up to 79.1 per cent in Ethiopia and 78 per cent in Madagascar in 2007. Of the urban populations listed in Table 4.9, more than 64 per cent lived in slums in 2005, with the exception of Kenya (54.8 per cent). At the city level, slum proportions can reach 70 per cent (Djibouti City) or even 85 per cent (Kampala).[87] Despite declining percentages of slum dwellers in some cases (Table 4.8), absolute numbers have continued to rise (Table 4.9). Rwanda is particularly striking because of conflict displacements during the 1990s.

Ironically, sprawl and over-densification occur side by side in Eastern African cities, especially where slums have expanded

TABLE 4.8: **PERCENTAGE OF PEOPLE LIVING IN SLUMS IN EASTERN AFRICAN COUNTRIES**

Country	1990	1995	2000	2005	2007
Burundi	--	--	--	64.3	--
Comoros	65.4	65.4	65.4	68.9	68.9
Ethiopia	95.5	95.5	88.6	81.8	79.1
Kenya	54.9	54.8	54.8	54.8	54.8
Madagascar	93.0	88.6	84.1	80.6	78.0
Malawi	66.4	66.4	66.4	66.4	67.7
Rwanda	96.0	87.9	79.7	71.6	68.3
Somalia	--	--	--	73.5	--
Uganda	75.0	75.0	75.0	66.7	63.4
Tanzania	77.4	73.7	70.1	66.4	65.0

Source: UN-Habitat (2009) Global Urban Indicators 2009, Table (7)

TABLE 4.9: **NUMBERS OF PEOPLE LIVING IN SLUMS IN EASTERN AFRICAN COUNTRIES (THOUSANDS)**

Country	1990	1995	2000	2005	2007
Burundi	--	--	--	481	--
Comoros	96	112	128	153	162
Ethiopia	6,163	8,001	9,164	10,380	10,923
Kenya	2,345	2,848	3,379	4,044	4,370
Madagascar	2,636	3,186	3,694	4,283	4,470
Malawi	725	889	1,171	1,522	1,722
Rwanda	379	411	898	1,160	1,198
Somalia	--	--	--	2,120	--
Uganda	1,482	1,858	2,238	2,423	2,507
Tanzania	3,725	4,528	5,291	6,186	6,580

Source: UN-Habitat (2009) Global Urban Indicators 2009, Table (7)

BOX 4.5: **ADDRESSING FOOD AND WATER INSECURITY**

Despite significant contributions to human health, livelihoods, and food security, urban agriculture in Dar es Salaam has received relatively low political support from central and local government due to its informal and unregulated state. As a result, many urban farmers experience insecurity of land access and tenure, and are unable to invest in the improvement of their land, inputs, and infrastructure. Moreover, due to the cross-sectoral nature of urban agriculture, governance of the practice is also contextual, as there are no standardized regulatory tools and few resources to support the implementation of urban agriculture into food policy. Although there have been several attempts to legitimize and institutionalize urban agriculture in Dar es Salaam by various international and foreign organizations, very little has changed politically over the past 30 years. This case uses the example of the facilitation of the incorporation and approval of urban agriculture by Sustainable Cities International into the Dar es Salaam 2012-2032 Master Plan, and examines how local and central governments legitimize the practice of urban agriculture through multi-stakeholder processes.

▲ *Matuta* agriculture in Dar es Salaam, Tanzania. ©2005 Sattler et al; licensee BioMed Central Ltd. Distributed under the terms of the Creative Commons Attribution License.

Urban Development Tackled

Urban agriculture in Dar es Salaam has had an important and historical influence on the urban food system. Despite the significant contribution of urban agriculture to urban livelihoods, land access and insecurity of tenure still poses the greatest challenge to urban farmers. Since the 1970s a variety of planning, development and research projects have focused on urban agriculture. The 1979 master plan and the 1992-2003 Sustainable Dar es Salaam Projects under the UN-Habitat Sustainable Cities Programme both acknowledged the importance of urban agriculture, but on the ground implementation of physical planning for urban agriculture was never realized. Moreover, the former German Agency for Technical Cooperation's Urban Vegetable Promotion Project and the Canadian International Development Research Council's support for local researchers under the Sustainable Dar es Salaam Projects, have been notable contributions to promoting urban agriculture in Dar es Salaam.

The Programme and its Activities

Recognition of urban agriculture as a legitimate activity is among one of the greatest barriers to its incorporation into formal planning processes. In 2010, Sustainable Cities International facilitated a multi-stakeholder process intended to reignite the incorporation of urban agriculture into urban planning processes. Stakeholders were determined through a baseline study and needs assessment. These stakeholders represented urban planners, urban agriculture and livestock extension agents, civil society, urban farmer groups, university and research institutions, community members, urban and regional authorities, and ministries focusing on land, agriculture, food or livestock issues. This intervention, along with related workshops, determined that for local and national government to recognize urban agriculture it would have to be formalized under the Dar es Salaam Master Plan 2012-2032. In order to drive the formal legitimization forward simultaneous top-down and bottom-up involvement was encouraged. Further consultations followed to ensure the inclusion of all stakeholders. In response to a need for a common voice of urban farmers represented at such consultations the Tanzania Food Garden Network was formed to create partnerships which can help find solutions to meet the needs of urban and peri-urban farmers in Tanzania. Over the course of three years urban agriculture was accepted in the Master Plan by zoning for agriculture in the peri-urban areas. Although this is a long-term process, subject to potential implementation changes, the foreseen outcomes of the process have the potential to conserve agricultural land on the peripheral areas of the city.

The sustainability of urban agriculture is largely dependent on political commitment from local and central government. This commitment can be built upon by the efforts of local and national champions, shifts in paradigm and co-ownership of legitimization and implementation processes.

Compiled by Afton Halloran (Sustainable Cities International).
Sources: Dongus (2000); Jacobi and others (2000); Hoogland (2003); de Zeeuw and others (2010), p86.

▲ A young boy sits besides an open sewer in the Kibera slum, Nairobi which was the focus of much of the post-election violence of 2007. **©Eoghan Rice / Trócaire.** Licensed under the Creative Commons Attribution 2.0 Generic license.

vertically to accommodate increasing demand for housing. These exacerbate local pressure on resources and services. In Addis Ababa some 40 per cent of housing stock is formal, yet 26 per cent of those in formal housing lack access to toilets; 33 per cent share toilets with more than six families; and 34 per cent rely on public water taps that have unreliable supply.[88] In Arusha (Tanzania) 75 per cent of homes are unplanned and 80 per cent are made of mud.[89] Overcrowding, rising rents, food insecurity and poor sanitation combine in Arusha's informal areas and slums to render residents, and especially children, vulnerable to insecurity.[90]

Nairobi is also dominated by pervasive slums and informal settlements, where living conditions are desperately challenging for the urban poor because of extremely high settlement densities. In 2009, one-third of Kenya's entire food insecure resided in Nairobi, 1.33 million of a national total of 4 million food-insecure people.[91] The poorest spent 75 per cent of their income on staple foods; eight times more than the wealthy for water; and women living in slums were five times more likely to be unemployed. Nairobi's slum children experience more health problems than the rest of the country; nearly half of the children under the age of five years are stunted; and infant and neo-natal mortality is greater than in the rest of the country. Higher incidences of diarrhoea and fever occur among Nairobi's slum children, perhaps as a consequence of the high price of clean water and lack of sanitation for the urban poor.[92]

Access to Services

Service provision is inadequate in most of urban Eastern Africa, given the high percentage of slums and informality in most of the sub-region and its cities.[93] Access to services in the Eastern African cities varies considerably (Table 4.11). In 2006, only 18 per cent of Lilongwe's population had access to electricity, 6 per cent had access to sewerage and 20.2 per cent had access to piped water. In contrast, in 2005, 96.9 per cent of Addis Ababa's population enjoyed access to electricity, 68.8 per cent had access to piped water but access to sewerage was still low, at 8.9 per cent. In the cities shown in Table 4.11, access to sewerage was particularly low for all cities except Nazret, Ethiopia, which had 58.2 per cent access to sewerage.

The Comoros, Malawi, Rwanda and Somalia all have low levels of urban services (Table 4.10). There is a lack of directed programmes and concerted actions to deal with the increasing services challenge in slums and informal land settlements. Sanitation is one of the key challenges of Eastern African cities, with low levels of service across most countries and cities except in Nairobi and Nazret. In Nairobi and Mombasa

TABLE 4.10: **ACCESS TO SERVICES FOR SELECTED CITIES IN EASTERN AFRICA (PERCENTAGE OF HOUSEHOLDS)**

Country	City	Year	Piped Water	Sewerage	Mobile	Access to Electricity
Comoros	Femboni	2000	31.3	1.2	--	31.3
Comoros	Moroni	2000	25.8	4.8	--	67.2
Comoros	Mutsamudu	2000	73.8	8.0	--	53.1
Ethiopia	Addis Ababa	2005	68.8	8.9	30.8	96.9
Ethiopia	Nazret	2000	43.0	58.2	20.4	95.5
Kenya	Mombasa	2008	36.4	28.5	80.6	57.9
Kenya	Nairobi	2008	78.2	71.3	92.5	88.6
Madagascar	Antananarivo	2003	22.0	11.0	--	67.8
Malawi	Blantyre	2006	30.6	10.9	35.1	32.7
Malawi	Lilongwe	2006	20.2	6.0	26.5	18.0
Malawi	Mzaza	2006	41.9	17.0	32.5	35.6
Rwanda	Kigali	2005	20.5	8.4	39.4	40.8
Somalia	National	2006	38.6	33.3	26.2	30.5
Uganda	Kampala	2006	26.0	10.7	67.6	59.0
Tanzania	Arusha	2004	59.3	11.0	--	35.0
Tanzania	Dar es Salaam	2004	62.1	10.0	--	59.8

Source: UN-Habitat (2009) Global Urban Indicators 2009, Table 12

TABLE 4.11: **ACCESS TO DRINKING WATER AND SANITATION IN EASTERN AFRICA (PERCENTAGE OF URBAN POPULATION)**

Country	Improved Drinking Water Coverage		Household Connection to Improved Drinking Water		Improved Sanitation Coverage	
Year	1990	2008	1990	2008	1990	2008
Burundi	97	83	32	47	41	49
Comoros	98	91	31	53	34	50
Djibouti	80	98	69	82	73	63
Eritrea	62	74	40	42	58	52
Ethiopia	77	98	10	40	21	29
Kenya	91	83	57	44	24	27
Madagascar	78	71	25	14	14	15
Malawi	90	95	45	26	50	51
Mauritius	100	100	100	100	93	93
Reunion	--	--	--	--	--	--
Rwanda	96	77	32	15	35	50
Seychelles	--	100	--	100	--	97
Somalia	--	67	--	51	--	52
Uganda	78	91	9	19	35	38
Tanzania	94	80	34	23	27	32

Source: UN-Habitat (2009) Global Urban Indicators 2009, Table 11

mobile telephone access is extremely high, perhaps reflecting the engagement of these cities in high levels of trade and services in the sub-region. Access to electricity varies widely, with Ethiopian and Kenyan cities exhibiting the highest levels of access.

Water and sanitation

Although improved drinking water services, household connections to improved drinking water and improved sanitation coverage have been achieved in many Eastern African cities, levels of service provision remain generally low (Table 4.10). Djibouti, Mauritius and the Seychelles have high levels of service provision across all categories. In Djibouti, improved urban drinking water coverage and urban household connection to drinking water increased from 80-98 per cent and 69-82 per cent respectively, while urban sanitation coverage declined from 73-63 per cent over the same period (between 1990 and 2008) (Table 4.11). Mauritius enjoys 100 per cent coverage for household connections to drinking water, and 93 per cent sanitation coverage. In general, for cities listed in Table 4.11, although urban drinking water coverage improved between 1990 and 2008, household connections remained low, as did sanitation coverage. Addis Ababa, Dar es Salaam and Nairobi are all vulnerable to drought, thus water

▲ This type of pit latrine is quite common in Kampala's slum areas. The toilet slab is elevated to protect it against flooding, which happens regularly. **©SuSanA Secretariat.** Licensed under the Creative Commons Attribution 2.0 Generic license.

service provision and efficient water management (including water infrastructure) are priorities. In Nairobi's informal settlement of Kibera only 4 per cent of households have an in-house water connection, while 15 per cent make use of yard taps and 68 per cent are serviced by water kiosks run by private individuals, community-based organizations or non-government organizations.[94] In Kigali, 87 per cent of the city has access to water; most of the city relies on water kiosks and neighbours with piped water, who resell at the higher kiosk rates.[95]

Most slum dwellers are forced to obtain water and sanitation services from independent operators and pay far more than their wealthier urban counterparts for these services. In Arusha, poor residents can barely afford water services from private vendors.[96] Untreated sewage is often released into water bodies in Dar es Salaam and Kampala, especially when sewerage systems fail.[97]

Nairobi relies on water sources in the Aberdare mountain range. Conservation efforts have succeeded in increasing indigenous forest cover in the range from 62,000 hectares in 2000 to 131,000 hectares in 2010.[98] However, excessive groundwater abstraction from the Nairobi Aquifer Suite and the use of pesticides in the agro-zone of the aquifer's recharge area threatens groundwater quality.[99] Conservation efforts to secure Nairobi's water supply and quality have focused on "payment for ecosystem services" such as nutrient filtering and absorption of pollutants, the protection of ecologically important areas, and improved borehole management. Wastewater treatment infrastructure in Nairobi consists of the Ruai and Kariobangi plants, which are utilized at 74 per cent and 34 per cent respectively and do not meet effluent standards. [100]

Residents in Kampala, where only 8.4 per cent of the city is linked to the sewer network, depend on latrines, septic tanks and open sewer systems which pollute freshwater and groundwater sources in the city. Many areas in Kampala are also susceptible to flooding.[101] The city is close to Lake Victoria, which is a major water source. However, urban municipal loads account for 77 per cent of pollution into the lake, and recent research blames poor sewerage infrastructure and the widespread use of pit latrines in slum areas for contamination of ground and surface water sources.[102]

Around 30 per cent of Addis Ababa's population live without sanitation facilities and 57 per cent use pit latrines. Some 60 per cent of the food consumed in the city is produced by urban agriculture irrigated by wastewater. Contamination of city water sources by solid and liquid wastes, including organic and inorganic pollutants, affects downstream agriculture. Of Addis Ababa's 2,500 industries, 90 per cent lacked on-site treatment facilities in 1999. Medical waste is a critical concern, with over 430 tons of "contagious waste" produced by Addis Ababa's 29 hospitals. Despite on-site wastewater

TABLE 4.12: **HYDROPOWER POTENTIAL AND INSTALLED CAPACITY IN EASTERN AFRICAN COUNTRIES (MW)**

Country	Large-Scale Hydropower Installed Capacity	Large-Scale Hydropower Potential Capacity from Rivers	Small-Scale Hydropower Installed Capacity from Dams	Small-Scale Hydropower Potential Capacity from Rivers
Burundi	43	300	14.5	--
Djibouti	--	--	32.93	--
Ethiopia	589	15,000	80	133
Kenya	1,197	6,000	6.28	3,000
Malawi	283	--	4.5	--
Rwanda	33.3	100	1	--
Tanzania	380		4	68.12
Uganda	205	500	8	736

Source: HRAA (2008) Hydropower Resource Assessment of Africa.

treatment facilities, medical wastes have contaminated streams with pathogens that have increased intestinal infections in the area. For example, people who make use of the Akaki River for bathing or drinking are at risk from pathogens such as typhoid, dysentery and cholera.[103]

Centralized wastewater processing plants are vulnerable because of inadequate upgrading and maintenance as well as frequent power cuts, resulting in the release of pathogenic wastewater. Indeed, though large centralized infrastructure projects may be politically satisfying and appeal to donors, they often prove hugely inefficient. The improvement of water and sanitation systems in the region could be better promoted by introducing and supporting sanitation financing arrangements and mechanisms such as sanitation marketing, microfinancing and public-private partnerships; introducing subsidies and incentives to boost engagement and willingness to pay amongst poor urban dwellers; the use of appropriate, low cost technologies that are easy to service and maintain; by participatory stakeholder engagement; improving political will; and cooperation between ministries.[104]

Energy

Eastern Africa has the second largest potential hydropower resources in Africa, of which about 20 per cent have been developed. The sub-region is highly dependent on this energy source. Falling water levels in rivers and lakes and lack of investment in the power sector have, however, resulted in power shortages. The reaction has been the creation of the East Africa Power Pool, a strategic intermediary encouraging cooperation to improve energy production, transmission and interconnections between power grid networks of countries. Ethiopia's rich highland water resources (including the source of the Blue Nile) hold significant hydropower potential (Table 4.12) and form a central part of the vision to ensure energy security in the sub-region. Current projects aim to improve capacity by 3,600 MW by 2015.[105]

Tanzania generates 561 MW in hydropower capacity from the Rufiji and Pangani river basins. Some 55 per cent of Tanzania's power generation is based on hydropower. Failure of adequate rain has led Tanzania to other sources of energy production such as gas turbines and geothermal energy. Electricity shortages and load-shedding in Tanzania have seriously curtailed industrial growth.[106] In Rwanda, electricity generation from two hydropower stations fell by 68 per cent over the last 20 years because of sedimentation, a further indication of the desperate need to manage watersheds sustainably.[107]

Eastern Africa's cities' energy needs are met in a variety of ways. In 2006, Nairobi consumed half of the whole national electricity grid supply in Kenya, mainly for lighting. Although 72 per cent of Nairobi households had access to electricity, only 20 per cent used it for cooking, while 68 per cent made use of kerosene.[108] In Lilongwe, hydroelectric power from the Shire River in the south of Malawi is provided by the Electricity Supply Commission of Malawi, which supplies 45,105 households. Annual electricity growth demand is between 7 and 9 MW in Lilongwe, but affordability determines electricity use, and this has decreased while the use of fuel wood has increased in the city. Frequent blackouts, illegal connections and electricity infrastructure vandalism plagues electricity supply in Lilongwe.[109] Around 45 per cent of Blantyre households used electricity for lighting, while 17 per cent made use of it for cooking, and 64 per cent cooked with charcoal. Informal settlement dwellers had low levels of access to electricity (12 per cent of the population) and 88 per cent made use of firewood and charcoal for energy.[110] In Mzuzu, the third largest and fastest-growing urban centre in Malawi, there is one major electricity supplier and some businesses and residences make use of solar power, and 65 per cent of cooking in the city was done using firewood.[111]

In Port Louis, Mauritius, the government-run Central Electricity Board is mandated with supplying power to the entire country. Poor families receive help from the National Empowerment Foundation to connect to the electricity grid. The government has also embraced solar-heated geysers as part of its social housing programme.[112] Without a title deed, however, families are unable to get help to obtain electricity.[113]

Energy poverty faces the vast majority of Eastern African urban dwellers. Businesses and households that can afford off-grid technologies, such as generators, to endure blackouts and

TABLE 4.13: **WASTE COMPOSITION AND COLLECTION IN SELECTED CITIES IN EASTERN AFRICA**

City	Dar es Salaam	Moshi	Kampala	Jinja	Lira	Nairobi
Percentage Waste Collected	40	61	60	55	43	65
Percentage Population Paying for Waste	--	35	--	--	--	45
Kilograms waste per capita per day	0.4	0.9	0.59	0.55	0.5	0.6
Paper	9	9	8.3	8	5.5	6
Plastic	9	9	9.5	7.9	6.8	12
Glass	4	3	1.3	0.7	1.9	2
Metal	3	2	0.3	0.5	2.2	1
Other	4	12	3.4	4.3	14.9	14
Biowaste	71	65	77.2	78.6	68.7	65

Source: KCC 2006, NEA 2007, Scheinberg et al 2010; in Okot-Okumu 2012, 4.

intermittent supply often do so. Kenya has one of the most dynamic solar markets on the continent, with more than 2,000 trained solar technicians. Uganda also has a thriving solar market, with local solutions being developed to boost informal trade. These include solar panels that are used to charge mobile phones, where large demand enables mothers to work from home, for example, or to run small informal energy provision businesses. Regional, national and city-scale energy challenges are all linked. Attempts to broker regional energy stability will be vital in providing energy security in the sub-region's cities. However, access to power grids, and the ability to pay for electricity, remains very low in the poorer settlements.

Centralized infrastructure is costly and unreliable, requiring upgrading, maintenance, as well as new and diverse sources of energy, preferably renewable, to feed into the national grid. For this reason, bottom-up energy solutions will likely prove critical in the short and medium terms, especially where *in situ* development in slums and informal settlements is concerned. Solar, biogas and wind energy technologies can all be deployed at household, neighbourhood and city levels, depending on the relative benefits of scaling upwards or downwards. Diversifying and liberalizing energy markets through national and local policies, incentives and schemes at small, medium and large scales may bring about much needed competitive development cycles in energy provision. The technologies most likely to succeed must be affordable to the majority of the poor and low-income urban dwellers. Renewable energy technologies such as biogas digesters, which can close waste (sewage, biomass), nutrient and energy loops and bring about some measure of household resilience, can play a major role in freeing up household budgets and reducing their vulnerability to rising energy costs.

Waste

Waste management in Eastern African cities has undergone a transition from being an exclusive undertaking by urban authorities, to various combinations of public, private and informal sector actors, and is becoming progressively decentralized. Waste collection levels in a number of the sub-region's cities range between 40 per cent and 65 per cent (Table 4.13).[114]

Biowastes comprise the majority of waste (Table 4.13), but the volume of electronic waste is increasing in Eastern African urban centres, presenting a significant environmental threat. Higher income groups typically contribute larger solid waste amounts than low-income households. Open dumping is common in lower-income neighbourhoods but large institutions such as shopping malls and markets use transfer stations such as skips and bunkers that are served daily. Waste remains largely unsorted suggesting that infrastructural and behavioural change will be required for migration towards closed waste loop management.[115]

Nairobi's solid waste collection is worst in the city's slums, where there is the greatest demand for the service and for good sanitation.[116] In Nairobi, 45 per cent of the population pay for, and use, waste collection services, while in Moshi, Tanzania, it is 35 per cent. In Nairobi the degree of inclusiveness of informal sector and private sector operators is "high" whereas in Moshi it is "low", yet Moshi has been hailed as the "cleanest city in Tanzania" for a number of successive years, but local business acumen may be responsible for its reputation. A new landfill disposal site at Kaloleni in Moshi, operates in terms of a "confine, compact and cover" strategy (as opposed to engineering-oriented management control), which is a moderate step towards more sanitary landfill operations. Sustaining solid waste management activities, however, requires concerted resources as well as waste infrastructure upgrade and management.[117] For example, Kampala's Mpererwe landfill was originally designed and constructed with inbuilt sustainability considerations (including treatment of leachates through an artificial wetland system), but insufficient resources undermined the project and within a year it was operating as an open dump and the wetland system was dysfunctional. Mpererwe landfill has been targeted for a landfill-gas generation project by the World Bank's Carbon Finance Unit.[118]

In Blantyre, Malawi, the City Council is responsible for urban waste management. Formally settled areas have access to solid waste collection but informal settlements and slums

have little or no access to formal collection systems. Some 78 per cent of Blantyre's informal dwellers dispose of sanitation waste in pit latrines. In Dire Dawa, Ethiopia, only 48 per cent of solid waste is collected.[119] In Port Louis and Black River (Mauritius), all waste collection services are contracted out. This includes drain, road, road verge and watercourse waste management.[120]

Zomba City Council, the Malawi Housing Corporation and the private sector all share responsibility for waste management. Formalized, high- and middle-income neighbourhoods are serviced, while informal settlements receive little or no access to waste management services and use communal waste pits. Lilongwe City Council is, however, involved in a project to turn solid waste into manure.[121]

Urban waste disposal sites in Eastern African cities are often in environmentally sensitive areas such as lowlands, wetlands, forest edges or alongside bodies of water. They are often unsanitary, offering little protection from leachate and other contaminants.[122] Waste pickers are unregulated and are exposed to severe health risks as they dig through a mix of industrial, residential, commercial and other waste. The potential for leveraging waste streams in Eastern Africa is high, especially because of the high levels of organic biowaste that can be converted to biogas and compost. Rising levels of electronic waste open up further opportunities for recycling. However, infrastructure and funding is necessary, as well as skills transfer and development programmes to ensure that there is long-term maintenance of urban solid waste management initiatives. The transition from centralized waste management systems towards the inclusion of decentralized public-private and private sector waste management has potential for generating recycling and reuse waste activities that can link to other sectors such as agriculture and energy. Generating local opportunities that decentralized systems can unlock is a critical consideration for Eastern African cities, where employment and local cash flow generating activities are necessary and should be encouraged.

Urban Ecosystem Management

Research projects that focus on understanding the linkages between ecological integrity and human activities in the region, and how cities as major settlements may be affected, are urgently needed. This is especially the case where urban activities (such as waste, sanitation and water table management) are concerned. Pollution, solid waste and wastewater disposal in Eastern African cities poses serious risks to river water quality and wetland ecological integrity, as well as to human health. Uncontrolled use of wood for cooking fuel in many Eastern African cities can result in ecological degradation and a loss of absorptive capacity in upstream catchments, making city dwellers more vulnerable to floods. An understanding of the critical limits and thresholds of local ecosystems and upstream catchment areas depends upon consistently funded long-term monitoring. Regulatory policies and controls, as well as local projects for ensuring environmental protection can play a key role in reversing urban environmental degradation. These measures can also unlock new opportunities for semi-skilled and skilled workers who can be trained, progressively, to take up higher-level opportunities in environmental protection. This, however, will also require the extension of effective governance structures in the areas in question.

General

There is an acute awareness of what the lack of services, such as energy and water, means for informal and formal markets in Eastern Africa. Without these services many opportunities that would otherwise be exploitable remain unused. Informal households, for example, can generate a significant amount of their income from activities such as vegetable gardening, car washing and hair salon services (as in Dar es Salaam, Kampala and Nairobi), which depend on access to water, and in many cases, electrical energy and fuel for transport or backup energy supply.[123] Without services in place, the range of opportunities narrows and poor urban dwellers are less able to build their own capacity to improve intergenerational wealth and opportunity, significantly.

Building regional coherence around an environmental agenda for Eastern African cities, while desirable, may prove difficult to realize in the short term. Keeping accurate records is perhaps a first step in quantifying and analysing the scale of the challenge. Formalizing informal processes and building sufficient checks and balances to ensure that exploitation and corruption is minimized are key priorities. International donors and large financial institutions need to insist on these when partnering Eastern African states on adaptation projects. However, achieving this may require a radical decentralization of powers at municipal levels, to enable community-level self-organization and appropriate self-regulation of these processes. In a sense, the need for top-down formal institutions that can act intelligently on governance, planning and resource management strategies is obvious.

Yet, achieving this may take several decades at best. In the meantime, it is important to reconsider how bottom-up systems of governance might be implemented in the short and medium terms, with a view to assimilating them into larger formal systems of governance in the future. Adopting a bottom-up approach may also give governments enough experiential knowledge of bottom-up interactions and information so that they can establish the appropriate levels at which to aggregate governance and regulatory functions (ward, municipal, city, city-region, national, perhaps even regional, and so forth).

At city level, mayors from Dar es Salaam, Kisumu, Nairobi, Bujumbura, Kigali and Port Louis have signed up to the international "Making Cities Resilient: My city is getting ready" campaign, which subscribes to ten key principles that act in service of urban resilience.[124] Finance is the main obstacle to climate change adaptation in the region. Resilient, decentralized infrastructure and service provision are required if local-scale climate resilience is to be improved. What remains is building the knowledge base and institutional capacity to deliver large-scale climate resilience projects.

4.5
Urban Culture and Change Agents

11-year-old Ronald conducts the 'M-LISADA' street-kids band in Kampala. The children play euphoniums, trumpets, tubas, drums and trombones. **©Penny Tweedie/Panos Pictures.**

Socioculturally, economically and demographically, a variety of active and potential agents for change exist in Eastern African cities. Faith-based organizations, social, political and creative youth movements, civil society, the private sector and government agencies all occupy social and economic spaces where they provide services, run projects, develop community capacity and skills. A range of possibilities converge in different urban spaces, where networks of people come together around common socioeconomic and political causes, economic and community activities, community regulation functions (e.g. informal policing) and creative pursuits. All are important in generating a diverse social base that can respond to the wide range of changes that urban Eastern African society is undergoing.

Culture and Identity

Eastern African cities are multi-ethnic, but clan and ethnic affiliations often dictate settlement patterns. The sub-region also hosts a diversity of religions, most of whose members are active. Christianity is represented by Ethiopian Orthodox, Roman Catholic and a variety of Protestant churches, many of them evangelical. Most Muslims are Sunni, though Ismailis are also prominent. Religious practice is particularly heterogeneous in cities on the Indian Ocean coast, which has been exposed to centuries of influence from the Arabian and Indian peninsulas. Some of the sub-region's conflicts have involved religious ideologies, most notably in Somalia, where clashes have occurred between militant groups and the traditionally more eclectic local observance. Sometimes such conflicts have also taken on an ethnic hue, involving Somali

irredentism, for instance. A consequence of this complex regional political mosaic has been the emergence of a Somali enclave in Eastleigh, in the heart of Nairobi. Conflict also exacerbates refugee flows to settlements seeking greater safety, though the deployment of Kenyan troops in southern Somalia has also invited terrorist reprisals in central Nairobi.

Eastern African cities often have clearly demarcated enclaves. These might be defined along ethnic lines, as in Kigali,[125] religious persuasion and socioeconomic class. In some cases slum and informal settlements achieve partial autonomy with a form of unrecognized self-government. Here, traditional customs and practices may maintain an element of social control alongside the more direct power exercised by gangs and informal self-defence groups. In turn, while constituted out of necessity, these ethnic enclaves can provide *de facto* forms of organization through which conflicts are conducted, decreasing social cohesion and undermining attempts at pluralism at the same time. Spatial segregation by socioeconomic class, such as in gated communities in Nairobi, reinforces differences and often results in a tenuous tolerance which, when subjected to pressure, can quickly collapse.[126] Even in cities that were once praised for diversity and pluralism, such as Addis Ababa, the emergence of gated communities and sprawl threatens to eradicate any memory of tolerant coexistence. As migration continues to intensify in the region and ethnic, religious, gender and age differences become more pronounced in the urban sociopolitical and cultural framework, changes in identity and culture are also likely to ensue. Early indications are that significant changes in identity are occurring amongst the youth; who now engage with a range of local, historical and global narratives in order to construct their urban identity.

Informality

By its very nature informality, whether political or economic, is difficult to measure. In part this is because people involved in the informal sector are generally reluctant to draw attention to their evasion of regulation and taxation. Informality prevails, nevertheless, among survival strategies for the poor and enrichment strategies for the well-connected. How all of these diverse aspects feature in national accounts is largely a matter of guesswork.[127]

The size of informal economies in Eastern Africa is indicated by household surveys that suggest, for instance, that in the 1990s, 58.1 per cent of Kenyans were employed in the informal economy, as were 67 per cent of Tanzanians and 83.7 per cent of Ugandans. In the early 2000s the contribution of the Ugandan informal economy to the Gross National Product was estimated at 43.1 per cent while in 2009-2010, 21 per cent of Ugandans employed were involved in informal business activities.[128]

Informality is usually represented as an alternative system, although it does not function entirely independently of formal systems, but is linked through various interactions and transactions required to import goods. Cross-border trade is often conducted by informal traders who maintain networks

▲ A street vendor bearing his wares in the Oyster Bay District of Dar es Salaam, Tanzania. **©Adam Jones, Ph.D.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

between large cities in different regions. Mogadishu, for example, maintains strong linkages with Nairobi. Informal transport workers across Africa have either escaped, or directly resisted, taxation within the formal economies of their countries. These struggles have easily been politicized by competing political parties. In Kampala, it was realized that taxing 40,000 motorcycle taxis, called *boda-bodas*, could earn the City Council at least USD 300,000. A levy was introduced, which was strongly resisted and became a rallying point against the ruling opposition party on the council. This became a key issue in the 2006 elections, with drivers presenting their grievances to the country's president, who instructed Kampala City Council to lift the levy.[129]

Private Sector

The private sector, including mobile telecommunications providers and urban property developers, is extremely active in Eastern Africa. Their success is conditional on the high economic growth rates of Eastern African economies, especially in the cities, where the majority of trade activities and other relations play out. Investment in Africa yielded returns four times higher than any other region in the world between 2004 and 2008.[130] This represents a growing opportunity for establishing markets, and the private sector has a direct interest in ensuring that Eastern African societies provide stable, growing markets for their expansion. Accordingly, when public-private partnerships are forged, governments have the opportunity to enforce relations between the private and informal sectors that guarantee development on mutually agreed terms. The tendency of private urban developers has been to recreate and recast versions of first world urban enclaves, and to isolate them from forms of informality in the quest for first world urban modernity. But informality exists alongside formality, and in large measure supersedes the social function of the formal sector. As such, it is already a force for socioeconomic change, or conversely for socioeconomic stagnation. Harnessing the existing forces of informality may be challenging, but if sensitively achieved it may well point to the future of African urban governance. Informality is embedded far more deeply in Eastern African society than are formal systems.

Regulation will only be well received in the informal sector if it is accompanied with assistance and guarantees. Ending the exploitation that results from state corruption and abuse of power is perhaps the first key step towards forging new relationships between the formal institutions of governance and the informal sectors. Linking formal to informal trading activities through clear, delineated policy and local regulation and enforcement of trader rights is necessary. An example of this would be the setting up of local cooperatives and non-profit operations to serve specific functions within informal sector value chains: those that perform actual activities (e.g. composting and energy generation (biogas) for the community), and those that perform support functions such as technical skills development, technical advice (e.g. for urban farmers), and so forth.

Gender

The question of gender in Eastern African urban society is influenced by changes in gender roles and identities that affect men and women in the cities. The increasing disempowerment of men in urban (and rural) Eastern Africa has arguably undermined patriarchal systems, as they have lost legitimacy in the face of widespread socioeconomic change.[131] Male feelings of "inadequacy or self-esteem" can be potent drivers of sociocultural behaviours. With serious challenges emerging to the traditional role of men as "breadwinners" and "head of the family" in Eastern Africa, understanding the changing role of masculinity in society is perhaps as important as highlighting the plight of women. Both understandings are critical to the gender future that faces Eastern Africa, and especially its dynamic urban centres. In Uganda, where homosexuality is effectively outlawed and bills are being put before parliament to make it a capital offence, understanding the nuances of how gender relations are evolving in the interstices and interactions between traditional gender roles in cities, where the most significant changes are occurring, is critical to unlocking a more tolerant and diverse gender culture.[132]

Gender differentiators, however, are key factors in Eastern African urban society. Female heads of households have lower levels of secondary education (30 per cent) compared to their male counterparts (43 per cent).[133] In Addis Ababa, 23 per cent of women are illiterate, 22 per cent have only primary education and 4 per cent have entered college or university (tertiary education). In addition, women lack access to employment opportunities in the public and private sectors.[134] In Nairobi, school attendance amongst girls is lower than for boys.[135] Education levels are generally lower amongst women in Eastern Africa than men because boys are given preference over girls in education. Women engaged in agricultural activities lack access to land, often farming in marginal areas lacking irrigation. Limited capital and access to financial services also hampers the ability of women to engage in economic activities more robustly, especially women engaged in informal activities such as trade and service provision. Institutional attitudes also hamper the advancement of women in Eastern Africa, since women often have to access bank accounts, for example, under their husband's name.[136]

Women are key actors in the informal sector. In slums and informal settlements, women often bear the greater responsibility of ensuring that the socioeconomic needs of the community are met. In Nairobi's large and densely populated informal settlement of Kibera 85 per cent of the women are engaged in water collection.[137] In the absence of basic services such as water, sanitation and electricity supply, women often bear the responsibility of employing informal modes of services acquisition, sewage disposal and collecting firewood and water. Women-headed households are also common in informal settlements, where they bear the dual burden of performing these activities and generating household income.

It is likely that cities will spearhead gender transformations in Eastern Africa. Therefore, considering ways in which women can compete more equally with men in access to finance, markets, employment, trade and commerce will be critical when devising city development strategies and plans. Several measures can be taken to improve the plight of women in the informal sector: amending trade policy; establishing legal and regulatory frameworks for the inclusion of women in state and business organizations and institutions; improving support services to women; encouraging and supporting the formation and participation of women's groups and improving women's access to credit.[138] There are some signs of gender transformation in the region, however: Rwanda has the highest proportion of female parliamentarians in the world.[139] In Lilongwe, Malawi, female education is equivalent to male education from primary to tertiary levels, although women have fewer leadership positions in society and suffer gender-based violence.[140] In Tanzania, 33 per cent of seats on local councils are allocated to women.[141]

The role of women is perhaps an equal, if not more important, factor for consideration in evaluating the socioeconomic and cultural transformations of Eastern African society. Indigenous patriarchal and colonial systems of governance prejudiced women in relation to their male counterparts, rendering them subject to the vagaries of the hierarchical construction of colonial societies, where social rank was dictated through race or gender. In dysfunctional societies, women often play the lead role in ensuring social stability at the family, extended family and local community levels. They are the backbone of communities, and usually take responsibility for ensuring social cohesion in tenuous and demanding circumstances characterized by poverty, lack of services, lack of social support and security. Gender transformation of Eastern African society is already occurring, but formalizing the rights of women, especially those who live in informality, is desperately required. As agents of social change, women in developing countries generally show the greatest potential. Local development schemes that capitalize on this reality are often more successful in their endeavours. Harnessing and protecting the potential for gender empowerment and equality in the sub-region should take a central role in the reconceptualization of a future urban Eastern Africa.

Youth

The youth bulge in Eastern Africa is highly evident. In Kenya and Uganda over 77 per cent of the population is under the age of 30. In Kenya, this new generation is referred to as "dotcoms", a direct reference to the Internet generation. Anecdotally, they are described disparagingly by older generations as aspiring to pure materialism and instant success at the sacrifice of social capital. However, being globally interconnected through information and communication technology (ICT) platforms such as mobile telephones and social networking sites, young Kenyans, for example, have been involved in setting up sites that make data more accessible and user-friendly, including edWeb, Virtual City and *Mzalenddougo*.[142] The sub-region's youth are seeking out new and different ways of doing things, they are entrepreneurial and mobile.

A recent report highlighted the potential for ICT platforms to encourage and improve youth participation in urban governance.[143] In Uganda, UNICEF supports local youth groups who run a programme called "Ureport" that, by March 2012, had signed up 89,000 Ugandans who receive polls, reports and information regarding local services and issues. By December 2012, this number had almost doubled to 170,000 members.[144] In Kibera settlement, the "Map Kibera" initiative uses open digital mapping techniques to chart the settlement. The initiative has expanded into media and local news through the Kibera News Network and the Voice of Kibera (Map Kibera Online). Local youth compose and upload online content using Short Message Service tools and the *Ushaidi* (Ushaidi Online) platform.[145] Map Kibera youth leaders are now included in security planning by the national Ministry of Internal Security.[146]

In Tanzania, youth to youth platforms are being set up to act as catalysts for improving civic engagement amongst the youth. Youth leaders established an online forum (vijanaforum.org) where information and ideas can be exchanged, and where decisions can be taken on collective action over critical issues.[147] In Rwanda and Tanzania, younger leaders are making use of ICT tools to reach the youth directly. Rwanda's president, Paul Kagame, has made extensive use of ICT to obtain direct contact with citizens. He also appointed a Minister of Youth and ICT in April 2012, in support of a strategy to increase the capacity and responsiveness of governance. However, this has been slow to translate at local levels such as the Municipality of Kigali, for example, because of a lack of local ICT capacity, as well as the public's preference for following national issues rather than those that are local.[148]

Though the description of a "techno-savvy" Eastern African urban youth is an attractive one, it ignores the large masses of youth who are radicalized in the region and who are not as mobile as their "dotcom" counterparts.[149] Conflicts in the region have drawn many youth into radicalized political, religious, ideological and ethnic movements. The proliferation of youth movements is easy to observe. A quick Internet search reveals the astonishing numbers of new organizations being established for the vast range of socio-ethnic causes across the region.[150] The city provides many avenues for congregation around specific causes, and migrants to the city often find ways to mobilize around key issues that affect them. The youth, who are generally better educated than their parents and who are better able to negotiate urban and global systems, increasingly take the lead in establishing groups, projects and programmes for alleviating crises or challenges that communities face. At the regional level, this "cheetah generation", who appear to move at a speed incomprehensible to older generations, represent a critical resource and force for sociopolitical and

economic change in the region.[151] For example, the Eastern African Community Youth Organization (EACYO) is based in Nairobi and runs programmes that range from youth and environment to poverty alleviation and healthy living (EACYO Online).

However, violent and extremist organizations are also absorbing significant numbers of youth, driven by political factors in Eastern African society.[152] The struggle between the forces for peaceful or violent change will determine the future stability of the region and the relevance of formal systems of governance.

There are many reasons for the radicalization of Eastern Africa's youth, including massive youth unemployment and a lack of education and skills. The high economic growth rates in many of the region's economies have not been reflected in improved living standards, and opportunities continue to evade most young people. Marginalization of the youth manifests itself in prolonged "coming of age" periods that see them unable to marry, earn a living, purchase property and so forth. Transnational and radical ideals have more potential to take root and grow within the desperately marginalized and socially immobile youth of the region. To some, the absence of strong national identities, (except perhaps in Tanzania where political leadership under President Julius Nyerere from 1964 to 1985 deliberately cultivated a strong sense of national identity), may account for the increased tendency to organize around microidentities (such as clan) or trans-local identities (principally religious).[153]

This alienation or dislocation of the youth from traditional and formal systems can take different forms. In Tanzania, the youth speak their own colloquial Swahili (which has become known as the "language of the ignorant", or "angry Swahili" or "Dar language" or "young people's language"), which consists of an evolving street language. Dar es Salaam is widely regarded by the youth of Tanzania as a fantastic place of opportunity and is commonly referred to by the youth as "Bongoland" (brainland).[154] Mixed into this alternative medium of communication and of disengagement, are references and links to global popular culture and music, which are often used to describe "poor governance and hypocrisy".[155] During the 1991 Gulf War, the term *"scudi ya bongo"* emerged to describe the youth of Dar es Salaam, in direct reference to Saddam Hussein's scud missile attacks, and reveals the extent to which the alienation of the youth from conventional society has progressed.[156]

The vast majority of Eastern African youth, unable to attain adequate education and vocational training, are relegated to self-employment or seeking work within the informal sector. For them it is essential to understand how this sector works if they are to survive and many develop innovative and creative strategies. In Dar es Salaam, informal economic life is referred to as *"mambo ya kujificha"*, which translates as "the affairs of hiding oneself".[157] There is a great deal of creativity – music, art, theatre, public radio – that also functions in the informal space alongside novel business ventures that target niches, and illegal ventures that use informal structures to facilitate their operation. Hip-hop subculture is prevalent amongst Eastern African urban youth, as with urban youth throughout Africa.[158]

The key observation to make here is that the interface between the youth (and informal traders – see earlier) and the state is characterized by dysfunction and distrust. There are no effective avenues for the youth (or the informal sector) to engage with institutions of public governance on the day-to-day issues that affect them. In summary, the youth of Eastern Africa are mobile and self-organized within peer and other groups to a large degree. Somali youth in Cape Town, South Africa, expend a great deal of energy on forming youth groups to fill different functions in the community and to represent critical political issues that are unfolding in their home countries in Eastern Africa. For example, the Ogadeni Youth Front, in Cape Town (South Africa), exists amongst a plethora of similar diaspora-based Somali youth organizations in South Africa and across the world. In South Sudan, high levels of youth activism and an explosion of creative culture have emerged, even forging linkages with youth groups in Northern Sudan in order to build efforts for peace between the nations. Harnessing this huge existing potential for social change is the answer because fighting it will reproduce the oppressive and stagnant conditions that could lead to widespread, violent protests and all-out insurrections similar to that unfolding in the countries of Northern Africa and the Middle East, or even worse.

The youth are the key to establishing positively reinforcing values and norms in Eastern Africa. This requires engaging with the belief systems that govern the youth. Their belief systems are governed by diverse influences, and influencing them directly may be impossible. The populist youth programmes of the past may no longer be appropriate for the cheetah or dotcom generation of Eastern Africa. Their integration into formal and informal systems of governance, and the right to participate in constructing their own future is crucial to reversing the conditions to which the youth are currently subjected, and restricted by, in Eastern African urban society. Consequently, it may be appropriate for Eastern African cities and governments to construct new avenues for participation and access that service the relationship between the youth and the state and its institutions of governance.

Involving media institutions and agencies is also desirable, as they provide an alternative regulatory framework to formal institutions of governance, can raise awareness and create transparency in new ways.

For example, ICT and media platforms can play a key role in spreading awareness of wrongdoings, holding formal institutions responsible and in creating accountability. Strong leadership and strong media are the foundations for sociopolitical action in society, and Eastern Africa has great need of these functions.

4.6 Emerging Issues

The Tekezé Dam is a double-curvature arch dam in the Tigray region of northern Ethiopia on the Tekezé River, a Nile tributary that flows through one of the deepest canyons in the world. The dam consists of four turbines, together generating 300 MW. **©Paul Snook**

The Nile Basin Initiative[159]

The longest river in the world, the Nile, measures 6,695 km from the source of one of its tributaries in Burundi to the Mediterranean. Navigable for 4,149 km of its length, the Nile basin covers an area of 3,179,543 km². Lakes Victoria, Kyoga, Albert, Edward and Tana all form part of the basin.

Eleven countries are traversed by this great artery or its tributaries: Burundi, the Democratic Republic of Congo, Egypt, Ethiopia, Eritrea, Kenya, Rwanda, South Sudan, Sudan, Tanzania and Uganda (Map 4.1; Table 4.14). Altogether some 54 per cent of the population of the riparian states live within the Nile Basin, some of them in the large cities and towns of Addis Ababa (which falls partly within the basin), Alexandria, Cairo, Entebbe, Jinja, Juba, Kampala, Khartoum, Kisumu, Luxor, Mwanza and Wad Medani. Though cities and other built-up areas comprise only 0.1 per cent of the basin's area, all are dependent on its waters for their livelihoods. The mean annual rainfall for the basin is 1,046 mm, and its mean annual flow at Aswan is 84 billion cubic metres.[160] This is quite small by comparison with other great river systems; the Congo River with a basin only 30 per cent larger, has an annual discharge of some 1,300 cubic metres. The Nile traverses large arid and semi-arid zones with low runoff rates while evapotranspiration, in extensive wetland areas such as the Sudd (South Sudan), and evaporation from the large Egyptian dams also reduce the flow.[161]

As shown in Table 4.14, 45.8 per cent of the Nile Basin falls within the sub-region. The river has two main branches: the White Nile, which rises in the Great Lakes region and contributes a steady 10-20 per cent of the river's discharge, and the highly seasonal and sediment-laden Blue Nile which

MAP 4.1: **MAP ILLUSTRATING THE EXTENT OF THE NILE BASIN INITIATIVE**

Source: MJS - on basis of Nile Basin Initiative (2012) The State of the River Nile Basin 2012

contributes between 80 per cent and 90 per cent, and rises in Lake Tana in the Ethiopian Highlands. The two main branches meet at Khartoum, whence they flow northwards.

There is little potential for adding to the water supply of the Nile, though the ecologically risky drainage of the Sudd has been mooted in the past. Moreover, rising population pressure and the imperatives of industrial development will place growing demands on what is essentially a finite resource. Increasing supply will require the judicious application of integrated water management to ensure equity, efficiency and sustainability in the river's use.[162] The Nile Basin Initiative was established in 1999 to attempt just that. Though it has achieved a great deal, however, in drawing attention to the natural and man-made threats to the viability of the river, and has proposed a number of technical solutions to solve problems related to irrigation and hydropower development, it finds its way blocked at present by political difficulties of a different order.[163]

There are presently disputes between the riparian countries about the equitable usage of the Nile. As can be seen in Table 4.15, Egypt and Sudan (which in Table 4.15 still includes South Sudan) are responsible for more than 86 per cent of the withdrawals, though their countries account for less than 3 per cent of the total internal renewable resources. This lies at the heart of the complaints lodged by some of the upstream states about the restraints placed upon them by unequal treaties, concluded during the colonial era, which gave Egypt and Sudan an effective veto on the use of the Nile's waters by other states.

There is potential for hydropower production in upstream countries and Table 4.16 shows the limited use currently being made of this resource compared to that of Egypt and Sudan.

TABLE 4.14: **THE COUNTRIES OF THE NILE BASIN**

	Area km²	Area falling within the Nile Basin km²	Area within Nile Basin as % of country area	Area within basin as % of Nile Basin	Population 2012	% of national population living in Nile Basin
Burundi	28,062	13,860	49.4	0.4	8,749,387	58.8
DR Congo	2,401,941	21,796	0.9	0.7	69,575,394	3.8
Egypt	996,960	302,452	30.3	9.5	83,958,369	95.7
Eritrea	121,722	25,697	21.1	0.8	5,580,862	37.6
Ethiopia	1,144,035	365,318	31.9	11.5	86,538,534	40.3
Kenya	593,116	51,363	8.7	1.6	42,749,418	39.7
Rwanda	24,550	20,625	84.0	0.6	11,271,786	82.6
South Sudan	635,150	620,626	97.7	19.5	9,614,498	99.0
Sudan	1,864,049	1,396,230	74.9	44.0	36,107,585	87.3
Tanzania	933,566	118,507	12.7	3.7	47,656,367	21.5
Uganda	241,248	240,067	99.5	7.6	35,620,977	99.4

Source: Nile Basin Initiative (2012) The State of the River Nile Basin 2012

TABLE 4.15: **RESOURCES, WITHDRAWALS AND STORAGE CAPACITY OF THE NILE RIVER**

	Resources		Withdrawals			Storage
	Total internal renewable (billion m^3/yr) 2009	Total (billion m^3/yr) latest 2000-2010	As % of total actual renewable latest 2000-2010	As % of total withdrawal in Nile region latest 2000-2010	Agriculture as % of total withdrawal latest 2000-2010	Dam capacity m^3 per person Latest available 2012
Burundi	10.1	0.29	2.9	0.2	77.1	n.a
DR Congo	900.0	0.62	0.1	0.5	17.7	1
Egypt	1.8	68.30	3,794.4	56.5	86.4	2,073
Eritrea	2.8	0.58	20.8	0.5	94.5	8
Ethiopia	122.0	5.56	4.6	4.6	93.6	67
Kenya	20.7	2.74	13.2	2.3	79.2	611
Rwanda	9.5	0.15	1.6	0.1	68.0	n.a
Sudan / South Sudan	30.0	37.14	123.8	30.7	97.1	200
Tanzania	84.0	5.18	6.2	4.3	89.4	2,324
Uganda	39.0	0.32	0.8	0.3	37.8	2,393

Source: Nile Basin Initiative (2012) The State of the River Nile Basin 2012

TABLE 4.16: **POTENTIAL AND INSTALLED HYDROPOWER IN THE NILE BASIN**

	MW future potential 2010	MW installed 2010
Burundi	20	0
DR Congo	78	0
Egypt	40	2,862
Eritrea	-	-
Ethiopia	13,947	931
Kenya	191	25
Rwanda	20	27
South Sudan	2,570	-
Sudan	3,280	1,593
Tanzania	280	0
Uganda	4,343	380

Source: Nile Basin Initiative (2012) The State of the River Nile Basin 2012

In an attempt to resolve these issues, the nine countries of the Nile Basin Initiative have seeked to negotiate a Cooperative Framework Agreement. They have reached an accord on the principles and all the articles save one, which deals with water security. Egypt and Sudan are unwilling to move forwards unless the contentious undertaking is amended from *"Not to significantly affect the water security of any other Nile Basin State"* to *"Not to adversely affect the water security and current uses and rights of any other Nile Basin State."*[164] At first sight this may not appear a major problem, but it speaks to the unwillingness of the governments in Cairo and Khartoum to abrogate the rights granted them under the 1929 and 1959 Nile Agreements, the second of which divided the Nile's waters between Egypt and Sudan, and allocated them the rights to 55.5 billion m^3 and 18 billion m^3 of the river's water annually. These agreements also contained a clause wherein the former colonial power, Great Britain, promised not to construct irrigation or power schemes upstream if this would impinge on the water flow reaching Egypt. The Egyptian and Sudanese position is that this agreement is binding on all the states of the Nile Basin in accordance with international law.[165]

Ethiopia, Kenya, Rwanda, Tanzania and Uganda attempted to force the issue by signing the Cooperative Framework Agreement in May 2010. Since then they have been joined by Burundi, while South Sudan intimated in March 2013 that it would also sign.[166] With the accession to the agreement of six states, the Nile Basin Commission could come into being, despite the objections of Egypt and Sudan, and could technically begin to authorize upstream irrigation and power projects.[167]

Opinion is still divided as to whether the Nile Basin will act as a cornerstone of interregional cooperation or as a trigger for continental conflict. Casting the whole issue in terms of "water security" may actually have been counterproductive, in that it moves the debate into more emotive territory. In June 2013, Ethiopia's diversion of the Blue Nile to

enable dam construction led to a sharp exchange with the Egyptian government, though this has been overshadowed by subsequent political developments in Cairo.[168]

The Lake Victoria Basin Commission

Lake Victoria is the most significant body of water in the Nile River Basin and, with a surface area of 68,800 km², is the largest lake in Africa and the second largest body of freshwater in the world. It contains about 2,750 km³ of water and receives some 80 per cent of its volume from direct rainfall. Over the past 20 years or so the lake has suffered the effects of high oxygen concentrations, which have led to the proliferation of algae and invasion by water hyacinth. These changes are the result of various activities and pollution sources in the catchment that increase nutrient inflows such as dumping of raw sewage, domestic and industrial waste from the many cities and towns around its shores. These urban areas include Kisii, Kisumu and Homa Bay in Kenya; Bukoba, Musoma and Mwanza in Tanzania; and Entebbe, Jinja and Kampala in Uganda. The burning of biomass within the basin, as well as agricultural runoff of fertilizers and other chemicals, further add to these ecological problems. Equally alarming is the fall of water levels in Lake Victoria by some two metres between 2002 and 2006, largely as a result of the completion of Uganda's Kiira hydropower station.[169]

In 2001 the East African Community (EAC) established the Lake Victoria Commission, formerly the Lake Victoria Development Programme, to coordinate development management around the lake and its basin. Ultimately, it aims to turn the Lake Victoria Basin into an economic growth zone with the aid of external partners.[170]

In December 2010, the African Development Bank approved the Lake Victoria Water and Sanitation Programme for Kenya, Tanzania and Uganda, with the aim of improving the water and sanitation services in 15 selected towns in the Lake Victoria Basin. The programme supports pro-poor water and sanitation investment, but also wants to reduce the environmental impact of urbanization on the lake, which

MAP 4.2: **THE LAKE VICTORIA BASIN**

Source: MJS - on basis of International Lake Environmental Committee Foundation (ILEC), Lake Basin Management Initiative main report. www.ilec.or.jp.

is vital for the bordering countries' water supply, tourism, fisheries, transport and waste disposal. In addition it is an important source of water for the Nile.[171]

Changes in climate over the past 30 years have contributed significantly to the challenges facing the communities settled around Lake Victoria. Decreasing rainfall and recurrent droughts have led to crop failures, severe water shortages, decline in water quality and in power generation. Alternatively, periods of severe rainfall have led to flooding, displacement, destruction of plants and outbreaks of waterborne diseases. In 2010, the Lake Victoria Basin Commission carried out a vulnerability assessment for the urban and rural populations around the lake. This analysed communities coping strategies and made recommendations about the need for policymakers, communities and aid agencies to anticipate further climate shocks.[172]

Food Security

The East African Community's international trade in agricultural products increased from USD 2 billion in 2002 to USD 7.5 billion in 2008. Of the five states within the community only Kenya imported more agricultural produce than it exported. Yet, during the same period the community's trade balance in agricultural goods changed from a surplus of USD 322 million in 2002 to a USD 644 million deficit in 2008. Kenya's deficit of USD 1.34 billion in 2008 accounts for the adverse position in that year.[173]

Such figures, though encouraging in terms of the balance of trade, however, have a darker side: during the same period the average per capita calorie intake in the region remained low. Although Ugandans were relatively well fed, the rest of the community consumed on average less than 2,060 calories per day.[174]

There are 81 million hectares of agricultural land in the community area, about 48 per cent of the region's total land area. Pastures make up 5.7 million hectares, arable land some 24.2 million hectares and 5 million hectares are under permanent crops. Only 328,000 hectares of the community's agricultural land was irrigated in 2008, which emphasizes the dependence on rain-fed agriculture with all its seasonal vulnerabilities. Even so, agriculture accounted for 89 per cent of Tanzania's water withdrawals in the decade 1998-2007, 79 per cent in Kenya, 77 per cent in Burundi and 68 per cent in Rwanda; only in Uganda did domestic consumption of water exceed that of agriculture.[175]

The Eastern African food crisis of 2011 affected over 12.4 million people from Djibouti, Ethiopia, Kenya and Somalia, killing tens of thousands of people. Multiple factors, including conflict and drought combined to exacerbate the crisis, which was further worsened by systemic weaknesses, such as inadequate investment and institutional support for pastoralist and marginal communities. Hundreds of thousands of refugees from Somalia, the country hardest hit by the crisis, streamed into Ethiopia and Kenya seeking food aid, with Dollo Ado (Ethiopia) and Dadaab (Kenya) being particularly overwhelmed. The funding gap for coping with the crisis rose to USD 1 billion, with original appeals for USD 800 million being only half-met, illustrating the scope and scale of the crisis in the sub-region.[176]

In Somalia, where some 1.46 million people were displaced as a result of conflict, Mogadishu's 370,000 internally displaced persons rose to 470,000 between August and September 2011 alone, indicating the severity of the impacts of the food crisis on the Somali capital. In this respect, the plight of pastoral communities in Somalia is of special significance, since reduced access to rangelands and water resources compounds the vulnerability of these communities, placing additional pressures on the sub-region's cities in times of crisis. National governments need to engage actively in land-use planning for pastoral communities; protection of pastoral land rights; long-term water resource planning and management of strategic reserves; infrastructure investment; and drought-resistant agriculture. The pre-existing vulnerability of the region to drought (Table 4.7) requires contingency measures and mechanisms to increase drought resilience, including water resource protection and management; strategic management of cereal and grain stockpiles (cereals and grains), and improved dry-land farming techniques. The overall adaptive capacity of communities to drought must be strengthened and access to markets and financial support mechanisms needs to be improved.[177]

The sub-region's cities were heavily affected by food price instability in the region towards the end of 2011, despite generally declining prices and the commencement of the harvest season. In cities such as Nairobi and Mombasa (Kenya), Dar es Salaam and Arusha (Tanzania), Kampala (Uganda) and Addis Ababa (Ethiopia) food price increases were between 15 per cent (Tanzania) and 172 per cent (Ethiopia) higher for 2011 than for the same periods of comparison the previous year. In Southern Sudan, sorghum prices rose up to 43 per cent between August and November 2011 yet prices fell by 6 per cent in the capital Juba (due to imports from Uganda) while still remaining between 15 per pent and 243 per cent higher than in September 2010.[178]

The cultivation of food in Eastern Africa is usually relegated to the peri-urban areas of cities, where the urban poor reside. With food insecurity projected to affect more than 500 million people in sub-Saharan countries, and given the high growth rates of Eastern African cities, food security is a critical issue (See also Box 4.5). Food consumes around 60 per cent of poor urban household budgets in the Eastern African region, with fuel taking up more than 10 per cent. Grain imports are projected to rise by an average of between 20 per cent and 40 per cent in the decade leading up to 2020.[179]

In Kampala, urban agriculture is conducted on hillsides and wetland valleys. Almost half the city's households are involved in the production of food, from all socioeconomic groups, and produce up to 60 per cent of the cities food supply. Urban agriculture was legalized in 2005 in Kampala, yet by-laws in Mbale and Mbarara still prohibit urban agriculture. Decision-makers generally fail to recognize the new laws and urban farmers are hard pressed by the cost of permits.[180]

Wakulima market in Nairobi, Kenya is the largest market in East Africa. In 2011, the sub-region's cities were heavily affected by food price instability. **© Siegfried Modola/IRIN**

Rwanda emerged from devastating conflict and genocide in 1994 and embarked upon a nationwide peace and reconciliation programme in an attempt to rebuild and strengthen Rwandan society. Rural villages and urban centres have played an intimate and participatory role in the peace process. The country promoted the creation of a corruption-free environment and a well-managed and governed, clean capital city, in a bid to attract foreign direct investment. The capital, Kigali, has been hailed in the media as the future "Singapore of Africa" due to measures taken to improve the plight of slum dwellers; improved waste management; as well as banning plastic bags and smoking in public spaces. With only about one-tenth of Kigali's total land area settled, urban agriculture (in the marshes, valley lowlands and upstream areas) has been elevated in development planning for the city, contributing around 25 per cent of the city's food supply and employing an estimated 37 per cent of the city's workforce in small-scale agricultural activities.[181]

Food, water, energy, waste disposal and transport constitute the main everyday needs of urban dwellers, wherever they may reside in the world. In Eastern African cities, the nexus between these provisions is increasingly challenged by the diverse pressures that combine to escalate and amplify resource scarcity, demand and prices, especially at the household level, and in poor urban households in particular. Adequate household food resilience should be the focus of regional cooperation, with the help of international bodies. Ensuring that food supply is "proximate, accessible and resilient" in Eastern Africa is critically important for the region's future food security, not least because of its high level of vulnerability to climate change impacts.[182] Adequate protection and preservation of land, especially on the urban peripheries, is required for food cultivation. Strategic use of stockpiles, and planning for dry periods, is critical to food security of the region and its cities. The rights and representation of urban farmers, who are usually poor, need to be strengthened so that they can participate in broader economic and sociopolitical decisions and public debates. Given the large number of unemployed youth in Eastern Africa, local urban agricultural cooperatives and schemes should be encouraged to train and equip young, working-age Eastern Africans to engage in urban agriculture, and the variety of complementary activities (such as compost, energy and diesel production from biomass, and integrated aquaculture farming). Institutions of higher education and civil society organizations can play a significant role, but it requires the backing and finance of municipalities, governments and international financing organizations to realize at larger scales of operation that transform the food resilience profiles of Eastern African cities and their households.

Yet food security, like issues of access to other resources, is seldom merely a matter of absolute scarcity. More food production does not always mean that those most in need are fed. Food availability and entitlements are the issue here. Access to food, and other goods, depends on purchasing power, especially in urban settings, but also on social perceptions of entitlement. In this respect, women and children are likely to feel deficiencies most acutely, and be more exposed to the lack of social safety nets.

On this view, a simple obsession with production is misplaced. Food security and resilience to other shocks demand that the whole issue of the inequality of risk be redressed.[183]

ENDNOTES

1. This sub-regional country listing is different from the regional grouping used in World Urbanization Prospects: The 2011 Revision, as Mozambique, Zambia and Zimbabwe, for the purposes of this report, fit better in the Southern Africa region. Regional data have been adjusted and are therefore different from the UNDESA totals and percentages.
2. Adjusted figures derived from *World Urbanization Prospects: The 2011 Revision,* UNDESA, New York, 2012.
3. *World Urbanization Prospects: The 2011 Revision,* UNDESA, New York, 2012.
4. Fripp, Charlie (2011). "Kenya set on multi-billion Konza city". *IT News Africa*, 10 August 2011 at www.itnewsafrica.com/2011/08/kenya-set-on-multi-billion -konza-city accessed 3 March 2013; Shikwati, James (2012). "Viewpoint: Will corruption kill of Kenya's Vision 2030 plans?" at www.bbc.co.uk/news/world-africa-19980173 accessed 3 March 2013; BBC (2013) "Kenya begins construction of 'silicon' city Konza", 23 January 2013 at www.bbc.co.uk/news/world-africa-21158928 accessed 3 March 2013; Konza Techno City (2013). "History" at www.konzacity.co.ke accessed 3 March 2013; BBC (2013) "Kenya begins construction of 'silicon' city Konza", 23 January 2013 at www.bbc.co.uk/news/world-africa-21158928 accessed 3 March 2013.
5. *Are Satellite Cities the (Official) Future of GHEA's Urbanization?* Greater Horn of Eastern Africa (GHES Outlook) #18, Society for International Development.
6. *Ibid*
7. African Development Bank (2013). *African Economic Outlook 2013: East African Countries,* passim.
8. Woodward, Peter (2013), *Crisis in the Horn of Africa: Politics, Piracy and the Threat of Terror.* (London, I B Taurus); International Crisis Group (2013). *Eritrea: Scenarios for Future Transition*, 28 March 2013.
9. Economist Intelligence Unit (2013) "Qatar diplomacy in the Horn of Africa". 2 August 2013.
10. Weinstein, Michael A (2013). *"International donors cut aid and inflate the Somali Federal Government"* at www.garoweonline.com accessed 8 February 2013.
11. Economist Intelligence Unit (2013). "Assessing Ethiopia's exposure to exogenous shocks", 30 January 2013.
12. Economist Intelligence Unit (2013). "Ethiopia moves closer to WTO membership". 21 January 2013.
13. Woodward, Peter (2013), *Crisis in the Horn of Africa: Politics, Piracy and the Threat of Terror.* (London, I B Taurus) pp 155-158.
14. Economist Intelligence Unit (2013). "Construction of Djibouti's third sea port begins". 28 December 2012.
15. African Development Bank Group (2012). *South Sudan: Interim Country Strategy Paper 2012-2014*, p 7.
16. World Bank (2012). *The East African Community: Reshaping Economic Geography of East Africa: From Regional to Global Integration.* pp 22-23.
17. *Ibid,* pp 24-25.
18. *Ibid,* pp 32-33.
19. *Ibid,* pp viii-16.
20. *Ibid,* pp viii-16.
21. African Development Bank (2012). *African Economic Outlook 2012: East African Countries*, pp 80-81.
22. *Ibid,* p 138.
23. Economist Intelligence Unit (2013). *Country Report:Tanzania*, March 2013, p 3.
24. African Development Bank (2012). *African Economic Outlook 2012: East African Countries*, p 148.
25. Trade Mark East Africa (2012), *Increasing Capacity at Dar es Salaam Port*, www.trademarkea.com accessed 24 May 2013; Tanzania Ministry of Lands, Housing and Human Settlements Development (2013), *Dar es Salaam Masterplan 2012-2032*, Roma 22 April 2013 at www.planning4adaptation.eu/Docs/newsInfoMaterial/05-2013/08/FONTANARI_22_APRIL_2013.pdf accessed 24 May 2013.
26. African Development Bank (2012). *African Economic Outlook 2012: East African Countries*, pp 158-159, 165; Shepherd, Ben (2013). *Oil in Uganda: International Lessons for Success.* (London, Chatham House).
27. Economist Intelligence Unit (2013). *Country Report: Uganda*, March 2013, pp 3, 22-23.
28. Oil4All (2013). "South Sudan-Uganda-Kenya Dynamics" at <wiki.openoil.net/index.php?title=South_Sudan-Uganda-Kenya_Dynamics>
29. Economist Intelligence Unit (2013). *Country Report: Rwanda*, March 2013, pp 9, 16-17; African Development Bank (2012). *African Economic Outlook 2012: East African Countries*, pp 94, 101.
30. Economist Intelligence Unit (2013). "Rwanda plans 350m sovereign bond", 11 March 2013.
31. Economist Intelligence Unit (2013). *Country Report: Burundi*, March 2013, pp 9-12.
32. Economist Intelligence Unit (2013). *Country Report:Sudan*, March 2013, pp 6-7.
33. Economist Intelligence Unit (2013). "China scotches South Sudan funding reports", 15 March 2013.
34. www.gurtong.net/ECM/Editorial/tabid/124/ctl/ArticleView/mid/519/articleId/5054/CABINET-MEMORANDUM-Proposal-For-The-Development-Of-The-New-Capital-City-Of-Southern-Sudan.aspx. Accessed 23 March 2013.
35. Economist Intelligence Unit (2013) *Country Report, Malawi,* May 2013, pp 2-10.
36. African Development Bank (2012). *African Economic Outlook 2012: Mauritius.*
37. Economist Intelligence Unit (2013). *Country Report: Mauritius*, March 2013, pp 3, 5.
38. Economist Intelligence Unit (2013). *Country Report: Seychelles*, March 2013, p 14.
39. Economist Intelligence Unit (2013). *Country Report: Comoros*, March 2013; African Development Bank (2012). *African Economic Outlook 2012: East African Countries*, pp 22-33.
40. African Development Bank (2012). *African Economic Outlook 2012: Madagascar;* Economist Intelligence Unit (2013). *Country Report: Madagascar*, March 2013.
41. UN-HABITAT (2008). *Ethiopia: Addis Ababa Urban Profile*, UN-HABITAT Regional and Technical Cooperation Division, p 8.
42. UN-HABITAT (2011). *Malawi: Blantyre Urban Profile*, UN-HABITAT Regional and Technical Cooperation Division, p 12.
43. SOWCR (2010/11). *State of the World's Cities 2010/11: Bridging the Urban Divide*, United Nations Human Settlements Programme, UN HABITAT, London, Sterling, VA, p 78.
44. Alliance Development Works / United Nations University / The Nature Conservancy. (2012). "WorldRiskReport 2012." Available at: www.worldriskreport.com/uploads/media/WRR_2012_en_online.pdf. Accessed 12 June 2013. Page 20.
45. *Ibid*
46. CSAG (2002). "Assessments of Impacts and Adaptations to Climate Change: Africa Climate Change Scenarios", Climate Systems Analysis Group (CSAG) University of Cape Town, Vol. 1 (www.csag.uct.ac.za); De Wit, M., and Stankiewicz, J. (2007). "Changes in surface water supply across Africa with predicted climate change, *Science*, vol. 311, 31 March 2006; Hulme, M., Doherty, R., Ngara, T., New, M. and Lister, D. (2001). "African climate change: 1900–2100". *Climate Research* , Vol. 17, pp. 145–68.
47. Global Water Initiative (2011). *Assessing Climate Change Vulnerability in East Africa. A Case Study on the Use of CARE's Climate Change Vulnerability and Capacity Assessment (CVCA) Methodology with the Global Water Initiative*, East Africa Program.
48. William, A.P., and Funk, C. (2011). A westward extension of the warm pool leads to a westward extension of the Walker circulation, drying eastern Africa. Climate Dynamics, 37: 2417-2435.
49. IPCC (2012). *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change*, Field, C.B., Barros, V., Stocker, T.F., Qin, D., Dokken, D.J., Ebi, K.L., Mastrandrea, M.D., Mach, K.J., Plattner, G.K., Allen, S.K., Tignor, M. and Midgeley, P.M. (eds.), Cambridge University Press, (UK: Cambridge and USA: New York).
50. The El Niño/Southern Oscillation Effect refers to temperature variations in the sea-surface of the East Pacific that have a global impact on temperatures in the southern Hemisphere. www.

ENDNOTES

linkingweatherandclimate.com/ENSO/.

51. IRIN (2012). "Eastern Africa: floods affect tens of thousands", *Integrated Regional Information Networks (IRIN) Humanitarian News and Analysis*, website: http://www.irinnews.org/report/96476/EASTERN-AFRICA-Floods-affect-tens-of-thousands. 8 October 2012; FEWSNET (2012). *Special Report: Potential Impacts of Likely 2012/13 El Nino Event*, August 2012, website: http://www.fews.net/docs/Publications/El%20Nino%20Special%20Report_2012_08_final.pdf

52. Lwasa, S. (2010). "Adapting urban areas in Africa to climate change: the case of Kampala", *Current Opinion in Environment and Sustainability*, Vol. 2, pp. 166-167.

53. Action Aid International (2007). *Unjust Waters. Climate Change, Flooding and the Protection of Poor Urban Communities: Experiences from Six African Cities*, pp 9-10. Action Aid International, accessed from www.actionaid.org.uk/doc_lib/unjust_waters.pdf.

54. Lwasa, S. (2010), p 168.

55. IFAD (2010). *Addressing Climate Change in East and Southern Africa*, IFAD.

56. Lukamba, M.T. (2010). "Natural disasters in African countries: what can we learn about them?, *The Journal for Transdisciplinary Research in Southern Africa*, No. 6, Vol. 2., pp. 482-483.

57. Slim, Hugo (2012) *ISAC Real-Time Evaluation of the Humanitarian Response to the Horn of Africa Drought Crisis in Somalia, Ethiopia and Kenya* < http://reliefweb.int/report/somalia/iasc-real-time-evaluation-humanitarian-response-horn-africa-drought-crisis-somalia> accessed 12 May 2013.

58. IFAD (2010). *Addressing Climate Change in East and Southern Africa*, IFAD.

59. UNISDR (2011). *Effective Measures to Build Resilience in Africa to Adapt to Climate Change*, Briefing Note 4, United Nations International Strategy for Disaster Risk Reduction (UNISDR), United Nations, Geneva.

60. African Development Bank (2013). *African Economic Outlook 2013: East African Countries*, p 70.

61. Boko, M., I. Niang, A. Nyong, C. Vogel, A. Githeko, M. Medany, B. Osman-Elasha, R. Tabo and P. Yanda, (2007). *Africa. Climate Change 2007: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J., and Hanson, C.E. (eds.), *Cambridge University Press*, (UK: Cambridge), p 451.

62. UN-HABITAT (2008). *State of the African Cities Report 2008: A Framework for Addressing Urban Challenges in Africa*, UN-HABITAT, Nairobi, p 19.

63. Boko, M., et al, p 450.

64. Casmiri, Damian (2007) *Vulnerability of Dar es Salaam City to Impacts of Climate Change* at <pubs.iied.org/pdfs/G02388.pdf>

65. Boko, M., et al, pp 439, 444.

66. ICLEI Africa (2012). *Building Climate Resilience: A Handbook for Temeke Municipal Council, Dar es Salaam*, Joseffson, J., Stephen, V., and Fairhurst, L. (authors); ICLEI Africa (2012). *Building Climate Resilience: A Handbook for Port Louis Municipal Council, Mauritius*, Joseffson, J., Stephen, V., and Fairhurst, L. (authors).

67. Noel, S. (undated). "The economics of climate change in Tanzania. Water resources", Stockholm Environment Institute (SEI). SEI Africa Centre, Institute of Resource Assessment, University of Dar es Salaam, website (last accessed 28 November 2012): http://www.economics-of-cc-in-tanzania.org/images/Water_resources_final_.pdf.

68. Boko, M., et al.

69. Potts, D. (2012). "Whatever happened to Africa's rapid urbanisation?" Africa Research Institute, Counterpoints Series, February 2012.

70. Lwasa S., Kinuthia-Njenga, C. (2012). Reappraising urban planning and urban sustainability in East Africa, in Polyzos, S. (Serafeim) (ed.) InTech, Available from website: http://www.intechopen.com/books/urban-development/reappraising-urban-planning-and-urban-sustainability-in-east-africa

71. UN HABITAT (2009). *Global Human Settlements Report. Planning Sustainable Cities* (London: Earthscan); Jenkins, P., Smith, H, and Wang, Y. (2007). *Planning and Housing in the Rapidly Urbanizing World* (New York: Routledge).

72. Jenkins, P., Smith, H, and Wang, Y. (2007). *Planning and Housing in the Rapidly Urbanizing World* (New York: Routledge); Lwasa S., Kinuthia-Njenga, C. (2012). Reappraising urban planning and urban sustainability in East Africa, in Polyzos, S. (Serafeim) (ed.) InTech, Available from website: http://www.intechopen.com/books/urban-development/reappraising-urban-planning-and-urban-sustainability-in-east-africa p 7.

73. Lwasa S., Kinuthia-Njenga, C. (2012), p 8.

74. *Ibid,* p 16.

75. Economist Intelligence Unit (2013). *Country Report: Kenya*, March 2013, p 3.

76. Africa Confidential (2013) "Kenya: Rise of the professionals" 26 April 2013; Ochwangi, David (2013) "Kenya devolution: A critique" *The African Executive* <www.africanexecutive.com/modules/magazine/article_print.php?article=5853> accessed 25 September 2013.

77. Oxfam (2009). "Urban poverty and vulnerability in Kenya. Background analysis for the preparation of an Oxfam GB urban Programme focussed on Nairobi", Oxfam Great Britain Kenya Programme, September 2009, p 3.

78. Oxfam NUSPP (2011). Nairobi Urban Social Protection Programme (NUSPP), Mohanty, S. (Sumananjali) (author), Phelps, L. and Brady, C. (eds.), Oxfam, May 2011.

79. UN-HABITAT (2011). *Malawi: Blantyre Urban Profile*, UN-HABITAT Regional and Technical Cooperation Division, pp 8, 12, 15, 17-18.

80. *Ibid,* p 17.

81. UN-HABITAT (2008). *Ethiopia: Addis Ababa Urban Profile*, UN-HABITAT Regional and Technical Cooperation Division, pp 4-11.

82. Goodfellow, T (2010). "'The bastard child of nobody'? Anti-planning and the institutional crisis in Kampala", Crisis Research Centre, Crisis States Working Paper Series No 2, Working Paper 67 – Cities and Fragile States – February 2010, London School of Economics, Development Studies Institute, p 1.

83. Weinstein, Michael A (2013).

84. UNCHS (1998). *Privatization of Municipal Services in East Africa – A Governance Approach to Human Settlements Management*, United Nations Centre for Human Settlements (Habitat), Nairobi, pp8-13.

85. Wainaina, B. (2012). "The city of the future", Cityscapes, Issue 2, Winter 2012, African Centre for Cities (ACC), University of Cape Town, pp.83-87; Kihato, M. and Karuri-Sebina, G. (2012). "Urban Socio-Spatial Change and Sustainable Development: The Neo-City Phenomenon", Perspectives: *Political Commentary and Analysis from Africa - What Are Sustainable African Cities*, No. 3.12, pp. 34-40.

86. Dongus, S. (2000). "Vegetable production on open spaces – spatial changes from 1992 to 1999. Dar es Salaam: Urban Vegetable Promotion Project." Albert-Ludwigs-University of Freiburg; Jacobi, P., Drescher, A., & Amend, J. (2000). "Urban Agriculture - Justification and Planning Guidelines. Urban Vegetable Promotion Project." Retrieved May 17, 2012, from www.cityfarmer.org/uajustification.html; Hoogland, M. (2003). "City planning and urban agriculture in Dar es Salaam." RUAF. Retrieved March 6, 2012, from www.ruaf.org/book/export/html/2297; de Zeeuw, H., Dubbeling, M., & van Veenhuizen, R. (2010). Cities, poverty and food: Multi-stakeholder policy and planning in urban agriculture (p. 177). Warwikshire: Practical Action Publishing Ltd.

87. UN-HABITAT (2010). *The State of African Cities Report2010: Governance, Inequality and Urban Land Markets.* (Nairobi), p 156.

88. UN-HABITAT (2008). *Ethiopia: Addis Ababa Urban Profile*, UN-HABITAT Regional and Technical Cooperation Division, p 8.

89. UNICEF (2011/12). *A Look at Arusha City*, United Nations Fund for Children (UNICEF) Cities and Children. The Challenge of Urbanization in Tanzania.

90. Mafuta, C., Rannveig, K.F., Nellemann, C. (2011). "Green hills, blue cities. An ecosystems approach to water resources management for African cities", Li, F. (Fengting) (coordinating author) A Rapid Response Assessment, United Nations Environment Programme, GRID-Arendal, p 43.

91. Oxfam (2009), p 3.

92. *Ibid,* p 14.

93. UN-HABITAT (2010), p 141.

ENDNOTES

94. Mafuta, C., Rannveig, K.F., Nellemann, C. (2011), p 27.
95. Kartas, M., and Jütersonke, O. (2012). "Urban resilience in situations of chronic violence. Case study of Kigali", Rwanda, prepared for MIT's Centre for International Studies (CIS), p 6.
96. UNICEF (2011/12). *A Look at Arusha City*, United Nations Fund for Children (UNICEF) Cities and Children. The Challenge of Urbanization in Tanzania.
97. Mafuta, C., Rannveig, K.F., Nellemann, C. (2011), p 16.
98. Mungai, D.N., T. Thenya, A. Muthee, G. Muchemi, J.K. Mworia, G. Oduori and J. Kimani. (2011). "Environmental, social and economic effects of the fencing of the Aberdare Conservation Area", A Report for the Kenya Wildlife Service, Kenya Forest Service, Rhino Ark, Kenya Forests Working Group and UNEP, Nairobi.
99. WRMA (2010). *Preliminary Water Allocation Plan of the Nairobi Aquifer Suite: Long Term Water Resources Management Strategy*, Water Resources Management Authority (WRMA), Nairobi.
100. Mafuta, C., Rannveig, K.F., Nellemann, C. (2011), pp 27-28; Businge, C., Lemisa, M., and Lukwago, J. (2010). "Floods hit Kampala city suburbs", New Vision, May 9 2010, website (accessed in March 2011): http://allafrica.com/stories/201005100171.html.
101. Mafuta, C., Rannveig, K.F., Nellemann, C. (2011), p 43.
102. *Ibid,* p 46.
103. EPA. (2009). "Qualitative & Quantitative Assessment and Evaluation of Impacts of Hazardous Wastes in Addis Ababa." Environmental Protection Agency, Addis Ababa. In: Mafuta, C., Rannveig, K.F., Nellemann, C. (2011). "Green hills, blue cities. An ecosystems approach to water resources management for African cities", Li, F. (Fengting) (coordinating author) A Rapid Response Assessment, United Nations Environment Programme, GRID-Arendal, pp 51-54.
104. IRC (2011). "Sanitation and hygiene promotion for the urban poor. Recommendations from the East Africa Practitioners' Workshop on Pro-Poor Urban Sanitation and Hygiene", IRC International Water and Sanitation Centre, Kigali, Rwanda, March 2011.
105. HRAA (2008). "Hydropower resource assessment of Africa", Water for Agriculture and Energy in Africa. The Challenges of Climate Change, Ministerial Conference on Water for Agriculture and Energy in Africa: The Challenges of Climate change, Sirte, Libyan Arab Jamahiriya, 15-17 December 2008, pp 14, 19.
106. Noel, S. (undated). "The economics of climate change in Tanzania. Water resources", Stockholm Environment Institute (SEI). SEI Africa Centre, Institute of Resource Assessment, University of Dar es Salaam, website (last accessed 28 November 2012): http://www.economics-of-cc-in-tanzania.org/images/Water_resources_final_.pdf. pp 23-24.
107. Safari, B. (2010). "A review of energy in Rwanda", *Renewable and Sustainable Energy Reviews*, Vol. 14, No. 1, pp. 524-529.
108. UN-HABITAT (2006). *Nairobi Urban Sector Profile*, Regional Office for Africa and the Arab States, Rapid Urban Sector Profiling for Sustainability (RUSPS), Nairobi, p 11.
109. UN-HABITAT (2011). *Malawi: Lilongwe Urban Profile*, UN-HABITAT Regional and Technical Cooperation Division, p 28.
110. *Ibid,* p 29.
111. UN-HABITAT (2011). Malawi: Mzuzu Urban Profile, UN-HABITAT Regional and Technical Cooperation Division. Page 14.
112. UN-HABITAT (2011). *Mauritius: Port Louis Urban Profile*, UN-HABITAT Regional and Technical Cooperation Division, p 16.
113. UN-HABITAT (2012). *Mauritius: Black River Urban Profile*, UN-HABITAT Regional and Technical Cooperation Division, p 18.
114. Okot-Okumu, J. (2012). "Solid waste management in African cities – East Africa", Intech, website: http:/dx.doi.org/10.5772/50241, pp 3, 8.
115. *Ibid,* pp 4-8.
116. UN-HABITAT (2006). *Nairobi Urban Sector Profile*, Regional Office for Africa and the Arab States, Rapid Urban Sector Profiling for Sustainability (RUSPS), Nairobi, p 10.
117. Rodi, L., Scheinberg, A., Wilson, D.C. (2010). "Comparing solid waste management in the world's cities. *Key-note paper at ISWA World Congress 2010, Urban Development and Sustainability – a Major Challenge for Waste Management in the 21st Century*, Hamburg, Germany, 15-18 November 2010
118. World Bank (2007). *Project Appraisal Document: Kampala Institutional and Infrastructure Development Project*, World Bank, p 13; Website: https://wbcarbonfinance.org/Router.cfm?Page=CDCF&FID=9709&ItemID=9709&ft=Projects&ProjID=52268.
119. UN-HABITAT (2008). *Ethiopia: Dire Dawa Urban Profile*, UN-HABITAT Regional and Technical Cooperation Division, p 9.
120. UN-HABITAT (2011). *Mauritius: Port Louis Urban Profile*, UN-HABITAT Regional and Technical Cooperation Division, p 17; UN-HABITAT (2012). *Mauritius: Black River Urban Profile*, UN-HABITAT Regional and Technical Cooperation Division, p 18.
121. UN-HABITAT (2011). *Malawi: Lilongwe Urban Profile*, UN-HABITAT Regional and Technical Cooperation Division, p 30.
122. Okot-Okumu, J. (2012). "Solid waste management in African cities – East Africa", Intech, website: http:/dx.doi.org/10.5772/50241, p 12.
123. Nyaoro, C.D. (2010). "Mobility, poverty and the cities of East Africa", in Laipson, E. (Ellen) and Pandya, A. (Amit) (eds.) On the Move. Migration Challenges in the Indian Ocean Littoral, The Henry L. Stimson Center, website (last accessed 28 November 2012): www.stimson.org/rv., p 22.
124. UNISDR (2011). *Effective Measures to Build Resilience in Africa to Adapt to Climate Change*, Briefing Note 4, United Nations International Strategy for Disaster Risk Reduction (UNISDR), United Nations, Geneva. Site at www.unisdr/org/campaign.
125. Kartas, M., and Jütersonke, O. (2012). "Urban resilience in situations of chronic violence. Case study of Kigali", Rwanda, prepared for MIT's Centre for international Studies (CIS), p 17.
126. Muggah, R., Agevi, E., Maviti, J., Mbatha, P., and Odary, K. (2012). "Urban resilience in situations of chronic violence. Case study of Kigali", Rwanda, prepared for MIT's Centre for international Studies (CIS), for the Urban Resilience in Chronic Violence by Institution of International Relations and Research Triangle Africa.
127. Neuwirth, Robert (2011) *The Stealth of Nations: The Global rise of the Informal Economy* (Random House, New York); Fioramonti, Lorenzo (2013), *Gross Domestic Problem: The Politics behind the World's Most Powerful Number* (Zed Books, London), pp 12, 56; Hyden, Goran (2013) *African Politics in Comparative Perspective* (Cambridge University Press, Cambridgr) Second edition, pp 74-96.
128. Goodfellow, T., Titeca, K. (2012). "Presidential intervention and the changing 'politics of survival' in Kampala's informal economy", *Cities*, Vol. 29, No. 4, p 8.
129. Goodfellow, T., Titeca, K. (2012), No. 4, p 13.
130. Pieterse, E. (2011). "Recasting urban sustainability in the south", Development, 54, 3, 309-316. (RAUS)
131. Silberschmidt, M. (2001). "Disempowerment of men in rural and urban East Africa: implications for male identity and sexual behaviour", *World Development*, Vol. 29, No. 4, p 657.
132. Reuters (2012)."Uganda bans 38 NGOs for promoting homosexuality", *The Telegraph*, Wednesday 28 November 2012, see website: http://www.telegraph.co.uk/news/worldnews/africaandindianocean/uganda/9344487/Uganda-bans-38-NGOs-for-promoting-homosexuality.html.
133. Amenya, G.N. (2007). "The informal sector in Kenya", University of Nairobi, Department of Agricultural Engineering, website (last accessed 28 November 2012): http://www.nayd.org/PDF/The%20informal%20sector%20in%20Kenya.pdf.
134. UN-HABITAT (2008). *Ethiopia: Addis Ababa Urban Profile*, UN-HABITAT Regional and Technical Cooperation Division, p 4.
135. UN-HABITAT (2006). *Nairobi Urban Sector Profile*, Regional Office for Africa and the Arab States, Rapid Urban Sector Profiling for Sustainability (RUSPS), Nairobi, p 11.
136. UN (2008). *Mainstreaming Gender into Trade and Development Strategies: The Case of East*

ENDNOTES

Africa, Trade Negotiations and Africa Series No. 5, United Nations, New York and Geneva, pp 7-8, 17.

137. UN-HABITAT (2011). *State of the World's Cities 2010/11: Bridging the Urban Divide*, United Nations Human Settlements Programme, UN HABITAT, London, Sterling, VA, p 43.
138. UN (2008). *Mainstreaming Gender into Trade and Development Strategies: The Case of East Africa*, Trade Negotiations and Africa Series No. 5, United Nations, New York and Geneva, p 25.
139. APP (2012). *Africa Progress Report. Jobs, Justice and Equity. Seizing Opportunities in Times of Global Change*, Africa Progress Panel (APP), p 10.
140. UN-HABITAT (2011). *Malawi: Lilongwe Urban Profile*, UN-HABITAT Regional and Technical Cooperation Division, p 9.
141. UN-HABITAT (2009). *National Urban Profile Tanzania,* UN-HABITAT Regional and Technical Cooperation Division.
142. UN-HABITAT IGY (2012). *ICT, Urban Governance and Youth*, Report 4: Global Youth-Led Development Report Series, UN-HABITAT, Nairobi, p 20.
143. UN-HABITAT IGY (2012), p 18.
144. Information supplied by the uReport website: http://ureport.ug/.
145. UN-HABITAT IGY (2012), p 36.
146. *Ibid,* 33-34.
147. *Ibid,* p 36.
148. *Ibid,* p 41.
149. ACSS (2012). *Preventing Youth Radicalisation in East Africa*, African Centre for Strategic Studies (ACSS), Program Report: Kigali, Rwanda, 22-27 January 2012.
150. Kinvunvu, S. (2009). "Strengthening civil society in the EAC: sharing experiences with other RECs", The 3rd Annual East African Civil Society Organizations' Forum, East African Civil Society Organizations Forum (EACSOF), Corridor Springs Hotel, Arusha, Tanzania March 20-21, 2009.
151. ACSS (2012)., p 22-27 January 2012, p 9.
152. *Ibid,* pp 11-12.
153. *Ibid*
154. BEPS (2003). *Urbanization, War and Africa's Youth at Risk. Towards Understanding and Addressing Future Challenges*, Sommers, M. (author), Basic Education and Policy Support Activity, US Agency for International Development, p 8; Sommers, M. (2010). "Urban youth in Africa", *Environment & Urbanization*, Vol. 22, No. 2, p 323.
155. Sommers, M. (2010). "Urban youth in Africa", *Environment & Urbanization*, Vol. 22, No. 2, p 325.
156. BEPS (2003). *Urbanization, War and Africa's Youth at Risk. Towards Understanding and Addressing Future Challenges*, Sommers, M. (author), Basic Education and Policy Support Activity, US Agency for International Development, p 9.
157. Sommers, M. (2010). p 322.
158. Mwenda, N. (2012). *East African Hip-Hop: Youth Culture and Globalization*, University of Illinois Press.
159. UN-HABITAT (2010). *The State of African Cities Report2010: Governance, Inequality and Urban Land Markets.* (Nairobi), pp 4, 91-92.
160. Nile Basin Initiative (2012). *The State of the River Nile Basin 2012.* (Entebbe, Nile Basin Initiative) p 12.
161. *Ibid,* p 226.
162. International Peace Institute (2010). "A political storm over the Nile", *IPI Issue Brief,* December 2010, p 1
163. Subramanian, Ashok, Bridget Brown and Aaron Wolf (2012). *Reaching across the Waters: Facing the Risks of Cooperation in International Waters.* (Washington DC, World Bank) pp 11-14.
164. International Peace Institute (2010). "A political storm over the Nile", *IPI Issue Brief,* December 2010, p 4.
165. *Ibid*
166. Amos, Machel (2013). "Juba rebuffs Cairo on Nile waters agreements", *Africa Review*, 20 March 2013.
167. Carson, Ben (2011). "The Nile – Whose water?" *Think Africa Press*, 28 January 2011; "Burundi joins Nile Cooperative pact", *The Guardian*, 4 March 2011.
168. Dereje Zeleke Mekonnen (2010). "The Nile Basin Cooperative Framework Agreement negotiations and the adoption of a 'water security' paradigm: Flight into obscurity or a logical cul-de sac? *The European Journal of International Law,* vol 21, no 2, pp 421-440; Economist Intelligence Unit (2013) "Morsi sparks row with Ethiopia over dam project", 6 June 2013, "Nile water co-operation offers energy benefits", 26 June 2013.
169. Stuteville, Sarah (2008). "Troubled waters: The coming calamity on Lake Victoria", *San Francisco Chronicle*, 24 June 2008; Pearce, Fred (2006). "Uganda pulls the plug on Lake Victoria", *New Scientist*, no 2538, 9 February 2006.
170. Lake Victoria Basin Commission (2013). "Overview", at www.lvbcom.org, accessed 20 February 2013.
171. Society for International Development (2012). *The State of East Africa 2012: Deepening Integration, Intensifying Challenges*. (Nairobi, SID), p 37.
172. EAC Lake Victoria Basin Commission (2011). *Vulnerability Assessment to Climate Change in Lake Victoria Basin.* (Nairobi, LVBC).
173. Society for International Development (2012). *The State of East Africa 2012: Deepening Integration, Intensifying Challenges*. (Nairobi, SID), pp 20,25.
174. *Ibid,* p 20.
175. *Ibid,* pp 21,23,26.
176. Christian Aid (2011). *East Africa Food Crisis*, Humanitarian Briefing Paper, September 2011.
177. Christian Aid (2011).
178. FAO GFPM (2011). *Global Food Price Monitor (GFPM)*, Food and Agricultural Organization (FAO), 8 November 2011, p 4 website: www.fao.org/giews.
179. RUAF (2010). *The Growth of Cities in East-Africa: Consequences for Food Supply*, RUAF Foundation for the World Bank, 20 December 2010; US Department of Agriculture (2010). *Food Security Assessment 2010-2020.* (Washington DC).
180. GGCIA (2012), pp 86-88.
181. GGCIA (2012), p 78.
182. RUAF (2010).
183. Oxfam (2013) *No Accident: Resilience and the Inequality of Risk*. Oxfam Briefing Paper no 172, 21 May 2013; Chambers, Robert (1997). *Whose Reality Counts: Putting the Last First.* (Intermediate Technology Publications, London), pp 46-47.

PART FIVE

THE STATE OF **CENTRAL AFRICAN CITIES**

The Boulevard du 30 Juin ("Boulevard of June 30th"), is Kinshasa, DRC's main transport artery. The street was named to commemorate Congo's independence from Belgium on June 30, 1960. **©Antoine Moens de Hase.**
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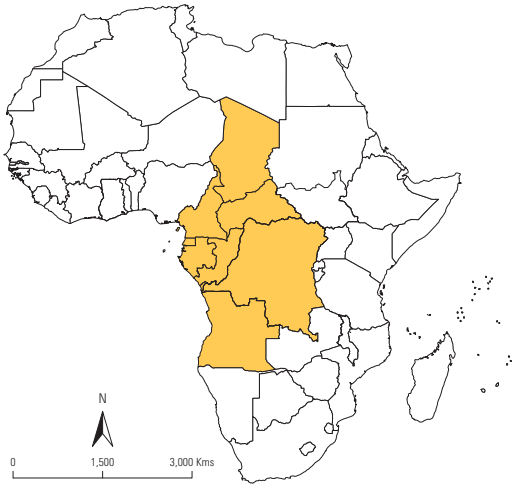
BCDC

5.1 Population and Urbanization

Luanda, Angola is the second largest city in the sub-region with over 5 million inhabitants. **©Lars Rohwer.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

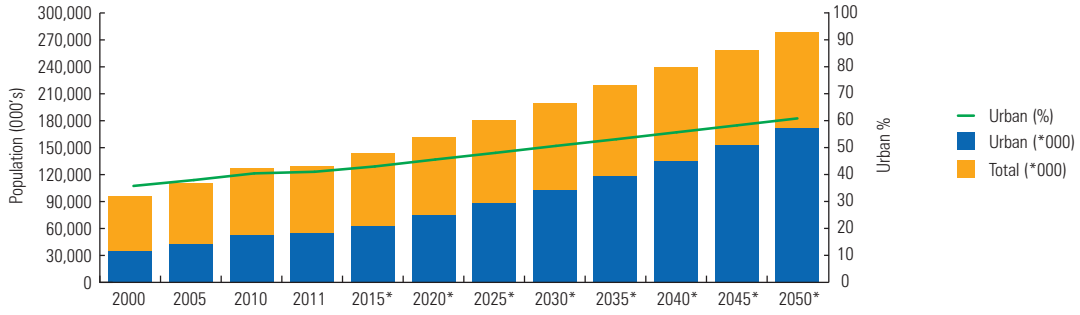
MAP 5.1: **THE CENTRAL AFRICAN SUB-REGION**



For the purposes of this report, the Central African sub-region includes nine countries: Angola, Cameroon, the Central African Republic (CAR), Chad, Congo (Republic of), Democratic Republic of Congo (DRC), Equatorial Guinea, Gabon and São Tomé e Príncipe. The sub-region's combined 2011 population estimate of 130 million comprised 76.1 million rural and 53.9 million urban dwellers (Figure 5.1).

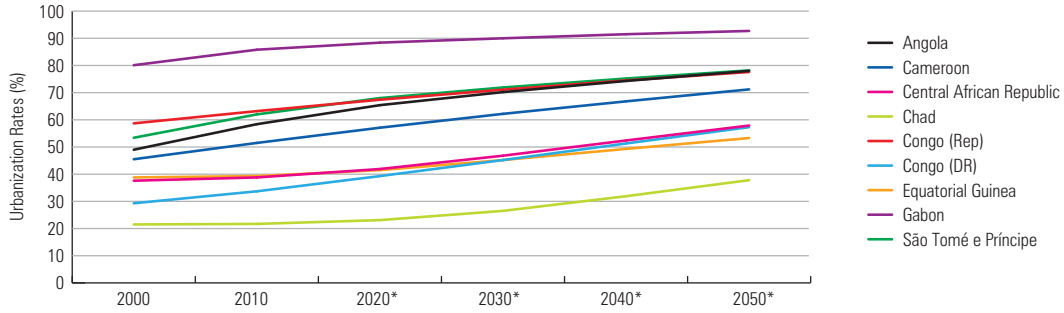
Although Central Africa is rapidly urbanizing, it is not expected to reach an urban majority until around 2030. Currently, five of the nine countries have urban majorities: Angola (59.2 per cent), Cameroon (52.1 per cent), Congo (63.7 per cent), Gabon (86.2 per cent) and São Tomé e Príncipe (62.7 per cent). CAR (29.1 per cent urban) and Congo DR (34.3 per cent) are expected to reach urban majorities just before 2040; and Equatorial Guinea, with 39.5 per cent urban in 2011, around 2045 (Figure 5.1).

FIGURE 5.1: **CENTRAL AFRICAN POPULATION DATA (2000-2050*)**



* *Projection*
Source: World Urbanization Prospects: The 2011 revision, UNDESA (2012).

FIGURE 5.2: **NATIONAL URBANIZATION LEVELS 2000-2050*, AS A PERCENTAGE OF THE TOTAL POPULATION**



* *Projection*
Source: World Urbanization Prospects: The 2011 revision, UNDESA (2012).

TABLE 5.1: **AVERAGE ANNUAL CHANGES IN URBANIZATION LEVELS, 2000-2050, WITH DECADE INTERVALS**

Region/Country	2000-10	2010-20*	2020-30*	2030-40*	2040-50*
Central African sub-region	1.25	1.19	1.05	0.97	0.87
Angola	1.76	1.14	0.71	0.56	0.48
Cameroon	1.24	1.05	0.85	0.73	0.63
Central African Republic	0.32	0.75	1.12	1.12	1.00
Chad	0.10	0.61	1.38	1.83	1.71
Congo (Rep)	0.75	0.64	1.04	0.47	0.41
Congo (DR)	1.41	1.54	1.40	1.26	1.11
Equatorial Guinea	0.14	0.54	0.87	0.86	0.79
Gabon	0.69	0.29	0.19	0.16	0.14
São Tomé e Príncipe	1.49	1.43	0.56	0.46	0.40

* *Projection*
Source: World Urbanization Prospects: The 2011 revision, UNDESA (2012).

Urbanization Rates (2000-2050*)

Only Chad (21.8 per cent urban in 2011) will still be well below the urban tipping point in 2050 with an anticipated 37.8 per cent urban population. This is despite accelerating annual urban growth rates over the coming decades, from 0.1 per cent annually during the 2010-20 decade to a peak of 1.83 on average between 2030 and 2040 (Figure 5.2). After 2040, the average annual growth rates for Chad and CAR are expected to enter a long-term decelerating trend in line with the other nations of the sub-region. Angola, Cameroon, Gabon and São Tomé e Príncipe are through their urban transition with now clearly decelerating urbanization rates (Table 5.1).

The Larger Central African Cities

Kinshasa continues to dominate Central Africa as the sub-region's largest and fastest growing urban system (in absolute terms), needing to provide annually for around 390,000 additional citizens (Table 5.2). Kinshasa, with an estimated present day population of 9 million, is projected to become Africa's third megacity before 2015 and home to 14.5 million inhabitants in 2025 (Table 5.2).

Luanda (Angola) is the second largest city in the sub-region. Colonial Portuguese planners designed Luanda for about half a million people, but the urban agglomeration now holds more than five million, almost one-quarter of the national population (Table 5.2). During Angola's 27-year civil war many fled to the relative safety of the capital, which was largely spared from conflict. With peace in 2002 came economic opportunity, driven by oil wealth, which further drew job seekers from the impoverished countryside. The average annual growth rate of Luanda will be 5.77 per cent during the current decade. Just to keep up with this growth, Luanda will have to provide for an additional 276,000 new inhabitants annually over the next seven years. With a projected 2025 population of 8.9 million, Luanda is a megacity in waiting.

Although still comparatively small, with just over 1 million inhabitants in 2011, Huambo (Angola) is Central Africa's most rapidly growing large city in relative terms, increasing at a predicted average annual rate of just over 6 per cent between 2010 and 2020 - an average of 62,000 people annually (Table 5.2). Douala (Cameroon) is the third largest city in Central Africa. Although not the capital, Douala is the country's largest urban agglomeration and is home to 12.2 per cent of the national population. The city also holds 23.5 per cent of Cameroon's urban dwellers and it is projected that by 2025 Douala will be home to almost 4 million (Table 5.2).

▲ The combined conurbation of Kinshasa-Brazzaville has over 10 million inhabitants.
Source: NASA

TABLE 5.2: **POPULATION DYNAMICS FOR CENTRAL AFRICAN CITIES WITH OVER 750,000 INHABITANTS**

City	Country	2011 Population (000)	Ave. annual growth rate 2010-20* (%)	Share of urban population (%)	Share of total population (%)	Ave. annual population increase 2010-20*	2025 Population (*000)
Kinshasa	Congo (DR)	8,,798	4.64	37.9	13.0	390,000	14,535
Luanda	Angola	5,068	5.77	43.6	25.8	276,000	8,924
Douala	Cameroon	2,449	4.51	23.5	12.2	106,000	3,983
Yaoundé	Cameroon	2,432	4.74	23.3	12.1	110,000	3,997
Brazzaville	Congo (Rep)	1,611	3.32	61.1	38.9	52,000	2,364
Lubumbashi	Congo (DR)	1,556	5.09	6.7	2.3	76,000	2,689
Mbuji-Mayi	Congo (DR)	1,504	5.16	6.5	2.2	74,000	2,606
Huambo	Angola	1,098	6.04	9.5	5.6	62,000	1,997
Kananga	Congo (DR)	888	5.28	3.8	1.3	45,000	1,559
Pointe-Noire	Congo (Rep)	834	3.39	31.7	20.1	27,000	1,240
Kisangani	Congo (DR)	820	5.23	3.5	1.2	41,000	1,439

* *Projection*
Source: World Urbanization Prospects: The 2011 revision, UNDESA (2012).

5.2 Global Change and Implications for Urban Development

Loango National Park, Western Gabon. Previously neglected, in 2000 the Gabonese government began developing the country's tourism sector. **©Kurt Dundy.** Licensed under the Creative Commons Attribution 3.0 License.

There is no doubt that Central African national policies have strongly shaped urban economic progress. In most countries in the sub-region, political power and also investment in education, healthcare, industry, roads and other infrastructure are concentrated in the larger cities, especially the capitals. This creates unbalanced national development processes, as well as in the sub-region as a whole.

Capital cities such as Brazzaville, Kinshasa, Libreville, Luanda, N'Djamena, Malabo and Yaoundé function as hubs for complex international financial transactions and management of multinational organizations. Economic and financial globalization has affected income distribution, employment and the share of national wealth across the sub-region. The growth of corporate businesses, mainly in capital cities, as well as capital mobility and significant investments by multinationals, have created classes of new rich and new poor in many of the sub-region's cities. As populations grow and unemployment increases in Central African cities, so too does the trend of low-level wage and low-skilled jobs growth. These jobs are usually filled by graduates who cannot find work in their area of expertise or training.

Many of the sub-region's larger cities are attracting foreign capital investments that play a vital role in the creation of wealth within these cities and countries. Although economic performance is making these cities major players in sub-regional and continental economies, it is also creating new administrative and management challenges for national and local governments. Mass investments in infrastructure, in the service sector and in the tourism industry, have helped to lower the rate of unemployment in some of the sub-region's cities. This is notably the case for the capitals of oil-producing nations such as Luanda (Angola), Libreville (Gabon), Malabo (Equatorial Guinea) and N'Djamena (Chad); as well as mining cities such as Lubumbashi and Kolwezi in Congo (DR). As the sub-region's cities become key players in the continental economy, accommodating important international business and financial structures, they also start to play pivotal roles in the international financial market.

The economic prospects and performance of a city depend on the level of integration into the sub-regional, continental and world economies. Kinshasa, Libreville, Luanda, Malabo and N'Djamena have slowly become important hubs for transnational and multinational corporations. But global activity has weakened during 2011 with business and investor confidence falling sharply. Against this backdrop, global growth eased to about 3.9 per cent in 2011 from 5.3 per cent in 2010.[1]

The economy of Chad plunged from 14.3 per cent in 2010 to 2.8 in 2011, mainly because of a drop in primary sector activity. Compared with other countries in the sub-region, Chad continues to lag in terms of social development. With a total population of 11.5 million, the country is ranked 163 of 169 countries on the 2010 United Nations Human Development Index.[2] In CAR, real economic growth steadied around 3 per cent in 2011 thanks to increased agricultural

production and commodity exports (timber, diamonds and cash crops). The country's economy slowed during early 2011, however, because of concerns about the country's stability after the hotly contested and somewhat controversial elections.

During 2011, Gabon's gross domestic product (GDP) grew by an estimated 5.0 per cent, from 6.6 per cent in 2010. The economic performance of Gabon, and especially of its cities, depends largely on oil prices, since these constitute 75 per cent of export revenue and up to 60 per cent of total government earnings. Libreville (Gabon), Malabo (Equatorial Guinea), Bata (Equatorial Guinea) and Franceville (Gabon), co-hosted the 2012 Africa Cup of Nations soccer tournament, boosting employment through extra public investment in the construction industry. This event has had positive impacts on employment and consumption since funds invested in its organization, as well as flows of football fans and tourists, stimulated domestic demand. Economic activity in Gabon and Equatorial Guinea was further enhanced by heavy investments in public infrastructure, especially roads, hotels, telecommunication networks and stadiums.[3]

Despite economic growth in many of the sub-region's countries over the last few years, most urban economies struggle. This is because most Central African countries' exports depend heavily on primary extractions, especially copper, timber and oil. Since the deepening of the global financial crisis, exports of copper have slowed, as China and India (which are among the main buyers) have reduced their imports. Furthermore, the monitoring of the exploitation and export of timbers from Central Africa, coupled with the pressure of non-governmental organizations, such as Greenpeace, to regulate that market, have slowed export of forestry goods.

Impacts of Economic Trends and Global Trade

As the global economic crisis deepened, the impacts on the lives of urban dwellers in Central Africa increased. However, Africa's still limited economic and financial integration into the global economy has largely spared the countries (other than the Republic of South Africa) from the significantly worse impacts such as those experienced in, for instance, Southern Europe.[5]

Yet, Africa remains underdeveloped because of its marginal position in the world economy.[6] The dynamics and rate of growth for the year 2011 varied across Central African countries, where trade is dominated by export of raw oil, gold, copper, cobalt, diamond, timber, cocoa, coffee and cotton. The Congo (DR) benefited from price rises for minerals and other commodities, neighbouring Republic of the Congo and Gabon in particular benefited from rising oil prices. Despite being one of Africa's larger oil exporters, the Angolan economy neither benefitted from these higher prices nor did the economy expand as in the mid-2000s, when the country saw rapid economic growth and increasing fiscal wealth. Rather, the benefits from oil revenue fuelled corruption and political cronyism among the country's elites. Nowadays, many politicians in Angola are among Africa's richest people who keep their wealth in banks outside Africa. Whereas Central African countries are among the main oil producing countries in the continent, reduced oil exports have had negative consequences for growth and people's welfare, particularly in cities.

The formal economies of the Central Africa Republic and Congo (DR) are in a state of collapse with informal and traditional subsistence activities on the increase. Economic activity in many capitals predominantly lies with the tertiary sector.[7] Nevertheless, there is no doubt that these urban economies, especially the capitals which serve as these nations' main portals of major investments, will continue to grow in the global economic system.

Central African urban areas account for around one-third of the total population (Figures 5.1 and 5.2), with cities typically producing more than 50 per cent of national GDP. Nonetheless, central and local governments are still unable to manage their urban economies or the resources adequately which is reflected by high shares of urban unemployed. Urban poverty is rising sharply numerically and in intensity.

On the positive side, the internationalization of African economies, combined with increasing use of new technologies, especially information and communications technology, have led to rising foreign direct investment (FDI) in many countries in Central Africa (see Table 5.3). Mass communication

TABLE 5.3: **FOREIGN DIRECT INVESTMENT (IN USD MILLIONS) IN CENTRAL AFRICA, 2011**

Country	2007	2008	2009	2010	2011
Angola	893,342	1,678,971	2,205,298	-	3,023,770
Cameroon	191,016	-	668,329	-	360,000
Chad	56,737	117,119	42,250	72,035	1,854,975
Central African Republic	1,808,000	1,726,800	663,800	2,939,300	109,175
Congo (DR)	2,638,405	2,483,223	2,083,496	2,815,957	3,700,000
Congo	-	233,583	461,808	781,366	2,930,916
Equatorial Guinea	269,324	209,019	32,826	170,389	737,115
Gabon	36,028	79,143	15,500	24,644	728,000
São Tomé e Príncipe	1,242,731	-	1,636,219	695,026	32,152

Source: World Bank. World Development Indicators, 2011 and 2012.

technologies have connected many urban dwellers in all major Central African cities, linking the sub-region to the world and, by extension, facilitating business and financial transactions. In Angola (particularly Luanda), FDI attracted by the growth in the communications industry has led to new jobs and sources of income for the government and urban dwellers.

Central Africa has few democracies and, in some instances, dictatorships lasting over 15 years. The lack of democracy has allowed transnational corporations and multinational companies to thrive under weak legal frameworks while, in some instances, administrative decision-making is severely affected by corruption.

Whereas globalization and new technologies have significantly changed the way cities and countries in Central Africa trade with the outside world, trade between countries and cities in the sub-region remains low. This is perhaps unsurprising since Central African port, road and railway infrastructures generally lack the capacity to absorb and process the increasing trade potentials. Waiting periods in ports can take up to as much as 80 per cent of the total delivery period. Railway systems are severely degraded, hampering inter-city trade as well as the flow of goods and people.[8] Asphalt roads constitute less than 20 per cent of the sub-region's 150,000 km network, where 80 per cent of people and goods are transported overland.[9] This is further exacerbated by the lack of cold chain storage along routes, incurring losses which fall most heavily upon (especially informal) agricultural traders.

Between 2000 and 2010, the total value of intraregional imports and exports each amounted to about USD 30 billion. The annual growth rate of intra-African exports was 15.9 per cent, compared to intra-African imports which grew by 16.4 per cent. The intraregional imports represented 11.6 per cent of total African imports, while intraregional exports averaged about 9.5 per cent of the total.[10]

While many Western economies were (or remain) in recession, China was at the centre of Africa's trade and investment reconfiguration. Trade during 2011 between China and Africa in general went up 28 per cent from 2010, reaching USD 160 billion. This trade accounted for 18 per cent in 2011 up from 10 per cent in 2010. In addition to exports, 2011 saw African imports from China increase by 23.7 per cent to USD 73 billion. China was mainly exporting equipment, machinery, vehicles and its abundant work force to Africa.[11]

To withstand the shocks of world commodity prices, countries in Central Africa should diversify their economies and become less dependent on mining and forestry. But disarticulation of imports and export of these commodities could have serious consequences on their economies. Furthermore, systems for tax collection need to be improved. For example, despite its vast mineral reserves of copper, cobalt, gold, diamond, oil and timber the Congo (DR) remains poor because it is still unable to collect taxes effectively from, among others, hundreds of multinational and international corporations that are exploiting and exporting its mineral wealth.

Globalization and Urban Segregation

The assessment for Africa 2011 as a whole is viewed as generally promising.[12] However, despite economic growth in many countries in the sub-region, most have been unable to meet several of the key Millennium Development Goals and the majority of urban dwellers still live below the poverty line. In many Central African cities, living conditions have undergone dramatic changes, with unemployment and poverty forcing people to move among and within cities in search of better living conditions. In the larger cities especially hunger, low incomes, inequality, social exclusion, lack of adequate shelter and poor land distribution remain unresolved problematic matters. Rural poverty, civil war, political instability, unemployment and the lack of livelihood opportunities have strengthened rural-urban migrations throughout the sub-region.

People are segregated by the political and economic systems within the cities, leading to a lack of social cohesion. Demographic clustering of different socioeconomic strata in Central African cities is highly imbalanced and has denied many urban dwellers and poor communities the opportunity to thrive. Urban income and consumption inequality and unemployment have led many low-income and poor households to move to the informal peripheries as they cannot afford to live in the planned parts of cities. In these remote peripheries, they are mostly isolated from the city's economic resources, opportunities and social infrastructures, as well as from participating in political life. Their wealthier urban dwellers who reside in planned urban areas, however, enjoy all these facilities and life chance-enhancing opportunities. In Libreville, Luanda, Malabo and N'Djamena, for example, the accommodation needs of highly paid oil workers have escalated residential costs, pushing the urban poor from the inner city to the peripheries. In all cities in the sub-region, spatial segregation has created and re-enforced inequality; has negatively altered life chances; and has hampered social mobility to the extent that cities have become fragmented and dysfunctional.[13]

There is arguably a strong relation between the extent to which states have developed their social security and welfare systems and the level of social polarization, socio-spatial segregation and social exclusion in urban areas.[14] The extent of deterioration in living standards among urban dwellers in Angola, Cameroon, Chad, Central African Republic, Congo (DR) and São Tomé e Príncipe is currently an acute problem. Social and economic infrastructures are inadequate and many people live in appalling conditions. Across the sub-region, especially in Bangui, Kinshasa, Luanda, Malabo, N'Djamena and Yaoundé, lack of access to services (see Sections 5.4 and 5.6) and participation in political life have remained highly problematic. As a coping strategy, people regularly move between and within cities, especially low-income and poor families.

Although economic expansion in many cities in the sub-region has created new jobs and livelihood opportunities, the lives of the urban majority, especially low-income and poor

BOX 5.1: **POLITICAL CONFLICTS IN THE CENTRAL AFRICAN REPUBLIC AND THE DEMOCRATIC REPUBLIC OF CONGO**

▲ Soldiers of the UN Stabilization Mission in the DRC (MONUSCO) on Goma Hill, Eastern DRC. **©Guy Oliver/IRIN**

CAR was run by a democratically elected president between 1993 and 2003. However, those years were marked by army mutinies (1996 and 1997) over low salaries. This dissatisfaction weakened the incumbent political system, leading to the destabilization of the country. President Ange-Félix Patassé was overthrown in March 2003 by his former chief of staff, General François Bozizé, who subsequently became president with Chadian support.

In 2004, a new rebellion of the Union of Democratic Forces for Unity led by Michel Djotodia ignited in the north-east of the country. Between 2004 and 2007, several rebel groups fought CAR army, leading to the deaths of thousands of civilians and displacing tens of thousands more, despite a peace agreement on 13 April 2007 in Bairo between government and rebel forces. In 2010, rebel groups accused Bozizé of failing to respect the terms of the peace agreement and resumed fighting. Despite a new peace agreement signed in January 2012 in Libreville, Bozizé was toppled by the coalition of rebels, called *Séléka,* led by Djotodia, the country's current president.

DRC (Congo DR - formerly Zaire) in 1996 was invaded by Rwandan and Ugandan troops – which spearheaded a Congolese rebel attack that overthrew President Mobutu Sese Seko. The then rebel leader, Laurent-Désiré Kabila, became the country's president.

In August 1998, Kabila asked his Rwandan and Ugandan allies to withdraw their troops. Dissatisfied with that decision, they retreated to Goma, an eastern Congolese city bordering Rwanda, and started a new rebellion called the *Rassemblement Congolais pour la Democratie (RCD),* which was mainly led by Tutsi. Following that, other rebellions emerged and alongside with the Rwandan and Ugandan armies, they fought the Congolese army. The conflict drew in the Rwandan, Ugandan and Burundian armies on one side and on the other the pro-Kabila Angolan, Chadian, Congolese, Zimbabwean, Sudanese and Namibian armies. A number of Congolese and foreign armed groups and militias were also involved in the conflict. In 2000, a United Nations peace keeping mission was sent to the country.

Despite a peace agreement in 2003, war continued unabated in eastern and northern Congo (DR). In 2003, a former Tutsi rebel from RCD, Laurent Nkunda, defected from the Congolese army and created the National Congress for the Defence of the People and began a new rebellion against the government. After killing civilians and illegally exploiting and exporting Congolese minerals, Nkunda and his rebels signed a peace agreement with the government in 2009. In 2012, the Tutsi former rebel, Bosco Ntaganda, started a new rebellion called Movement of 23 March 2009 (M23), claiming violations of the 2009 agreement by the Congolese government led by Joseph Kabila, son of assassinated Laurent-Désiré Kabila. The Congolese government and the United Nations accused the Rwandan government of backing M23, which Rwanda still denies. M23 captured Goma in December 2012.

These civil wars are complex sub-regional conflicts that brought more suffering to the majority of people in the Congo. According to numerous United Nations reports, rebel movements are mainly interested in the looting of copper, cobalt, diamonds, gold, silver and petroleum.

In February 2013, the United Nations and the African Union successfully secured an agreement to end the M23 rebellion and bring peace to the country. The agreement was signed in Addis Ababa, the Ethiopian capital and headquarters of the African Union, by 11 African countries, including Angola, CAR, the DRC, the Republic of Congo, Rwanda and Uganda.

Sources: United Nations (2001); United Nations (2002); UN Security Council (2003); Podur, J. (2012).[17]

households, has not improved significantly. This is due to skewed wealth distribution. Only 47 per cent of the urban population in Congo (DR) have access to safe drinking water and less than 20 per cent to adequate sanitation facilities.[15] In Luanda, even when it is available, clean water is not always affordable. Most urban poor buy theirs from trucks daily, spending three to five times more on water than average middle-income people with piped supply in the same city.

In addition to the inadequate supply of electricity and the lack of clean and drinking water, most urban dwellers in the sub-region lack improved sanitation. Open defecation still occurs in Luanda's peripheries and slums, for example. Across towns and cities in the sub-region, septic tanks, home-made latrines and flooded areas continue to facilitate water contamination as well as the incidence of waterborne and water-related diseases such as cholera, typhoid and malaria.

City authorities, overwhelmed by the speed and numbers of urban population growth, have tacitly let poor and low-income people settle in the least-desirable urban areas. Consequently, urban poverty has become spatially determined and often segregated from the planned city. Although some quarters in the capital cities in the sub-region were built during the colonial period or immediately after independence, the formal residential areas are mainly occupied by wealthy urban dwellers, especially the political elite and expatriates, while the poor urban majorities live in unplanned informal settlements and urban slums. Currently, land and housing affordability is re-enforcing urban spatial segregation by income group.

The Global Economy and the Urban Poor

The flow of capital and foreign investments in many cities in the sub-region is becoming increasingly important in the planning and revitalization of capitals in general and of mining and oil producing cities in particular. In 2009, Angola received USD 2.2 billion in FDI while during 2011 Congo (DR) received USD 3.7 billion and the Republic of Congo 2.9 billion (see Table 5.3). Central Africa has been facing the phenomenon of currency internationalization since the mid-2000s that has allowed many countries in the sub-region to increase their trade and receive more investment from China and countries in the Middle East. It is important to notice that Central African countries' continuous demand for public and private infrastructure, as well as China's particular approach to financing projects in Africa, have allowed the creation of new sources of funding for African governments and businesses, and new markets for Chinese financiers and exporters.

This type of cooperation between China and countries in the sub-region also gives opportunities to Chinese state companies to export their goods and provide employment for Chinese workers sent to Africa to implement various projects funded by the Chinese. However, Chinese investments in many cities in the sub-region did not always produce the expected results, as billions of US Dollars failed to boost the economies of many cities in the sub-region or to help improve the living conditions of the majority of urban dwellers in Central Africa.

As shown in Table 5.4, a substantial number of people in Central Africa continue to live on less than USD 1.25 purchasing power parity (PPP) per day. The levels of access to education and health services for the majority of the population are very low. The Human Development Index of the sub-region's countries, with the exception of Gabon and the Republic of Congo, ranks among the worst in the world. Especially poor urban dwellers suffer from multiple deprivations.

Statistics on African growth[16] reveal that although most economies in the sub-region have done well recently, this has not translated into improved wellbeing of the population majority. Poor economic policies, lack of sub-regional economic integration, corruption, dictatorships and armed conflict in some countries across the sub-region have prevented the improvement of living conditions.

TABLE 5.4: **SELECTED DEVELOPMENT INDICATORS FOR CENTRAL AFRICAN COUNTRIES**

Countries	% of Population living below USD 1.25 PPP per day	% of Combined Gross Enrolment in Education (both sexes)	% of GDP Expenditure on Public Health	Human Development Index
Angola	54.3	57.8	2.0	0.486
Cameroon	9.6	60.4	1.3	0.482
Central Africa Republic	62.8	39.6	1.4	0.343
Chad	---	45.6	2.7	0.328
Congo	59.1	50.1	1.7	0.630
Congo (DR)	59.2	52.1	1.2	0.286
Equatorial Guinea	---	55.3	1.7	0.537
Gabon	4.8	74.1	3.0	0.674
São Tomé e Príncipe	----	70.9	5.3	0.509

Source: UNDP (2011). Human Development Report: Sustainability and Equity. A Better Future for All. New York.

5.3
Social and Environmental Vulnerabilities

▲
A *candongueiro* (Luanda taxi) after heavy rain falls in Luanda, Angola. **Source: Paulo César Santos/Public Domain**

Historically, Africa has always faced an uneven climate with extreme and severe weather events, floods, heatwaves and droughts. However, extreme weather events have recently become more frequent and Central Africa is expected to become more vulnerable to climate change in future.[18] It is becoming clear that Central African cities are affected more rapidly by the impacts of increasing climate variability than first thought.

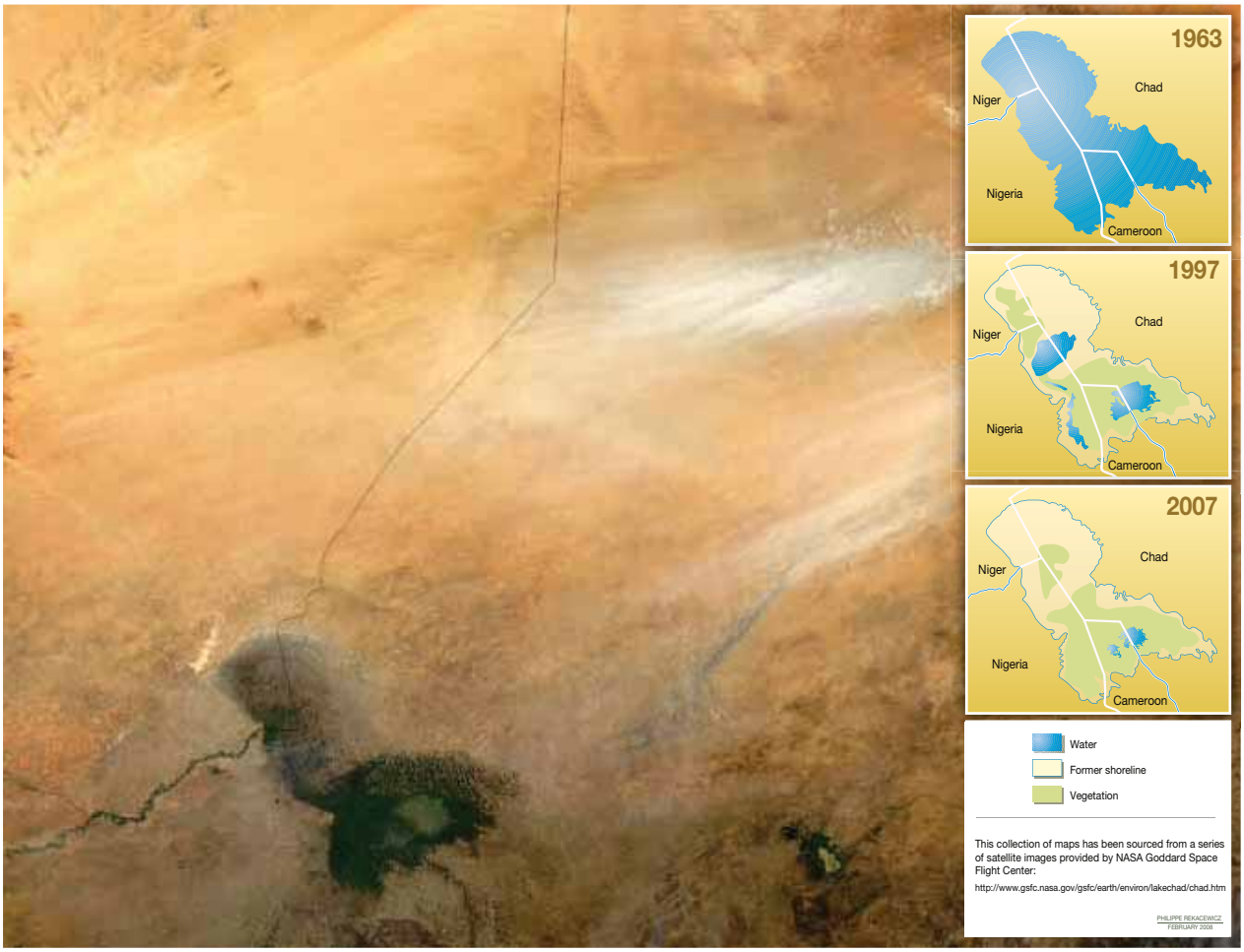
Vegetation and Environment in Central Africa

The sub-region's capital cities are either on the Atlantic Ocean coast or on the banks of major rivers. Most were already important urban centres prior to colonization, with local populations reliant on rivers and the sea for transport and communication with other cities and countries.

A large part of the Republic of the Congo and Gabon is covered by forest while in Congo (DR) tropical and rainforest cover more than 100 million hectares; nearly half of the country. In Angola, 30 per cent of the national territory is forested, as is the south of Cameroon and CAR.

Countries and cities in the sub-region are facing rapid degradation of their ecosystems. Nowadays, roughly 65 per cent of Africa's agricultural land, 31 per cent of its pasture lands, and 19 per cent of its forests and woodlands are degraded.[19] Urban population growth and climate change are rapidly destroying forests and savannas around Central African cities. The drying of Lake Chad, for instance, has had severe impacts on urban livelihoods and on the adaptive capacity of Central Africa to climate change. Coastal cities like Douala, Libreville, Luanda, Pointe-Noire and Port-Gentil are confronted with unsustainably large-scale degradation of coastal areas.

Deforestation is a major concern throughout Central Africa since every year it is losing large tracts of forest and tracts soil while experiencing declining biodiversity. Between 1990 and 2010, Cameroon lost 18.1 per cent of its forest; Equatorial Guinea 12.6 per cent; Chad 12.1 per cent; Angola 4.1 per cent; Congo (DR) 3.9 per cent; CAR 2.6 per cent; and the Republic of Congo 1.4 per cent.[20]



▲
Disappearing Lake Chad. **Source NASA/Public Domain.**

Climate Change and Natural Disasters

Although Africa produces only 4 per cent of the world's total greenhouse gas emissions, it is projected to suffer disproportionally from the impacts of global climate change.[21] Across Central Africa precipitation decreases and temperatures increase, especially affecting northern cities of Cameroon and Chad. The main environmental problem in Chad is increasing desertification after a decade marked by below-average rainfall and periodic droughts.[22] Cities in the centre of the sub-region (Bangui, Brazzaville and Kinshasa) and those on the Atlantic coast (Douala, Libreville, Luanda, Malabo and São Tomé) are facing soil degradation, coastal erosion and regular floods.

In the coming years, temperature increases are likely to become the norm in many Central African cities. Records at country and city levels indicate that warming between 0.2 and 0.8 degrees Celsius has occurred since the 1970s.[23] A 30 per cent variation in the length of the rainy season is projected. Declining water levels in Lake Chad[24] will likely be exacerbated by rising temperatures. The effects of declining rainfall are likely to affect Chad, northern Cameroon[25] and CAR, while flooding is more likely in Angola and the two Congos. Sea level rise, saline water intrusion and storm surges also constitute a threat,[26] with low-elevation agricultural areas and settlements such as Libreville and Luanda being among the most vulnerable.

Disaster event data for the sub-region from 1974 to 2003 noted significantly increased flooding in most Central African countries.[27] This included severe flooding in Cameroon in 2001 and yearly flooding in the Republic of Congo. Congo (DR) is most vulnerable to flooding of its many urban settlements along the Congo River. The country's densely populated capital, Kinshasa, is particularly at risk[28] when water levels of the river rise. Libreville (Gabon) is also highly vulnerable to flooding and other water-related disasters. Gabon's coastal area, which accommodates between 75 per cent and 85 per cent of the country's total population in such cities as Libreville, Port-Gentil and Tchibanga is vulnerable to coastal erosion, storm surges and flooding.

Climate change may also induce agricultural losses of 2-4 per cent of GDP in Central Africa[29]. Urban dwellers have become more vulnerable to food insecurity. This may become an important factor in environment-driven migrations in countries such as Chad, CAR and Congo (DR).

The risk of diseases such as cholera, meningitis, yellow fever, poliomyelitis and measles is high in the sub-region and, in 2011, Cameroon and the Republic of Congo experienced cholera and polio outbreaks in urban and rural areas.[30] In the cities of Central Africa - with their many slums and informal settlements; inadequate infrastructures and service provision; as well as inadequate urban land management practices - vulnerability to disasters is considerably higher. The intensity of calamitous events, however, is not the main driver of vulnerability but rather reflects the poor adaptive capacity of cities. For example, in Congo (DR) more than 100,000 people die annually from diarrhoea due to inadequate urban water and sanitation infrastructure and services.[31] Urban infrastructure deficits render cities more vulnerable to the effects of climate change and disaster as they have less adaptive capacity with which to respond to exogenous pressures.[32]

Urban Vulnerability and Climate Change Risks

Since the end of the 1990s, climate change has had significant impacts on weather-related risks to urban areas in Central Africa. Bangui, Brazzaville, Kinshasa, Luanda and Malabo have recently experienced unusually heavy rains and floods; N'Djamena, Aouzou, Zouar and Fada in Chad, as well as Garoua and Maroua in northern Cameroon experienced severe heatwaves and droughts. Rapid urban population growth and continuous environmental destruction are creating additional environmental problems.

The increasing vulnerability of urban dwellers and communities is caused by many factors, including location, level of urban services provision and the way communities treat their environment. Urban flooding can often be a consequence of human actions: explosive urban population growth; settlement in flood-prone areas; lack of urban storm water drains; poorly maintained urban infrastructures; poor urban management; and extreme poverty. As more people move to cities, developments seal off large areas of urban land, aggravating flooding by blocking free absorption of water by the soil.[33]

For many cities in the sub-region, the greatest risks posed by climate change are flooding, soil erosion, heatwaves, droughts, air pollution and high night temperatures. The cities most at risk are those in the northern part of the sub-region; those on the Atlantic coast; and those in low-elevation coastal zones which include Douala, Libreville, Luanda and Pointe-Noire. Libreville, however, has reduced its vulnerability due to investments in planning, adequate housing and good public infrastructures. The authorities have invested in modern water and sewage infrastructures and have improved urban roads, while city dwellers are now forbidden to build houses without planning permission. These measures have helped to improve the quality of housing and public infrastructure citywide.

The impacts of climate change cause internal movements of people, diminished sources of revenue and the destruction of property. Although climate change affects entire communities, children and older people are especially at risk because they are less able to cope. In most capitals of the sub-region, slum dwellers are also more vulnerable as they often live in more exposed and dangerous areas, with the worst quality housing and in areas without drainage system where flooding, erosions and landslides are consequently frequent.

Despite not being directly responsible, the living conditions of most urban dwellers have deteriorated due to climate change, with low-income and poor households the worst hit. In many cities in Chad, climate change has contributed to water scarcity and harvest failures for many urban farmers. In the centre of the sub-region it has contributed to flooding; failed harvests; destruction of poorly-built houses; and increased incidence of waterborne diseases. Climate change-related flooding will have increased impacts on infrastructure such as roads, railways, bridges and power equipment.[35]

Climate change has become a permanent threat to people's livelihoods in Central African cities. Land degradation; increased, or decreased, precipitation; and water scarcity further expose many urban dwellers to risk and increased poverty.

Green Energy in Urban Central Africa

Central African cities need to invest in establishing, implementing and entrenching green energy and green growth initiatives and policies. National and local governments need to design strategies with robust, sustainable and highly-focused proposals for relevant and readily implementable green energy and green growth to facilitate sustainable development.

In addition to bounteous mineral resources, Central African countries are endowed with significant hydroelectric and solar power potential, as well as other possibilities to produce green energy that could boost development. Congo (DR), for example, has a mostly unexploited hydroelectric potential of 100,000 MW. Almost half of that energy potential (44,000 MW) is concentrated at the Inga Falls, while the remainder is unevenly distributed nationwide.[36] The country's hydropower potential is three times Africa's present electricity consumption and the Inga Dams could supply electricity to all countries in Central and Southern Africa. Meanwhile, only 10.8 per cent of people in the country use electricity as their main source of energy and only 22.5 per cent countrywide have access to electricity (Table 5.5). Angola also possesses the potential to provide enough hydroelectricity for its current urban demand. Yet, less than 20 per cent of the population had access to electricity in 2007.[37]

The development of hydropower infrastructure in the sub-region to its full potential, however, is very costly (exceeding USD 15 billion) and beyond countries' budgets. The Inga Dam projects are also fraught with controversy, which includes its negative environmental impacts on the Congo River and catchment as well as the displacement of communities. Therefore, smaller production units (less than 30 MW) closer to the end users may be more effective and cost-efficient in the short run. All the same, regional cooperation in this respect should also be considered.

5.4
Urban Planning and Resource Management

The sub-region's fastest growing urban system, Kinshasa, has vast, outward-sprawling slums. **©Tim Dirven/Panos Pictures.**

Although Central Africa is generally rich in oil, minerals, fresh water, forest and biodiversity, the sub-region is characterized by deep poverty. Its cities are characterized by very high slum and informal settlement incidence (see Section 5.6; Table 5.8).

Urban Governance in Central Africa

Urban governance in Central Africa is beset by deep institutional failures. These, at least in part, are catalyzed by, and result in, informal land and housing acquisition by majority shares of the urban population. Recent decentralization efforts have led to additional urban governance problems with municipal institutions not reaching the poor urban majorities due to low access to funds. Inefficiencies, bureaucracy, corruption and nepotistic practices directly or indirectly favour the wealthy and the politically connected minority while neglecting the larger populace. Municipalities are largely unable to collect revenues to finance their services, leading to uncoordinated piecemeal interventions, while governance is compromised by lack of inclusion mechanisms.[38]

The core of Kinshasa, known as *Le Centre Ville*, was originally built for a colonial citizenry, which grew to 400,000 inhabitants in the 1960s. No planned urban development was in place to absorb additional people, but Kinshasa has grown to just under 10 million and is projected to surpass 14.5 million people by 2025 (Table 5.2). Not surprisingly, Kinshasa has vast, outward-sprawling slums and informal settlements (see Text Box 5.2). Conflict and post-conflict conditions in Central Africa have seen, and continue to generate, rural-urban migrations. Newly arrived entrants to the cities are largely unable to access formal land and housing markets. Private developers operate unregulated and primarily cater for the wealthy, leaving informality as the sole land and housing access option for all others with informal developments leading urban sprawl.

The slums and informal settlements of Central African cities have generated large "autonomous" informal zones where lack of formal governance is met by informal systems of self-regulation. Formal institutions of governance across Central Africa suffer from similar challenges and high levels of informality as found elsewhere in sub-Saharan Africa, with the stranglehold by corrupt public officials having devastating

BOX 5.2: **NEW CITIES IN CENTRAL AFRICA**

▲
'The future of Kinshasa'. Work is well underway reclaiming land for the construction of *La Cité du Fleuve* (River City). **©La Cité du Fleuve**

In its plan to decentralize governance, Congo (DR) passed in its 2006 constitution a law that increased the number of provinces from 11 to 26. All capitals of new provinces have the statute of a city. All new cities to be built face the problem of shortage of housing; lack of running clean water; sewerage; sanitation; electricity; paved roads; health, education and other social infrastructures.

In the short- and medium-terms, newly created cities in the country do not, and will not, have the necessary political, cultural and administrative means to guide urbanization. They are unable to provide physical and social infrastructures at the pace required to meet demand. Consequently, informality fills these governance gaps. Although efforts will be made to transform the new cities, unplanned urban growth, informal settlements and inadequate financial and human resource capacities of municipalities continue to hamper these cities.

In Kinshasa, the government has started the construction of the satellite city, *La Cité du Fleuve* (River City), to accommodate part of its urban growth and to avoid the omnipresent land and title deed problems that plague the city. This highly ambitious project is envisaged to escape these pitfalls by developing two adjacent islands on the Congo River. *La Cité du Fleuve*, already dubbed "the New Manhattan", is expected to provide flats, villas, offices, hotels and shopping centres. Public debate, on the desirability of this billion-dollar project, is already heated and includes concerns that the islands are allegedly unclaimed land, while the roads leading to these islands are to be built on land occupied by slum dwellers. There are also claims that the project's USD 200,000 apartments target an already saturated luxury development market. Whether that is correct or not, *La Cité du Fleuve* does not provide for the broad range of household incomes that any city requires. It should aim for a more varied range of socioeconomic strata, with cross-subsidization facilitating lower-income households to achieve more appropriate socioeconomic combinations of new development.

The Angolan government has created new towns on the outskirts of some of its largest cities. These satellite cities, seven so far, are being touted as an attempt to meet Angola's urban growth challenges. The most ambitious of these is *Nova Cidade de Kilamba* (Kilamba New City), 30 km from Luanda and envisaged to eventually create one million new residential units. The first phase was completed towards the end of 2012 and, like so much else in Angola, built by Chinese contractors. Whereas satellite cities are only as good as their connections with the metropolitan core they serve, there is little transport from Kilamba to Luanda.

"Social housing" projects for the urban poor are touted at the same time, including in the new town of Kilamba, or social housing projects in Zangu, Sapu and Panguila on the peripheries of Luanda. However, despite bold ambitions to build millions of houses in those new cities, social housing projects often fall desperately short of alleviating the city of formal housing shortages, because privately funded housing developments for the wealthier take precedence.

With informality operating as the *de facto* condition of Central African cities, city governments, municipalities and central governments need to engage more closely with civil society institutions to develop adequate capacity to reach more deeply into the majority informal urban fabric of new Central African cities (i.e. in terms of land and housing management, trade, employment and service provision). Arguments for and against decentralization cannot resolve what is necessary in terms of the distribution of governance functions. Rather, whether governance is centralized, decentralized or semi-decentralized, it should be determined by what is most suitable for the improvement and efficient delivery of urban services that boost adaptive capacity at household, neighbourhood and municipal levels.

Sources: *SIDINT (2010); Viegas (2012).*[39]

effects on the economy. Corruption is widespread in the sub-region. While corrupt public officials have occasionally been arrested, convictions are not always secured.[40] Corruption and poor governance are different sides of the same coin: in 2012, Angola, CAR, Chad and Congo (DR) all ranked amongst the worst performers in the Ibrahim Index of African Governance.[41]

It is difficult to give simple explanations for the complexities of pervasive corruption. Despite the existence of formal institutions in name, high levels of dysfunction prevail that sometimes render formal public institutions even less accessible than informal ones and they are often as exploitative, creating confusion between different systems of management. Decentralization has spread the potential for corruption and piecemeal (often redundant and exclusive) local government practices.[42] In Kinshasa, violent clashes have occurred because of urban management fragmented between formal and informal systems and between municipal and provincial authorities.[43]

Access to Urban Services

Brazzaville, Libreville and Yaoundé boast the highest levels of service delivery in the sub-region; Bangui, Berberati and Boali (Central African Republic), N'Djamena (Chad) and Mbuji-Mayi (Congo DR) have the lowest (Table 5.5). CAR is of particular concern in this respect. Access to urban sewerage services is desperately lacking across the sub-region. Whereas Brazzaville has the highest levels of access to piped water (89.1 per cent), access to sewerage is low (9.8 per cent). Luanda, Libreville, Kinshasa, Douala and Yaoundé boast high levels of access to electricity, while elsewhere it is relatively low. Access to electricity, as shown in Table 5.5, however, warrants caution in its interpretation. While access to electricity (i.e. the percentage of the population) estimates may be high, electrification rates (i.e. household connections to electricity) are likely to be significantly lower, especially in slums and informal settlements. Weak institutional capacity exacerbates lack of service provision in the urban slums.

Given the existing and projected urban health threats in the sub-region, the very low levels of access to water and sewerage should be a major concern with such large shares of urban dwellers facing heightened vulnerability to and increasing likelihood of the spread of diseases.

Lack of formal services provision renders poor urban households also particularly vulnerable to the linked costs of water, energy, transport and food. Poor households typically pay more for services rendered by private providers or informal vendors. Hence, vulnerability is exacerbated by lack of formal service provision and institutional capacity in Central African cities. Improving integrated urban service provision should be a key goal for Central Africa and should inform infrastructure and technology development planning.

Urban Access to Water

Access to improved water sources includes piped connections to a yard or dwelling, protected wells, tube wells and boreholes, protected springs, rainwater collection and public taps or standpipes. Improved sanitation refers to the use of flush or pour-flush systems that are connected to piped sewer systems, septic tanks or pit latrines, ventilated improved pit latrines, pit latrines with slabs or composting toilets.[44] Between 1990 and 2008, Angola made significant improvements across the board in access to drinking water and sanitation, averaging around 30 per cent improvements in general. Improved access to drinking water was also considerable for other Central African countries, although many households still lack access to drinking water and sanitation (Table 5.6). CAR and Chad moderately improved drinking water and sanitation coverage but stagnated in terms of urban household water connections. In Congo (DR), urban household connections to improved drinking water decreased from 51-23 per cent. Access to sanitation improved only in Angola and CAR (Table 5.6).

TABLE 5.5: **ACCESS TO SERVICES FOR SELECTED CITIES IN CENTRAL AFRICA (PERCENTAGE OF HOUSEHOLDS)**

Country	City	Year	Piped Water	Sewerage	Mobile	Access to Electricity
Angola	Luanda	2006	36.6	53.2	40.1	75.5
Cameroon	Douala	2006	51.0	25.3	76.2	98.9
Cameroon	Yaoundé	2006	53.8	28.2	82.8	98.9
Central African Republic	Bangui	2006	7.4	6.2	40.4	43.3
Central African Republic	Berberati	2006	3.5	0.7	13.1	4.1
Central African Republic	Boali	2006	5.7	1.1	23.1	16.5
Chad	N'Djamena	2004	27.6	10.3	--	29.2
Congo (Rep)	Brazzaville	2005	89.1	9.8	57.0	59.2
Congo (DR)	Kinshasa	2007	45.8	29.6	74.8	82.0
Congo (DR)	Lubumbashi	2007	29.6	15.2	53.4	44.0
Congo (DR)	Mbuji-Mayi	2007	10.2	10.4	34.0	3.7
Gabon	Libreville	2000	58.2	35.0	--	95.5

Source: *Global Urban Indicators – Selected Statistics: Monitoring the Habitat Agenda and the Millennium Development Goals,* Global Urban Observatory, November 2009. Table 12.

TABLE 5.6: **ACCESS TO IMPROVED DRINKING WATER AND SANITATION SERVICES IN CENTRAL AFRICAN COUNTRIES (PERCENTAGE OF URBAN POPULATION)**

Country	Urban Access to Improved Drinking Water Coverage (Per Cent)		Urban Household Connection to Improved Drinking Water Coverage (Per Cent)		Urban Access to Improved Sanitation Coverage (Per Cent)	
Year	**1990**	**2008**	**1990**	**2008**	**1990**	**2008**
Angola	30	60	1	34	58	86
Cameroon	77	92	25	25	65	56
Central African Republic	78	92	8	6	21	43
Chad	48	67	10	17	20	23
Congo	--	95	--	43	--	31
Congo (DR)	90	80	51	23	23	23
Equatorial Guinea	--	--	12	--	--	--
Gabon	--	95	--	49	--	33
São Tomé e Príncipe	--	89	--	32	--	30

Source: *Global Urban Indicators 2009, Table 11*

BOX 5.3: **WATERSHED DEGRADATION INCREASES WATER TREATMENT COST**

Constructed in 1939, the Lukunga water treatment plant supplies western Kinshasa with 48,000 m^3 of drinking water per year, serving approximately half a million people. The Lukunga catchment is highly vulnerable to soil erosion and, until the 1970s, was protected by dense forests. Agriculture, urban development and other land uses have accelerated soil erosion, increased siltation and extremely high water turbidity (muddiness).

Average turbidity levels of the Lukunga River have increased exponentially by 400-500 per cent since the 1970s, with peaks during heavy rainfall up to 600 times greater than before deforestation. High turbidity reduces water plant growth by reducing sunlight entry and may even lead to die-off of water plants, further degrading the river banks and catchment.

The intake for the Lukunga water treatment plant was originally located within a pristine forest area, but today this area is heavily degraded, surrounded by vegetable farming and informal urban settlements. Increased riverbed siltation requires regular dredging while the excessive turbidity creates water management problems. Expensive chemicals are required to treat the water, first to remove silt (coagulants) and then to adjust acidity (pH adjusters). The high costs of these chemicals have loaded the cost of water treatment.

Régie de distribution d'eau (REGIDESO), the public water utility, has secured the land title for the Lukunga water treatment plant in an effort to halt surrounding detrimental activities and prevent further encroachment. Reforestation of the catchment is being considered. However, the water plant may have to be closed because of the costs of water treatment.

▲ Degradation of the catchment supplying the public water utility's (REGIDESO) treatment plant in Kindu is threatening its operation. **©UNEP**

Other Kinshasa water treatment facilities at Lukaya, N'Djili and Ngaliema face similar constraints, particularly during high rains, with watershed degradation from unplanned agricultural and settlement encroachment cited as primary causes of high turbidity and sedimentation. The increasing costs for water treatment are affecting urban and agricultural dwellers as well as the capacity of REGIDESO and local authorities to provide services, since there is a direct correlation between the degree of sediment-loading and the cost of providing clean water. This emphasizes the inestimable value of direct and indirect ecosystem services supplied by healthy ecosystems and functional catchments.

Sources: Water Issues in the Democratic Republic of the Congo: Challenges and Opportunities. UNEP, Nairobi, 2011.

▲
A market place in São Tomé e Príncipe. **©Inés Fernández.** Licensed under the Creative Commons Attribution 2.0 Generic license.

Urban Food Security

Millions of urban dwellers are facing potential food insecurity as their cities warm.

The Central African share of imported urban food is high. Urban and peri-urban farming and market gardening also play a significant role in urban food security. There are a number of key challenges[45] regarding food security in urban Central Africa. Urban encroachment upon fertile soil is a problem, whether through state actions or by the leaders of ethnic groups who sell off valuable arable urban land for construction, often in violation of existing policies (as in Brazzaville).[46] Shortages of agricultural inputs (seed shortages in Gabon and lack of safe agricultural water and hygienic fertilizer) also compromise the quality of urban produce in Central Africa. Ecologically sensitive agroecological practices are often absent. In Bangui, for example, shifting agriculture practices have been blamed for soil nutrient depletion. However, opportunities remain to ward off soil depletion, utilize nutrients from recycled waste and close soil nutrient loops.

Urban malnutrition is rife in Central Africa,[47] with in excess of 40 per cent of children suffering from stunted development. In urban Cameroon, the poorest 20 per cent of children are four times more likely to suffer from moderate or severe malnutrition and are twice as likely to die before the age of five years when compared to the wealthiest 20 per cent.[48] In Kinshasa, a preference for street food is largely due to its lower cost and convenience[49] but this has nutritional consequences for urban dwellers through less diverse and lower nutrient intakes.

In Brazzaville, where up to 80 per cent of the urban demand for leafy vegetables is met by market gardeners who occupy 500 ha of garden space in the city, the earnings of market gardeners have been estimated at up to five times the national per capita income average.[50] In Bangui, 1,000 tons of vegetables are produced per annum from eight city market gardens.[51] In Yaoundé, migrants from northern Nigeria farm[52] but do so on state land without official permits. In general, the security of urban farmers' access to land remains a challenge, in terms of land tenure, routine exploitation and resource challenges.

In most of cities in the sub-region, fresh vegetables consumed on a daily basis are produced by market gardeners. With high-level urban unemployment across the sub-region, market gardening has become very popular, especially in the peripheries of cities. Market gardeners in many cities in the sub-region still use organic methods of farming. Although such gardening has gained importance as a source of income for many urban households in the sub-region and employs a growing number of urban dwellers, especially the poor, climate change remains a challenge for the sector. In some cities in the north of Central Africa, especially N'Djamena (Chad) and Ngoundéré (Cameroon), market gardening is affected by heatwaves. In the south of the region, in cities such as Bangui, Brazzaville, Kinshasa and Luanda, flooding is of concern.

Urban Energy Security

Central Africa is energy-rich, with 28 per cent of the continent's oil reserves[53] and significant hydropower potential of the Congo River. Varying levels of exploitation of energy resources exist. For example, Angola is Africa's second largest producer of oil with around 1.9 million barrels of oil per day[54] and CAR has 166 GW of electricity potential.

In Congo (DR) 99.56 per cent of the electricity supplied in 1990 came from hydropower, rising to 99.72 per cent in 2007.[55] It has, nonetheless, had a high-energy dependence on petroleum products and coal since 1990.[56] In 2002, 84.5 per cent of Cameroon's energy came from hydropower and renewable biomass. Cameroon's hydro-electricity potential is second only to that of Congo (DR) in all of Africa and can be environmentally developed safely to 13,700 MW. Cameroon's modest crude oil production averaged around 84,000 barrels/day in 2007.[57] The country's thermal capacity generation is on the rise. Between 2004 and 2011, it increased fourfold, with plans to install a further 100 MW capacity at Bamenda (20 MW); Ebolowa (10 MW); Mbalmayo (30 MW); and Yaoundé (40 MW).[58]

Yet, biomass energy production dominates national and urban energy profiles in other Central African nations. These high levels of urban biomass use reflect very low energy security among the urban poor and emphasize how little they benefit from the vast existing energy reserves and potentials. In CAR, biomass constituted 91 per cent of total primary energy supply in 2008.[59] In Sáo Tomé e Príncipe, it accounted for 37 per cent in 2008, while oil and oil products accounted for 62 per cent.

Central Africa is rich in forests and rivers, but the resource-security challenges of the urban poor can threaten ecosystems and ecosystem services. High volume and uncontrolled timber extractions lead to soil degradation which, in turn, threatens urban food security. High construction materials and electricity prices force the urban poor to draw upon the forest reserves for construction and fuel wood. However, uncontrolled timber extraction, besides reducing biodiversity, affects water catchment systems near urban areas and thus increases urban flooding risk. This is of particular significance to cities with pre-existing flooding vulnerability, like Kinshasa, where rainfall already exceeds absorption capacity.[60] Urban slums and informal settlements are often found in low-lying zones. Consequently, marginal and poor urban dwellers are rendered even more vulnerable to flooding, storm surges, sea level rise and saline intrusion.

In hydropower rich and oil exporting Cameroon, the use of biomass for energy is also high. Forest harvesting has increased and likely constitutes a threat to biodiversity. In CAR wood constitutes 80 per cent of the energy demand[61] and 95 per cent of the population use solid fuels[62]; the country imports fossil fuels from its oil-rich neighbours. Congo (DR) has 98 million ha (around 60 per cent) of the Congo Basin Forest and, in 1994, 90 per cent of the energy demand was met by fuel wood, declining to 85 per cent in 2007. In Kinshasa, 91.5 per cent of energy is based on fuel wood use.[63]

Suburbanization, Energy Distribution and Climate Change

Most Central African cities are overcrowded while suburbanization is causing increased urban sprawl. Unable to afford the costs of rent and services near city centres, many poor and low-income urban households move to the more affordable urban peripheries. There, they often do not have access to improved water and sanitation, electricity, paved roads or durable houses (see Section 5.2). This leads, in turn, to informal harvesting and agriculture, which contributes to destruction of forests and other natural areas. Economic crises may force other urban dwellers to also harvest natural resources for fuel.[64] Although sustainable energy production, distribution and consumption are priorities for many governments in the sub-region, the majority of people still rely on wood as the main energy source (Table 5.7).

TABLE 5.7: **FUEL USED FOR COOKING AS A PERCENTAGE OF THE CENTRAL AFRICAN URBAN POPULATION, BY COUNTRY**

Country	Gas	Electricity	Charcoal	Wood
Angola	86.0	0.1	13.0	0.9
Cameroon	0.2	30.6	2.4	53.2
Central African Republic	0.2	00.8	4.0	94.4
Chad	3.4	1.2	39.4	29.6
Congo (Rep)	15.6	4.9	49.6	18.7
Congo (DR)	-	10.8	52.2	36.6
Equatorial Guinea	-	-	-	-
Gabon	79.6	-	-	14.4
São Tomé e Príncipe	-	-	-	-

Sources: The Energy Access Situation in Developing Countries - A Review on the Least Developed Countries and Sub-Saharan Africa. UNDP, New York. Available at: http://data.worldbank.org/indicator/SH.STA.ACSN. Last accessed: 04 August 2012

5.5
Urban Culture and Change Agents

▲
Aspirant Kuduro DJs in a street in Sambizanga musseque in Luanda, Angola's capital. During the day they work as Candongueiro (communal taxi) drivers and in the evening they record music. **©Alfredo D'Amato/Panos Pictures**

Culture and Identity

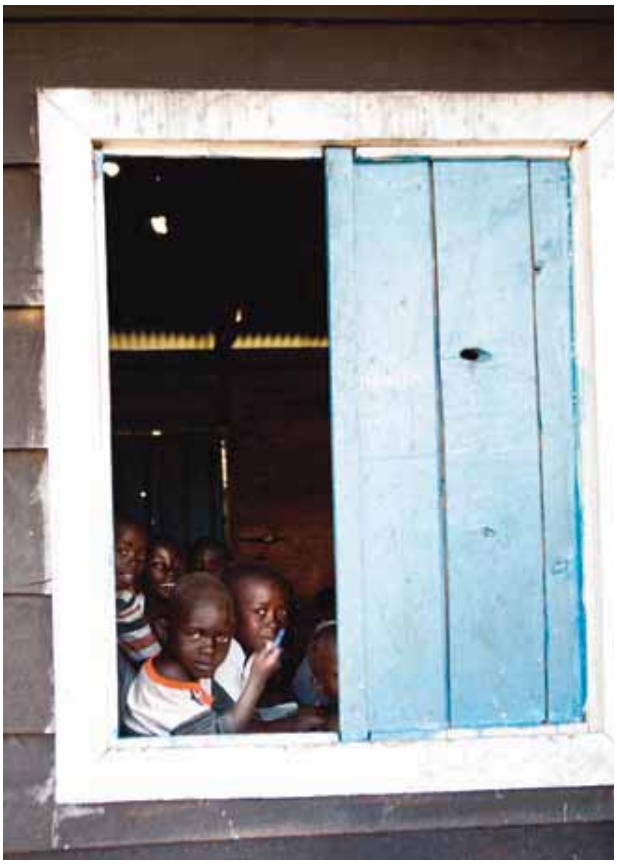
Urban culture and identity in Central African cities are characterized by religion; a significant youth bulge; circular migration; and long histories of conflict. Urban ethnic segregation persists amidst the diversity of people, languages and cultures in Central Africa. Cameroon's 285 indigenous languages[65] are an indication of this diversity. The high urban ethnic diversity opens opportunities for the exploitation of ethnic identity and conflict over belonging, marginalization, exploitation and denigration of those perceived as "strangers" in Central African cities (e.g. migrants). National identities are used as strategies for inclusion and exclusion.[66] Decentralization of governance in Cameroon has arguably led to further urban ethnic exploitation, such as in the coastal city of Limbe,[67] and ethnic confrontations have increasingly taken place in Central African cities.

With the rise of poverty across the sub-region, people settle in cities on the basis of ethnicity, language, income or culture. Some areas of Brazzaville are occupied mostly by people with shared ethnic origin. Likewise, Lingala, a language that was mainly spoken in Kinshasa, in the province of Equator and within the army, has become a language spoken across much of the country and many Congolese people, especially those who live in the diaspora, identify themselves by Lingala. The aspirations of urban dwellers are intimately linked to the desire for modernity and membership of the global society. In Kinshasa, for example, government-led city development schemes threaten to displace the poor and to destabilize their income generation activities. With the constant threat of displacement and eviction, the poor still seek the possibility of living in a modern city that is globally connected because there is a widespread longing for the right of inclusion in global society that goes beyond the desire for inclusion in the city locality itself.[68] French-speaking Cameroonians are increasingly looking for opportunities to become proficient in English, as it is seen as a medium for engagement with globalization and improved access to global opportunities for growth and self-improvement.[69]

Youth and Urban Culture

The age profile of people in urban Central Africa resembles that of neighbouring Western Africa. The percentage of people under the age of 15 years constitutes between 34.4 per cent (Gabon) to 47.5 per cent (Congo DR) of the sub-region's national populations. The growth of urban youth can significantly influence society and catalyze social change through the adoption and dissemination of new norms, values, beliefs and behaviours. These changes can be so dynamic that ultimate outcomes may be difficult to predict. African youth are considered to be makers and breakers of society and possess discursive power that will likely drive urban social, political and economic dynamics in the future.[70]

There are, however, few platforms where youth can voice their condition, desires and hopes in Central African cities. Youth participation in formal systems of governance and in local community affairs therefore remains limited and pushes them to engage with the informal sector. Consequently, youth behaviour is often seen as a symptom of crisis, destructive and fraught with identity confusion.



▲ Children peer out of a classroom at the Kanyaruchinya Primary School, in North Kivu, DRC. Approximately 3/4 of the students have returned after the population fled due to the fighting at the end of August 2013. **©Aubrey Graham/IRIN**

In CAR, by 2015, 28,000 new young workers are expected to enter the job market each year.[71] In Equatorial Guinea 25,000 to 49,000 young jobseekers are expected to do so between 2011 and 2020.[72] Yet, in countries in the sub-region, no specific national or city level strategies or policies exist for engaging with the youth. Equatorial Guinea has, however, made considerable progress by providing free higher education; making private education affordable;[73] and establishing technical and vocational training in the seven provincial capitals.

Youths are a key driver of social change in cities in the sub-region. They will soon constitute the new voting majority and they often already take action on socioeconomic issues in urban Central African society. In Cameroon, 3,000 students from the University of Buea (capital of the Southwest Region of Cameroon) took to the streets to protest police inaction over the robbery and rape of students in their residences by armed gangs. A few weeks later, students caught and killed a suspected bandit by "necklacing", which involves securing a petroleum doused tyre around the neck of the victim and

setting it alight.[74] Over time, student activism has become increasingly politicized in Cameroon and it remains to be seen whether a tipping point will be reached that ushers in a transformation in Cameroonian politics fuelled by the pervasive generation gap.

Despite the deeply rooted moral and cultural matrix that defines children in terms of intrinsic wealth and social good, they are increasingly viewed as troublesome and potentially dangerous. A significant generation gap exists in Central Africa[75] and, in cities across the sub-region, children have become a source of evil in the collective social imaginary. In Congo, religious television channels run weekly shows where "child witches" are identified during public mass meetings, and the persecution of witch children in the streets of Congo's towns and villages is becoming disturbingly common. The unprecedented demonization of children indicates a deeply rooted social crisis.

An exclusive focus on the needs and disenfranchisement of urban Central African youth fails to accommodate, adequately, the high levels of agency that the youth possess, especially in terms of their exposure to global or western norms and standards. The restrictive and often ignorant positions adopted by the powerful and educated towards youth serve only to incubate and fuel sentiments which, without appropriate avenues for expression, are bound to erupt over time. Embracing change is critical to forging a new future. Railing against westernization by employing a "discourse of loss"[76] is hardly helpful in constructing honest interpretations and analyses of the critical role played by young citizens in remaking Central African societies.[77]

Gender, Cultural Change and Trade

Opportunities in education are lacking for a high number of Central African women, despite their critical role in ensuring the financial and material sustainability of households. Among the urban poor, women are perhaps the most significant social actors alongside youth. Yet, support for the advancement of women in society is limited. Female refugees are particularly vulnerable to violence. More than 500 cases of gender violence, 37 cases of rape and 13 cases of attempted rape were reported in Chad between November 2010 and May 2011; but rape is seldom successfully prosecuted. Marital rape, for example, is not recognized in the Chadian legislature.[78] In the Republic of Congo, rape, domestic violence and abuse exist alongside other human rights abuses and sexual harassment is illegal but the law is barely enforced.[79]

In Central African cities, women play a key role in

▲ A woman trader and her daughter spend hours each day working in the Sandaga Market, Douala, Cameroon. While women represent over 800 of the 1,300 traders in Sandaga, they are heavily marginalized in the marketplace. **©Johanna Paillet, The Advocacy Project.** Licensed under the Creative Commons Non-Commercial Share-Alike 2.0 Generic license.

their communities. Women participate actively in cross-border trade which elevates women, as well as playing a key role in poverty alleviation.[80] At selected sites, along the Cameroon-Gabon-Equatorial Guinea (Yaoundé to Kye'-Ossi), Cameroon-Chad-Nigeria and Cameroon-Nigeria (Yaoundé' to Limbe) borders, significant gender differences were associated with informal production and trade activities. These differences included that women were more involved with the agriculture and food sectors, while men were more involved in the forestry and mining sectors. The lack of support mechanisms such as microcredit; savings schemes; skills development; support infrastructure (e.g. cold storage chains); vocational training; and technical advice, however, as well as corruption, bureaucracy and too many checkpoints impacts upon these informal traders.[81]

Cross-border informal trade is more controlled by women with higher levels of education than their male trade counterparts.[82] Women informal traders are also subject to routine harassment and pay more bribes than males. Lack of financial and institutional support undermines efforts by these women to expand businesses and establish more stable and reliable modes of operation. Improving transport systems and policies in intra- and inter-regional movements would go a long way towards improving the plight of informal women traders.

In Central Africa, women and youth are clearly key agents of sociocultural change. They are significant actors and agents in social and economic spheres in the sub-region and its cities. The overwhelmingly populous youth demographic is notable. Opportunities for advancement are scarce and there is high youth unemployment. This results in a large urban labour pool as well as a sizeable potential consumer base. Women and youth are, however, yet to prove their role in driving future political change and reform in the sub-region. In post-war Angola, for example, the youth require psychosocial assistance.[83] They need more than programmes teaching ethics and morality but rather places where reconciliation can take root and where injustices can be corrected.

Changing attitudes towards youth gender interactions, sexual relations and HIV, matrimonial relationships, as well as female education and employment, requires that men become more a part of the process of social change. Dealing with gender inequality in society requires involving both sexes to bring about lasting change. The quest for lost African values inadvertently results in the relegation of women to second class societal status and complicates attempts to bring about gender transformation.

As forces for social change, women and youth constitute the foundational elements. Still, they remain weak due to lack of formal education and training, access to microfinance, municipal and government support schemes, and poor participation in the public sphere. One way to remedy this situation would be to involve women and youth more effectively in the policymaking processes of Central African cities.

Informality and Cultural Change

The infrastructure deficit plays a key role in generating informality and activities that would simply not exist in the presence of a well-developed infrastructure.[84] In 2008, over 80 per cent of the workforce of Central Africa was employed in informal and agricultural sectors.[85] A third of all children in Central Africa have been estimated to work full-time as unpaid labour.[86] An estimated 1.5 million people join the workforce every year on average; 45 per cent of the sub-region's total population lives on less than USD 1 per day; and unemployment exceeds 30 per cent in urban areas.[87]

Urban dwellers in Central Africa are heavily employed (or self-employed) in the informal sector, particularly youth, due to lack of education and few opportunities in the formal public and private sectors. Those employed informally often engage in multiple trade and labour activities within their opportunity space, enabled through networks of kinship, religion, clan and community.

The scale, operation and the importance of markets in Central African cities is significant. For example, Douala hosts extensive markets[88] while Kinshasa's public market includes over 30,000 traders.[89] These markets are facilitated by diverse networks[90] of relationships involving foreign and local actors.[91] In Central Africa's slums,[92] informality is the normative orientation of urban society. It is not an aberration to be "solved" but a *de facto* structure through which activities, livelihoods and survival strategies are devised, adapted, maintained and discarded. Urban development programmes that fail to acknowledge these realities are likely to fail.

With women and youth being very clearly highlighted as urban change agents, there are a number of issues which need to be tackled urgently on sub-regional, national and local scales. There is clearly a strong need to improve teacher training and facilities in order to achieve greater numbers of graduates from higher education institutions. Youth participation in the improvement and development of everyday society requires that local, national, regional and continental governance should consider where and how to open up space for new expression, innovation and change.

In urban slums, where women are particularly vulnerable, programmes which harness and boost the potential of female-led production activities are required. In those communities where men are elevated in social status above women, community members need to be engaged more directly in gender transformation cultures, so that constructive and positive values and beliefs around femininity and masculinity can evolve at the same time.

To help Central African cities' women and youth in their transition to urban societies that accommodate their rights and needs, strong community-level and institutional support mechanisms are required. This is to facilitate the advancement and development of women and youth in society, as well as their improved inclusion and participation into the broader sociocultural and political spheres.

5.6
Emerging Issues

Artisanal gold miners in the eastern DRC. The sub-region's huge mineral reserves and significant foreign investment have only had a limited effect on urban employment. **©Guy Oliver/IRIN**

Urbanization and Extractive Economies

Africa holds 59 per cent of the world's platinum, 62 per cent of the aluminium silicate and over 50 per cent of the world's share of diamonds. Southern Africa alone accounts for half of the world's reserves of chromites, vanadiumites, manganese and gold.[93] Central Africa is endowed with oil, gas and other mineral resources that are the backbone of several national economies and that have contributed to dramatic economic growth, especially in Angola, the Republic of the Congo, Equatorial Guinea and Gabon.

Unsurprisingly, during the past half century, Central Africa has attracted significant foreign investment in mining. The boom since the mid-2000s has resulted in increased numbers of new small towns in mining areas. These towns, besides offering new income opportunities and prosperity, have also brought problems including the spread of diseases, illegal settlement, prostitution and crime. Exploration of resources has further brought complex transboundary migration issues; in Angola, for instance, immigrants are regularly deported because they are considered responsible for the increase in crime.

Central African countries and cities are rapidly linking to the global economy through their exports of various commodities. In 2011, the oil- producing countries in the sub-region - Angola, Cameroon, Chad, Republic of Congo, Equatorial Guinea and Gabon – benefited from high oil prices, which translated into increased economic growth. Equatorial Guinea's estimated USD 26.11 billion oil revenues are stimulating the economy of the capital city

of Malabo with huge investments in public and tourism infrastructures. In Gabon, the urban economies of major cities such as Libreville and Port-Gentil also depend largely on oil production, which constitutes 75 per cent of the country's export revenue and up to 60 per cent of the government's total earnings. The Republic of the Congo rebuilt its capital Brazzaville - partially destroyed during the 1997-2000 civil wars - with oil revenues. In Luanda, the Angolan capital, corporate and multinational oil companies are investing in city infrastructure.

Clearly, the oil industry is a critical driver of growth and development in Central Africa, accounting for almost 50 per cent of the sub-region's sectoral GDP in 2012. The six oil-producing nations in the sub-region account for more than 70 per cent of the regional GDP. However these countries are, therefore, also highly susceptible to changes in production volumes and global oil prices. In Gabon, for example, oil production decreased between 1998 and 2010 from 140 million to around 60 million barrels per annum, seriously affecting its revenue flows.

Despite Central Africa's mineral and oil wealth, and the availability of cheap labour across its cities, the sub-region still lacks adequate industry to process minerals and oil locally. Raw materials are exported to the West or the Far East for processing with very little locally added value. Besides considering the options to process more of the extractions locally, the sub-region also needs to start thinking about economic diversification strategies to counter the negative impacts of future oil price fluctuations as well as to prepare for the post-oil era.

The overall impacts on mining, oil exploration and exports on employment have actually been rather limited, especially if compared to agriculture, industry and services. An important reason for lower-than-expected employment opportunities in mining and oil exploration is that central and local governance are plagued by mismanagement and corruption. This is especially the case in Angola, the two Congos, Equatorial Guinea and Gabon, where central governments and their administrations have been widely criticized for lack of transparency.

On the other hand, oil and petroleum industries and revenues have been critical to national and urban development in Chad, funding infrastructure for N'Djamena and other urban areas. To ensure that oil revenues directly benefit poor people and low-income households, the Government of Chad - in partnership with the World Bank and domestic as well as international non-governmental organizations, have put in place a system to manage oil revenues. Consequently, these revenues are now funding over 100 programmes, including agriculture and water-related projects, as well as school and road construction. New and improved roads between the capital N'Djamena and surrounding agricultural districts have cut travel time by half, helping traders to supply the city with produce. Projects financed by oil revenues also provide employment to many local people and help to alleviate poverty.[94]

Although there is no doubt that Central Africa depends on mineral and oil exports to achieve growth, the environmental impacts of the exploitation of these natural resources have been huge. Abandoned and active diamond, gold and other mining sites have created numerous environmental disasters through degradation and conversion of natural habitats, groundwater pollution and high volumes of waste.[95]

Urban Poverty

Urban populations in Central Africa are growing rapidly (see Section 5.1). Central African urban dwellers have been facing deep poverty for decades and this condition continues unabated. Despite a lack of accurate data, empirical information gives ample reason to assume that urban poverty and its impacts are on the rise. It remains one of the more important obstacles to regional, national and urban development. Given the continued increases in urbanization in the sub-region, overcoming urban poverty should head the agenda of policymakers and governments.

Conflict and instability can be strong drivers of poverty and urban slum proliferation as people tend to flee conflict areas for the relative security of cities. This can facilitate deepening urban instability, as in cities such as Lubumbashi, Mbuji-Mayi and Goma (Congo DR), as well as Bangui (Central African Republic) and Luanda (Angola). Chad and CAR, with recent experiences of conflict, have particularly high shares of slum dwellers (see Table 5.8). However, instability in Chad and CAR is not exclusively the result of domestic political conditions. Chad, for instance, has also been affected by the Darfur conflict[96] in Sudan and by the Libyan revolution[97], indicating that the creation of urban slums also has regional components and stressors.

Since projections point at urbanization level increases throughout Central Africa, it is probable that urban poverty and the associated slums and informal settlement proliferation will continue to increase. Bangui's informal settlements dominate the urban landscape to such an extent that even the classic urban spatial segregation between the formal and informal city is now absent. Such cities are referred to as "slum cities"[98]. Interestingly, the absence of this "urban divide"[99] has not translated into urban spatial integration.

Urban poverty also expresses itself in various development indicators. Countries in Central Africa are among those in Africa with the highest infant mortality rates. The percentage of underweight children in Chad, for instance, is worryingly high. Throughout Central Africa, progress in reducing this mortality continues to be slower than expected[100] because healthcare access is low. For decades, these countries have underinvested in any social infrastructure, causing poor access to healthcare as well as exceptionally low literacy rates: 31.8 per cent in Chad and 48.6 per cent in CAR (the lowest figures recorded over the past 20 years).

Part of the problem is the significantly uneven income distribution across the sub-region. In oil and mineral rich countries as well as the agriculture-based economies of the sub-region, inequality has remained more or less unchanged.

▲
Local residents walk down a street in a poor neighborhood in central Malabo, Equatorial Guinea. **©2011 AP Images/Rebecca Blackwell**

TABLE 5.8: **PERCENTAGE OF PEOPLE LIVING IN SLUMS IN CENTRAL AFRICAN COUNTRIES**

Country	1990	1995	2000	2005	2007
Angola	--	--	--	86.5	--
Cameroon	50.8	49.6	48.4	47.4	46.6
Central African Republic	87.5	89.7	91.9	94.1	95.0
Chad	98.9	96.4	93.9	91.3	90.3
Congo	--	--	--	53.4	--
Congo (DR)	--	--	--	76.4	--
Equatorial Guinea			--	66.3	--
Gabon	--	--	--	38.7	--
São Tomé e Príncipe	-	-	-	-	-

Sources: Global Urban Indicators – Selected Statistics: Monitoring the Habitat Agenda and the Millennium Development Goals, Global Urban Observatory, November 2009.

TABLE 5.9: **GINI COEFFICIENTS FOR CENTRAL AFRICAN CITIES**

Country	City	Year	City Gini Coefficient	Country Gini Coefficient
Angola	--	2009	--	0.586
Cameroon	Douala	1996	0.46	--
Cameroon	Douala	2001	--	0.41
Cameroon	Yaoundé	2009	--	0.41
Central African Republic	Bangui	2003	0.42	0.42
Chad	--	2009	--	0.397
Congo	Brazzaville	2005	0.45	--
Congo (Rep)	Pointe-Noire	2005	0.39	--
Congo (DR)	Kinshasa	2004-5	0.39	0.40
Gabon	Libreville & Port-Gentil	1996	0.45	--
Sáo Tomé e Principe	--	--	--	-
Equatorial Guinea	--	--	--	-

Sources: African Statistical Yearbook, (2009) and Global Urban Indicators – Selected Statistics: Monitoring the Habitat Agenda and the Millennium Development Goals, Global Urban Observatory, November 2009. Tables 26 & 27;

Angola, despite its vast mineral and oil wealth, continues to be the most unequal country in the region (Table 5.9). This is evidenced by the very high shares of slum dwellers in Luanda and by the fact that in 2005 Angola had a national slum population of 86.5 per cent (Table 5.8). Lack of access to basic services such as sanitation; clean drinking water; healthcare; nutrition; and facilities for treating HIV, is very likely to be responsible for the country's high levels of mortality.

Housing

In many cities of Central Africa, housing remains an acute problem. Lack of access to adequate housing has characterized the lives of the majority of the urban dwellers since independence in the early 1960s – a problem that has been left unattended for half a century. In Bangui, Brazzaville, Kinshasa, Luanda, Malabo, N'Djamena, São Tomé and Yaoundé the housing situation has been deteriorating to such extents that it can only be described as "chaotic", especially in poor and low-income areas. In Congo (DR) civil war; exponential urban growth; rural exodus; and the end of administrative control of migrations to cities have provoked severe housing shortages in most cities.[101] Critically bad housing conditions are found in all the capital cities in the sub-region, with governance failures negatively affecting four adequacy housing dimensions: quantity, quality, location and price.

Access to Urban Services

Despite current economic growth, years of prolonged failure in urban services delivery are driving down the living standards of the majority of the sub-region's urban dwellers. Despite the abundance of national wealth, many Central Africans have been deprived of basic services for decades. Access to electricity, clean water and sanitation all remain critical issues for the majority of people in the sub-region (see Table 5.10), with appallingly low service provision levels.

Education

Dictatorships, bad governance, corruption and economic crises have negatively impacted many Central African (mostly urban-based) education systems[102] and many cities are facing sharp declines in educational services. The CAR and Chad, have particularly low school enrolments (see Table 5.4) with levels less than 60 per cent. In Goma, Kinshasa, Mbandaka and Mbuji-Mayi as well as in other cities in Congo (DR) nearly 40 per cent of children are not enrolled in school. Poor quality education, especially at secondary and tertiary levels is also of concern, particularly since the situation is worsening. Public schools and universities have not been repaired, while furniture and school equipment is often no longer renewed. With little or no income, poor and low-income parents often sacrifice their children's education. Education is no longer perceived as a necessity for all, pointing at an emerging trend where quality education has become a commodity mostly for the rich rather than a public service and a human right.[103]

Access to Health Services

For decades, the majority of Central African urban dwellers have faced difficult access to food and healthcare. The economic crisis has further increased these problems for the low-income and poor with health and food costs increasing as a proportion of household budgets. In many households in Bangui, Brazzaville, Kinshasa, Libreville, Luanda, Malabo, N'Djamena and São Tomé food can be so unaffordable as to affect nutritional intake and variety. People consume the same kind of food daily, despite the variety of crops available. Consequently, urban malnutrition and ill health incidence have risen. In Bangui, Kinshasa and Luanda, a high proportion of children suffer malnutrition and the majority of urban dwellers do not have easy access to health services.

Millions of people throughout the region, especially among the poor, face hunger and malnutrition as a result of high food costs, supply constraints and inadequate diets.[104] In Angola, 29

TABLE 5.10: **ACCESS TO URBAN SERVICES IN 2008**

Country	Population (per cent) with access to electricity	Population (per cent) with access to improved sanitation	Population (per cent) with access to clean water
Angola	26.2	58	51
Cameroon	29.4	49	70
Central African Republic	5.1	34	66
Chad	3.5	--	48
Congo (Rep)	30.0	18	46
Congo (DR)	11.1	24	71
Equatorial Guinea	--	--	43
Gabon	36.7	33	87
São Tomé e Príncipe	48.5	26	86

Sources: The Energy Access Situation in Developing Countries - A Review on the Least Developed Countries and Sub-Saharan Africa, UNDP, New York. Available at: http://data.worldbank.org/indicator/SH.STA.ACSN. Last accessed: 04 August 2012.

▲
School children in Cameroon. **©Jwild.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

per cent of children under five years were growth-stunted and 16 per cent underweight in 2008;[105] in Cameroon 27 per cent of children were underweight in 2007.[106] In CAR, 10 per cent of children under five years old suffer from acute malnutrition and up to 3.5 per cent from severe malnutrition.[107] Climate change is expected to erode food security in many cities in the sub-region.

Private health companies in Central African cities are reluctant to invest in poor urban neighbourhoods; health services are mainly provided by traditional healers, local health practitioners and local pharmacists.[108] Underinvestment is an important factor underlying the deteriorating access to urban healthcare in the sub-region. In Angola, only 3.4 per cent of the GDP was devoted to health in 2007;[109] in Cameroon it was 4 per cent of the budget between 1990 and 2000;[110] and, in Congo (DR), 5 per cent in 2010.[111] Those living in slums, informal areas and the urban peripheries are the most affected, with malaria, measles, respiratory infections, typhoid and sleeping sickness being among the biggest killers in urban Central Africa.

Information and Communication Technology

Contrary to other African sub-regions, where information and communication technologies (ICT) are playing an important role in the lives of urban dwellers (especially in financial and banking systems), people in Central African cities have not yet benefited greatly from an increase in ICT. Despite a sharp rise in the number of mobile phone users, people mostly use mobile telephone for making social calls and messaging. Although information in this sector is scarce, and while ICT and telecoms companies are reluctant to provide data to researchers, it appears that the majority of city dwellers do not yet use telephone or Internet banking.

Migration and Urbanization

Central Africa is characterized by population fluidity because the national boundaries imposed by colonialism often cut through the territory of ethnic groups who share the same ancestral origin, language, culture, customs and ancestral territories. Hence, ethnic groups like the Bakongo and Chokwe are found in both Congos and Angola. Likewise, the Lunda people can be found in Angola, Congo (DR) and Zambia. Therefore, mobility across borders in the sub-region is significant. Most people who migrate are welcomed by their ethnic group in the country of destination and some receive official documents rather than being registered as migrants or foreigners. Therefore, there are serious difficulties in establishing accurate information on migration in many

cities in Central Africa. Current data on voluntary or imposed migration are mainly guesses, since many cities and municipalities in the sub-region do not keep data on their populations in the first place.

Defining an acceptable framework for the management of migrations in Central Africa remains a formidable challenge as various migration flows continue unabated or increase. Besides classic rural-urban migration flows, Africa is now also experiencing migration between cities and towns, between rural areas, as well as across national borders. Some migrations are voluntary, while others are compelled by environmental decline or by conflict.[112]

Research evidence advocates for increasing migration and population movement flows in Africa as being important to political and environmental changes.[113] Policymakers are now starting to promote movements of people within and between countries. This is because labour and employment – the main drivers of migration in the sub-region – often economically benefit the providing and receiving countries and, if well managed, can produce "win-win" results. For the migrants, it provides access to employment opportunities and enables remittances to their home countries.[114]

As a result of globalization, rapid population growth, increasing mobility, and geographically uneven development, Central African capitals including Bangui, Kinshasa, Libreville, Luanda, Malabo and Yaoundé are experiencing increasing domestic and transboundary movements of people. The data used to estimate the international migrant stock at a particular time is obtained mainly from population censuses. Unfortunately, many cities in the region have not recently updated their census information.

There is a variety of typical migration trajectories in Central Africa. Many migrants to the city of Libreville, Gabon, arrive from Cameroon and the Republic of the Congo; in Malabo (Equatorial Guinea) the majority come from Cameroon, Chad and Gabon. In 2010, a number of migrants to Central African cities came from outside the sub-region, especially from West Africa (Guinea, Mali and Senegal). Migrants from Congo (DR), especially from the west of that country, tend to migrate to Angolan cities to work as miners in diamond exploration, while some migrants from Congo (DR) go to Brazzaville in the neighbouring republic and other large cities in the sub-region.[115]

As shown in Table 5.11, Congo (DR) has the highest number of migrants in the region. Despite their small populations, Gabon and CAR also have significant numbers of migrants in their territories. This can be explained by ethnic groups being divided by national boundaries, which increases human movement in Central Africa. Migration and movement of people is encouraged by the Economic Community of Central African States (ECCAS). Several agreements in this respect exist between member states to ease the free movement of people within the region. However, despite these agreements and general acceptance by ECCAS, some countries (notably Angola, Equatorial Guinea, Gabon and São Tomé e Príncipe) continue to view transboundary migrations as invasions.

Typically, transboundary migrants are considered to cause crime; environmental disasters; economic exploitation; or political tensions. Violent deportations from Angola of migrants started in late 2003, after the end of the 27-year civil war, when the Angolan government banned foreigners from working in diamond mines. The government deported 38,000 Congolese between April and November 2011, and reports highlighted that many deportees suffered sexual violence or were otherwise physically assaulted.[116]

Still, free movement of people within Central Africa remains a key long-term goal for ECCAS. The community treaty states that nationals of its member states can freely enter; travel to; establish in; and exit any territory of another member country. However, there has been little progress in the implementation of these rights. Visas are still often required to enter another member country.[117] Migration policies must be improved, and the ECCAS Treaty broadly implemented, since migration can help to stem or reverse unemployment, economic underdevelopment and illegal migration.[118] All three of these phenomena are widespread and continue to contribute to urban slum proliferation.

Employment and the search for better living conditions are often the reasons for migration. Interviews carried out in

TABLE 5.11: **INTERNATIONAL MIGRANT STOCK IN CENTRAL AFRICA IN 2007**

Country	Number of Migrants in 2007	Total Population in 2007
Angola	65,387	17,712,824
Cameroon	196,570	19,097,676
Chad	80,492	10,694,366
Central African Republic	388,251	4,106,897
Congo (DR)	444,672	66,309,141
Congo (Rep)	143,203	3,758,858
Equatorial Guinea	7,447	639,618
Gabon	284,127	1,447,388
São Tomé e Príncipe	5,253	163,390

Sources: Trends in International Migrant Stock: The 2008 Revision, United Nations database, UNDESA, Population Division POP/DB/MIG/Stock/Rev.2008.

Luanda, Libreville and Malabo show that migrants represent a significant portion of the workforce, especially in the oil and construction sectors. In Angola, for instance, 27 years of civil war had severely affected education. When the oil sector created demand for skilled people, the country could not provide enough qualified personnel and the majority of workers in the Angolan oil industry are now Congolese,[119] living mostly in Luanda.

Civil war, famine, drought and other disastrous circumstances also explain movements of people between cities and country borders. In northern Cameroon, many fled their homes because of drought and famine. In northern Chad, civil war added to the migratory flows of those who sought to escape drought and famine. Economic migrants from Congo (DR) mostly head for other countries and cities in the region, although conflict also contributed significantly to these flows.[120]

Migration policy implementation is likely to remain imperfect and policy formulation needs to seek, actively, a better understanding of the underlying forces and complexities of the migration phenomenon to benefit the migrants, their countries of origin and that of their hosts.[121]

Refugees and IDPs

Armed conflicts and economic crises in many cities in the sub-region have increased the number of internally displaced persons (IDPs). Most of the conflicts in Central Africa were, and are still, fuelled by conflicts over illegal exploitation of natural resources. Recent studies suggest that at least 40 per cent of all intrastate conflicts have a link to natural resources. Civil wars in Liberia, Angola and Congo (DR), indeed, have centred on resources like timber, diamonds, gold, minerals and oil.[122]

Although IDPs move away from armed conflict and political turmoil, the majority continue to suffer discrimination in their host cities and towns, in part because IDPs often create serious economic, social and humanitarian crises in receiving locales. In eastern Congo (DR), where civil war continues, IDPs face serious economic, social and humanitarian difficulties. Over 500,000 live without secure income sources in appalling conditions in camps in and around cities like Bukavu, Beni, Butembo, Goma, Massissi and Rutshuru. Most fled their villages and cities because of war, leaving behind their livelihoods, farms and other productive activities to become displaced in their own country.

▲
A UN Monusco peacekeeper in Dungu, keeps watch over Linakofo, a camp of 1359 internally-displaced people (IDPs), all of whom have fled attacks by the Lord's Resistance Army (LRA).
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TABLE 5.12: **CURRENT SITUATION OF REFUGEES AND IDPS IN CENTRAL AFRICA**

Country	Refugees from the Country	Refugees in the Country	Internally Displaced Persons
Angola	128,664	16,223	0
Cameroon	15,163	100,373	0
Central African Republic	162,862	16,730	105,206
Chad	42,640	366,494	124,000
Congo (DR)	491,481	152,749	1,709,278
Congo (Rep)	12,839	141,232	0
Equatorial Guinea	258	0	0
Gabon	173	1 773	0
São Tomé e Principe	33	0	0

Sources: UNHCR 2012, Congo DR: Thousands reported newly displaced in North Kivu. Accessed on www.unhcr.org/50af655c9.html on 10 December 2012.

Africa accounts for 20 per cent of the world's refugees and 45 per cent of all internally displaced persons.[123] At the end of 2011, an estimated 1.7 million people were internally displaced by fighting in Congo (DR) alone (see Table 5.12), in the wake of armed attacks by the Ugandan Lord's Resistance Army in the Lower and Upper Uele districts and by land conflicts between different ethnic groups in Ituri District – all in the country's northeast Orientale Province. Military operations against Ugandan and Rwandese armed groups in North and South Kivu brought the number of internally displaced in both provinces to over 340,000. With the M23 rebellion in North Kivu, the number of IDPs reached 800,000[124] and, despite uncertainty about the figures, North and South Kivu provinces alone are believed to accommodate some 1.6 million IDPs.[125]

The IDP situation in Central Africa remains underdocumented with very little data focused on the movement and lives of the displaced or on the movement of people between cities and rural areas.[126] However, movements in Congo (DR) have attracted the attention of non-governmental and humanitarian organizations, which have begun to track refugees and internally displaced. More than a dozen armed groups and militias operate in the eastern Congo (DR) that are responsible for the displacement of hundreds of thousands of people. That includes traumatized children, because the actions of the militias have led to increased incidences of sexual violence.

In many countries in the sub-region, violent presidential and parliamentary elections have spurred displacements, forcing some people to seek refuge outside their countries. Most of the IDPs who fled electoral violence in Central African cities have remained in temporary settlement and camps for years. Most who agreed to return to their villages or towns of origin, returned to localities without access to clean water, healthcare, transport, sanitation, education or decent food.

The absence, or failure, of national and local authorities in the region to design policies for the smooth reinsertion of IDPs, and the lack of political will to enact redistributive policies throughout the countries in the region, have accentuated inequality. After losing their possessions during their forced migration, most IDPs who return to their villages and towns continue to endure neglect and fall, inevitably, into deeper poverty and destitution.

IDPs have significantly contributed to the increase of populations of some cities in the sub-region such as Brazzaville and Luanda. Angola intends to rehouse the majority of Angolan IDPs through a nationwide programme of low-cost mass accommodation. How effective these interventions will be remains to be seen.

Conclusion

Living conditions in urban Central Africa have been deteriorating for many years. Cities in Central Africa have entered the 21st century facing mounting economic and social difficulties. Decades of dictatorship; internal and external looting of natural resources; widespread corruption; state mismanagement; and years of civil war have increased urban poverty, with far-reaching economic, social and institutional repercussions. Fighting corruption and mismanagement of public funds and resources should be a priority across the region.

Rising unemployment has emerged as one of the most important challenges facing urban dwellers in the sub-region. Its eradication requires substantial rethinking of cultural, social, political and economic policies by local and central authorities in all the sub-region's countries. Ultimately, employment should be seen as the urban authorities' first concern. Central African urban managers and administrators should all actively engage in the fight against poverty and destitution.

New investments are reaching the region in tandem with revenues from new business opportunities, mineral wealth and other exports. Most Central African countries do not lack the funds or access to technologies to improve vastly upon deep urban poverty, massive slum proliferation and low quality of life for the majority of dwellers. What is needed is the will of their political leaders to invest heavily in the welfare of their citizens.

ENDNOTES

1 International Monetary Fund. (2011). *World Economic Outlook (WEO: Tensions from the Two-Speed Recovery: Unemployment, Commodities, and Capital Flows*, IMF, Washington-DC, April 2011.

2 United Nations Development Programme. (2010). *Human Development Report. The Real Wealth of Nations: Pathways to Human Development*, New York, Palgrave Macmillan.

3 African Development Bank. (2012). *Africa Economic Outlook. Gabon: Overview*, Accessed from www.africaneconomicoutlook.org/en/countries/central-africa/gabon/ on 02 September 2012.

4 *Ibid*.

5 Chauvin, S. and Geis, A. (2011). *Who has been Affected, How and Why? The Spillover of the global financial crisis to sub-Saharan Africa and ways to recovery*. In *European Central Bank Occasional Paper*, No 124, ECB, Frankfurt, March, p.9.

6 Africa on the Brink. *'Africa in the Word Economy: The Backdrop- Colonialism'* accessed on: www.blackstate.com/africaonthebrink.html, accessed on 04 September 2012.

7 Iyenda, G. (2007). *Households' Livelihoods and Survival Strategies among Congolese Urban Poor. Alternative to Western Approaches to Development*, New York and Ontario, The Edwin Mellen Press.

8 African Development Bank (2011). *Central Africa: Regional Integration Strategy Paper 2011-2015*. Regional Department Center, NEPAD, Regional Integration and Trade Department, February 2011.

9 *Ibid*.

10 Economic Commission for Africa. (2012), *African Statistical Yearbook 2012*, Addis Ababa, ECA, 58.

11 Freemantle, S. and Stevens, J. (2012). *M10 and Africa: China-Africa - Taking stock after a decade of advance*, in *Africa Macro. Insight and Strategy,* Standard Bank, March 2012, p. 1.

12 Economic Commission for Africa. (2012), *African Statistical Yearbook 2012,* Addis Ababa. ECA, p. 44-45.

13 UN-Habitat (2010). *The State of African Cities* 2010: Governance, Inequality and Urban Land Markets, Nairobi, 2010, p. 178.

14 Musterd, S. and Ostendorf, W. eds (1998). *Segregation, polarisation and Social exclusion in Metropolitan Areas*, London, Routledge, P.4.

15 Democratic Republic of Congo. (2011). *Democratic Republic of Congo: Multi- Indicator Cluster Survey 2010, Monitoring the Situation of Children and Women, Summary Report*, Ministry of Planning and UNICEF, Kinshasa, May 2011, p.14.

16 *Ibid*. and World Bank. (2012) *World Development Indicators*, Washington DC, World Bank.; African Development Bank. (2011), *African Development Outlook*, Addis Abba, AfDB.

17 United Nations (2001) General Assembly and Security Council, *Prevention of armed conflict, Report of the Secretary-General*, New York, UN, June; United Nations (2002). *Final Report of the Panels of Experts on the Illegal Exploitation of Natural Resources and other forms of Wealth of the Democratic republic of Congo*, Security Council: New York, Unpublished; Podur, J. (2012). "Congo: Goma falls to Rwanda." Global Research. Centre for Research on Globalization. Accessed from: www.globalresearch.ca/congo-goma-falls-to-rwanda/5313102 on 23 October 2013.

18 World Bank. (2009). *Africa's development in a changing climate. Key policy advice from World Development Report 2010 and making climate resilient: a World bank Strategy for sub-Saharan Africa*, Washington DC, World Bank.

19 UNCTAD (2012), *Economic Development in Africa. Structural transformation and sustainable development in Africa*, 2012 report, New York and Geneva, UNCTAD, p.56.

20 *Ibid*, p.57.

21 UNEP (2008). *Africa: Atlas of Our Changing Environment*. Division of Early Warning and Assessment (DEWA) UNEP, Nairobia, Kenya. Available at: www.unep.org/dewa/africa/africaAtlas/PDF/en/Africa_Atlas_Full_en.pdf.

22 *Ibid,* p.122.

23 IFAD (2010). *Addressing climate change in West and Central Africa*. International Fund for Agricultural Development (IFAD).

24 African Development Bank. (2011), p.4.

25 Njnikam, E. and Tolale, E. (2009). *Energy systems: vulnerability, adaptation, resilience (VAR). Regional focus: Sub-Saharan Africa*, Helio International, p.8.

26 IFAD (2010).

27 Lukamba, M. (2010). *Natural disasters in African countries: what can we learn from them?,* TD vol. 6, No. 2, website: http://hdl.handle.net/10394/3879.

28 International Federation of Red Cross and Red Crescent (2011). *Annual Report. Central African Region*. 1st January 2011 – 31st December 2011, International Federation of Red Cross and Red Crescent Societies.

29 Boko, M.,,Niang, A. Nyong, C. Vogel, A. Githeko, M. Medany, B. Osman-Elasha, R. Tabo and P. Yanda. (2007). *Africa,* in: Parry M, Canziani O, Palutikof J, van der Linden P, Hanson C, eds. *Climate change 2007: Impacts, adaptation and vulnerability. Contribution of Working Group II to Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. (Cambridge, CUP).

30 International Federation of Red Cross and Red Crescent. (2011).

31 University of Gothenburg Policy Brief. (2008). *Democratic Republic of Congo – Environmental and climate change policy brief*, School of Business, Economics and Law, Department of Economics, University of Gothenburg, June 2008, p.9.

32 IIED (2008). *Towards Pro-Poor Adaptation to Climate Change in the Urban Centres of Low- and Middle-Income Countries*. Climate Change and Cities Discussion Paper 3, Moser, C. & Satterthwaite, D., Human Settlements Discussion Paper Series – Theme: *Climate Change and Cities 3*, International Institute for Environment and Development (IIED).

33 UN-Habitat (2010).

34 Parnell, S. & Walawege, R. (2011). *Sub-Saharan African urbanisation and global environmental change*. In *Global Environmental Change*, 21(1): pp. 12–20,, 2011, p.2.

35 *Ibid*, p.15.

36 Kasemuna, S. (2009). *Energy Systems: Vulnerability, Adaptation, Resilience (VAR). Regional focus: Sub-Saharan Africa*, Helio International, p.13.

37 African Development Bank. (2011). *African Economic Outlook 2007. Angola*, AfDB/OECD, p.116.

38 Mbuagbo, O. (2012). *Cameroon: flawed decentralisation and the politics of identity in the urban space*, in *Global Journal of Human Social Science, Sociology, Economics and Political Science*, vol. 12, Issue 11, Global Journals Inc (USA).

39 SIDINT (2010). *Are Satellite Cities the (Official) Future of GHEA's Urbanization?* in *Greater Horn of Eastern Africa (GHEA) Outlook,* 18, Society for International Development. Available at: www.sidint.net/docs/GHEA18_Satellite_Cities.pdf, on 18 August 2012; Viegas, S. (2012). *Urbanization in Luanda: geopolitical framework. A socio-territorial analysis*, paper presented at, 15th International Planning History Society Conference, Sao Paulo, July 15-18 2012, Accessed on: www.fau.usp.br/15-iphs-conference-sao-paulo.../29/VIEGAS.pdf, 27 March 2013.

40 United States Department of State. (2011). *Chad: Country reports on human rights practices*, United States Department of State, Bureau of Democracy, Human Rights and Labor, Washington-DC.

41 Mo Ibrahim Foundation. (2012). *Ibrahim Index of African Governance: Summary*, Mo Ibrahim Foundation, October, p.13.

42 Mbuagbo, O. (2012). *Cameroon: flawed decentralisation and the politics of identity in the urban space*, in *Global Journal of Human Social Science, Sociology, Economics and Political Science*, vol. 12, Issue 11, Global Journals Inc.

43 De Boeck, F. (2011a). *The modern titanic. Urban planning and everyday life in Kinshasa*, in Mbembe, A., Allen, L., eds., *The Salon Volume 4*, Johannesburg Workshop in Theory and Criticism. Johannesburg: University of Witwatersrand, p.73.

44 UNICEF/WHO (2012). *Progress on Drinking Water and Sanitation 2012 Update*, UNICEF and WHO.

45 FAO (2012). *Executive Brief: The Sahel Crisis*, FAO, 25 May 2012.

46 *Ibid,* p. 35.

47 UN-Habitat (2010).

48 World Health Organisation. (2011). *Cameroon*

ENDNOTES

Urban Health Profile, www.who.int/kobe_centre/measuring/urbanheart/cameroon.pdf. last accessed on 14 January 2013.

49 Iyenda, G. (2001). *Street Food and Income Generation for Poor Households in Kinshasa*, in *Environment & Urbanisation*, vol. 13, N°2, October 2001, pp233 – 241.

50 FAO (2012). *Growing greener cities in Africa. First status Report on Urban and Peri-Urban Agriculture*, Rome, FAO, p. 20.

51 *Ibid*, p. 48.

52 *Ibid,* p.20.

53 ADB CA. (2011).

54 African Development Bank (2012). *African Economic Outlook. 'Angola: Overview*, www.africaneconomicoutlook.org accessed on 18 February 2013.

55 Helio Cameroon. (2009). *Energy Systems: Vulnerability, Adaptation, Resilience (VAR). Regional focus: Sub-Saharan Africa*, Authors, Njnikam, E., Tolale, E., Helio International, 2009.

56 *Ibid,* p. 18.

57 *Ibid*.

58 Kenfack, J., Fogue, M., Hamandjoda, O. & Tatietse. (2011). *Promoting renewable energy and energy efficiency in Central Africa: A Cameroon case study*, paper presented at World Renewable Energy Congress 2011, Sweden, 8-13 May, Linkoping, Policy Issues (PI).

59 International Renewable Energy Agency. (2010). *Renewable Energy Country Profile: Central African Republic*, IRENA. Accessed from www.irena.org/remaps/countryprofiles/africa/centralafricanrepublic.pdf.

60 Lateef, A., Fernandez-Alonso, M., Tack, L., & Delvaux, D. (2010). *Geological constraints on urban sustainability, Kinshasa City, Democratic Republic of Congo*, in *Environmental Geosciences*, vol. 17, No 1, pp. 17-35, March 2010, p. 31.

61 Central African Republic. (2006). *Country Energy Information: Central African Republic, Developing Renewables*, September, p. 2.

62 International Renewable Energy Centre. (2010). *Central African Republic: Country Profile*. IRENA, www.irena.org/remaps/countryprofiles/africa/centralafricanrepublic.pdf accessed on 22 March 2013.

63 IUFRO/CIFOR (2010). *The fuel wood market chain of Kinshasa: socio-economic and sustainability outcome of the number one household energy in the DRC*, presentation August 2010 at Urban Forestry Combating Poverty: Building a Stakeholder Dialogue.

64 *Ibid.*

65 Ngefac, A. (2010). *Linguistic choices in postcolonial multilingual Cameroon*, in *Nordic Journal of African Studies*, vol. 19, No. 3, 149-164.

66 Vlassenroot, K., B scher, K. (2009). *The city as frontier: urban development and identity processes in Goma*, Working Paper no. 61, Cities and Fragile States, Conflict Research Group, University of Ghent, November 2009.

67 Mbuagbo, O. (2012). *Cameroon: flawed decentralisation and the politics of identity in the urban space*, in *Global Journal of Human Social Science, Sociology, Economics and Political Science*, vol. 12, Issue 11, Global Journals Inc (USA).

68 De Boeck, F. (2011), p.78.

69 Kouega, J. (1999). *Forty years of official bilingualism in Cameroon: an appraisal*, in *English Today*, vol. 15. No. 4, pp. 38-43. Ngefac, A. (2010). Anchimbe, A. (2007). *Lingaubridity: regining linguistic identities among children in urban areas*, in Anchimbe, A. eds. *Linguistic Identity in Postcolonial Multilingual spaces*, 2007, pp.66-86. In: Ngefac, A. (2010). Mforteh, A. (2007. *In search of new identities in multilingual Cameroon*, in Anchimbe A., eds., *Linguistic Identity in Postcolonial Multilingual Spaces*, pp. 87-101.

70 De Boeck, F., and Honwana, A. (2005). *Children and youth in Africa: agency, identity and place*, in *Africa e Mediterraneo; Cultura e Societa*, 51/51, 42-51.

71 African Development Bank (2012). *African Economic Outlook. Central African Republic 2012*. www.africaneconomicoutlook.org. accessed in 22 February 2013.

72 *Ibid*

73 *Ibid*.

74 This is a mode of informal punishment - termed 'necklacing' - that emerged during the 1980s struggles against Apartheid in black townships, and which continues as a form of vigilante community action to this day in South Africa.

75 De Boeck, F., and Honwana, A. (2005).

76 Seremetakis, C. (1994). *The Senses Still: Perception and Memory as Material Culture in Modernity*, Chicago and London, UCP; de Boeck, F. (1999b). *Dogs Breaking Their Leash: Globalization and Shifting Gender Categories in the Diamond Traffic between Angola and DRC (1984–1997)*, in *Changements au féminin en Afrique Noire, Anthropologie et Littérature,* ed. D. De Lame and C. Zabus, *Volume 1 Anthropologie*. Tervuren and Paris: Musée Royale de l'Afrique Centrale and L'Harmattan, pp. 87–114. In: de Boeck, F., and Honwana, A. (2005).

77 Gandoulou, J., (1989). *Au Coeur de la Sape: Moeurs et Aventures des Congolais à Paris*. Paris: L'Harmattan. In: De Boeck, F., and Honwana, A. (2005). Yoka Lye Mudaba, A., (1991). "Système de la mode à Kinshasa: culte du paraître," in *La ville africaine et ses urgences vitales*, ed. Mashin Maringa. *Kinshasa: Facultés Catholiques de Kinshasa*, pp. 31–37. In: De Boeck, F., and Honwana, A. (2005). Friedman, J., (1994). *The Political Economy of Elegance: An African Cult of Beauty*, in *Consumption and Identity*, ed. J. Friedman. Chur, Switzerland: Harwood, pp. 167–87. In: De Boeck, F., and Honwana, A. (2005). De Boeck, F. (1999). *Domesticating diamonds and dollars: identity, expenditure and sharing in Southwestern Zaire (1984-1997)*, in Meyer B. and Geschiere, P., eds., *Globalization and Identity: Dialectics of Flow and Closure*, (Oxford, Blackwell).

78 United States Department of State. (2011). *Chad, Country reports on human rights practices*, United States Department of State, Bureau of Democracy, Human Rights and Labor, Washington-DC.

79 United States Department of State. (2011). *Republic of Congo, Country reports on human rights practices*, United States Department of State, Bureau of Democracy, Human Rights and Labor, Washington -DC.

80 Njikam, O. & Gérard, T. (2010). *Women in informal cross-border trade: evidence from the Central African Region*, in *African Journal of Business Management*, vol. 5, No. 12, pp. 4835-4846. Accessed from: www.academicjournals.org/AJBM.

81 *Ibid.*

82 Simone, A. (2002). *Principles and realities of urban governance in Africa*, UN-Habitat Global Campaign on Urban Governance.

83 Wessels, M., Monteiro, C. (2006). *Psychosocial assistance for youth: toward reconstruction for peace in Angola*, in *Journal of Social Issues*, Vol. 62, No. 1, 2006, pp. 121—139.

84 De Boeck, F. (2011). *The modern titanic. Urban planning and everyday life in Kinshasa*, in Mbembe, A., Allen, L., eds., *The Salon Volume 4*, Johannesburg Workshop in Theory and Criticism. Johannsburg, 2011, Johannesburg: University of Witwatersrand, p.14.

85 African Development Bank. (2011). *Central Africa: Regional integration Strategy Paper (RISP) 2011-2015*, Regional Department Center (ORCE) NEPAD, Regional Integration and Trade Department (ONRI), AfDB and African Development Fund, February 2011.

86 Thorsen, D. (2012). *Children Working in the Urban Informal Economy. Evidence from West and Central Africa*, Briefing Paper No. 3, UNICEF.

87 African Development Bank. (2011). *Central Africa: Regional integration Strategy Paper (RISP) 2011-2015*, Regional Department Center (ORCE) NEPAD, Regional Integration and Trade Department (ONRI), AfDB and African Development Fund, February 2011.

88 Simone, A. (2002). *Principles and realities of urban governance in Africa*, UN-Habitat Global Campaign on Urban Governance.

89 Beeckmans, L. (2009). *Agency in an African city. The various trajectories through time and space of the public market of Kinshasa*, African Perspectives, The African Inner City.

90 *Ibid.*

91 *Ibid*.

92 UN-Habitat (2010). State of the World's Cities 2010/11: Bridging the Urban Divide. Nairobi, 2011.

93 Twerefou, D. (2009) *Mineral Exploitation,*

ENDNOTES

Environmental Sustainability and Sustainable Development in EAC, SADC and ECOWAS Regions, African Trade Policy Centre, Economic Commission for Africa, No79, p. 1.

94 Esso. (2008). *Chad's Oil Revenue*. Accessed from www.esso.com/Chad-English/PA/Files/25_ch13.pdf, on 18 March 2013.

95 UNEP (2007). *Mining and Oil Extraction in Africa*. Accessed from www.eoearth.org/article/Mining_and_oil_extraction_in_Africa, on 23 July 2012.

96 USIP (2010). *Stabilizing Chad: security, governance and development challenges*, United States Institute of Peace (USIP), Peacebrief, October 21 2010.

97 African Development Bank. (2012). *African Economic Outlook. Republic of Chad: Overview*, accessed from www.africaneconomicoutlook.org on 21 March 2013.

98 *Ibid.*

99 UN-Habitat (2010). State of the World's Cities 2010/11: Bridging the Urban Divide. Nairobi, 2011.

100 UNDESA (2012). *World Urbanisation Prospects,: The 2011 revision*. UNDESA). New York. Accessed from: http://esa.un.org/unpd/wup/ on 3 May 2013.

101 Iyenda, G. (2007). *Households' Livelihoods and Survival Strategies among Congolese Urban Poor. Alternative to Western Approaches to Development*, New York and Ontario, The Edwin Mellen Press.

102 Okoli, N.J. (2012). *Effects of globalization on education in Africa 1983-2008*, Academic Research International, Vol. 2, No1, January 2012 Vol. 2, No. 1, January 2012Vol. 2, No. 1, January 2012.

103 *Ibid*. p. 6.

104 UNDP (2012). *Africa Human Development Report 2012 Summary. Towards a food secure future*, New York, UNDP, p.3.

105 UNDP (2009). *Human Development Report*, New York, UNDP.

106 African Development Bank. (2009). *Cameroon: Country Strategy Paper 2010-2014*, Regional Department Center, October 2009, p. 34.

107 Stark-Merklein, B., (2012). Italian Goodwill Ambassador Roberto Bolle highlights malnutrition in Central African Republic, UNICEF, updated 25 May 2012. Accessed from www.unicef.org/infobycountry/car_57045.html on 7 May 2013.

108 Montgomery, M. and Hewett, P. (2005). *Urban Poverty and Health in Developing countries: Household and Neighbourhood Effects*, in *Demography*, Volume 42, No 3, August 2005, pp.397-425.

109 African Development Bank. (2011). *Angola: Country Strategy Paper 2011-2015* and *2010 Country Portfolio Performance Review*, Country and Regional Department – South, ADB, January 2011, p. 15.

110 Médard, J. (2001). *Décentralisation du système de santé publique et ressources humaines au Cameroun*, Bulletin de l'APAD, 21, 2001 accessed from http://apad.revues.org/35 on 07 May 2013.

111 Refugees Studies Centre. (2010). *DRC. Past. Present. Future?* in *Forced Migrations Review*. Oxford University, No36 November 2010, p.46.

112 Parnell, S. & Walawege, R. (2011). *Sub-Saharan African urbanisation and global environmental change*. In *Global Environmental Change*, 21(1): p.6.

113 Parnell, S. and Walawege, R. (2011). *Sub-Saharan African urbanisation and global environmental change*. in *Global Environmental Change,* 21(1): p.1.

114 Vertovec, S. (2007), *Circular Migration: the way forward in global policy?*, Working papers, International Migration Institute, University of Oxford, P.1.

115 Data collected in Brazzaville, Kinshasa and Luanda, July-August 2012.

116 BBC (2011). *Congolese migrants describe horrific abuse in Angola*. Accessed from www.bbc.co.uk/news/world-africa-15297910 on 17 March 2013.

117 Economic Commission for Africa. (2012). *Assessing Regional Integration in Africa (ARIA V): Towards an African Continental Free Trade Area*, ECA, Addis Ababa, 2012, p.69.

118 Vertovec, S. (2007), *Circular Migration: the way forward in global policy?*, Working papers, International Migration Institute, University of Oxford, P.7.

119 Interviews conducted in Luanda by Ngila Ipo, August 2012.

120 Interviews conducted in Kinshasa and Luanda in August 2012.

121 Newland, K., Agunias, D-R, Terrazas, A. (2008). *Learning by Doing: Experiences of Circular Migration*, Washington DC, Migration Policy Institute.

122 Matthew, R. Brown, O. Jensen, D. (2009). *From Conflict to Peace building: The role of natural resources and the environment*. Nairobi, UNEP.

123 Norwegian Refugee Council. (2011). *Democratic Republic of the Congo: IDPs need further assistance in context of continued attacks and insecurity*. Accessed on www.internal-displacement.org/ on 13 January 2013.

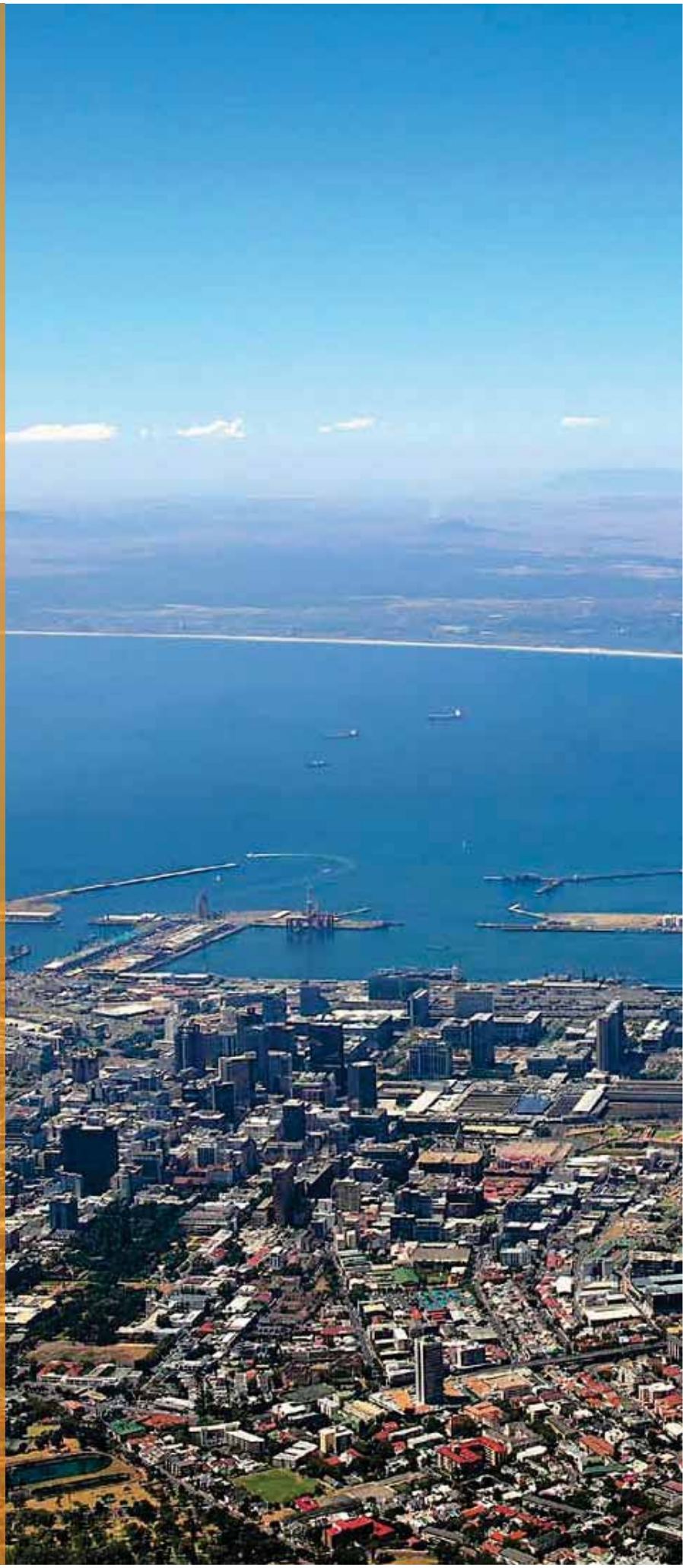
124 *Ibid*.

125 UNHCR (2012). *DRC: Thousands reported newly displaced in North Kivu*. Accessed on www.unhcr.org/50af655c9.html on 10 December 2012.

126 Parnell, S. and Walawege, R., (2011). *Sub-Saharan African urbanisation and global environmental change*. in *Global Environmental Change*, 21(1): p.6.

PART SIX

THE STATE OF SOUTHERN AFRICAN CITIES



Cape Town, South Africa as seen from the top of Table Mountain.
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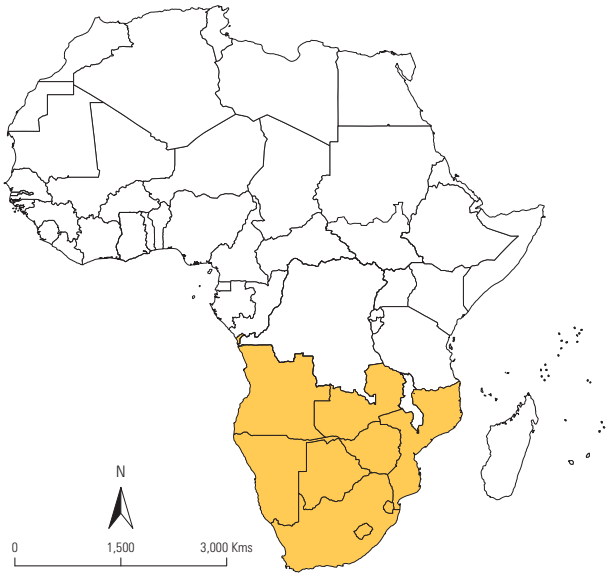
6.1
Population and Urbanization

Hillbrow, an inner city residential neighbourhood of Johannesburg, South Africa is known for its high levels of population density, unemployment, poverty and crime. Licensed under the Creative Commons Attribution-Share Alike 3.0 license.

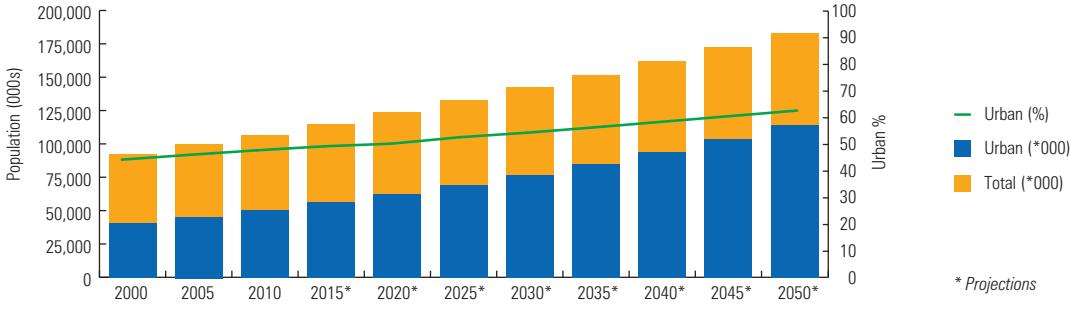
MAP 1.2: **THE SOUTHERN AFRICAN SUB-REGION**



For the purposes of this chapter, the Southern African sub-region includes nine countries: Angola[1], Botswana, Lesotho, Mozambique, Namibia, the Republic of South Africa (RSA), Swaziland, Zambia and Zimbabwe, whose estimated combined population was 108.4 million in 2011. Of these, 52.0 million (48.0 per cent) lived in areas classified as urban and 56.4 million (52.0 per cent) rural (Figure 6.1).

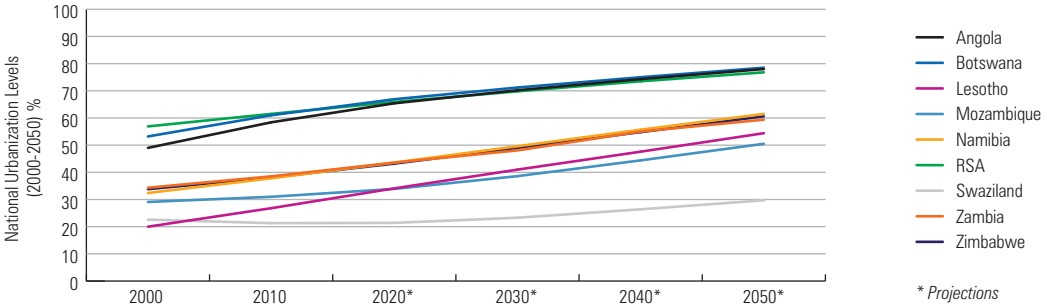
The above sub-regional country listing differs from the geographic classification used by the United Nations Department of Economic and Social Affairs (UNDESA), because for the purposes of this report Mozambique, Zambia and Zimbabwe have been moved from the Eastern to the Southern Africa sub-region. This change was introduced because various political, economic and other factors render this regional rearrangement more realistic and in line with previous State of African Cities reports. Therefore, the UNDESA regional grouping leads to different figures for population and urbanization levels: total population 58.2 million, urban population 34.4 million, rural population 23.9 million and an urbanization level of 58.9 per cent in 2011.

FIGURE 6.1: **SOUTHERN AFRICA POPULATION DATA (2000-2050*)**



Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York 2012.

FIGURE 6.2: **SOUTHERN AFRICA – NATIONAL URBANIZATION LEVELS 2000-2050***



Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York 2012.

TABLE 6.1: **PROJECTED POPULATION DYNAMICS FOR SOUTHERN AFRICAN CITIES WITH MORE THAN 750,000 INHABITANTS**

City	Country	2010 Population (000s)	Average annual Growth rate 2010-25* (%)	% of Urban Population	% of Total Population	Average Annual Population Increase* (000s)	2025 Population* (000s)
Johannesburg	RSA	3,763	1.72	12.3	7.1	64.6	4,732
Cape Town	RSA	3,492	1.71	11.4	7.1	59.8	4,388
Ekurhuleni	RSA	3,357	1.76	10.7	6.7	57.7	4,150
eThekwini (Durban)	RSA	2,954	1.74	9.6	6.0	51.4	3,724
Lusaka	Zambia	1,719	6.89	34.2	13.4	118.5	3,496
Harare	Zimbabwe	1,526	3.54	31.3	12.1	54.0	2,337
Vereeniging	RSA	1,174	1.98	3.8	2.4	23.2	1,522
Maputo	Mozambique	1,132	4.07	15.4	4.8	46.1	1,823
Port Elizabeth	RSA	1,097	1.95	3.6	2.2	21.4	1,418
Matola	Mozambique	759	5.28	10.6	3.3	40.1	1,360

** Projections*
Source: World Urbanization Prospects: The 2011 Revision, UNDESA, New York 2012.

Urbanization Levels (2000-2050)

This sub-region is, after Northern Africa, the continent's most urbanized and projected to reach a region-wide urban majority around the end of the current decade.[2] In 2011,[3] only Angola, Botswana and RSA had urban majorities, with 59.2 per cent, 61.7 and 62.0 per cent populations respectively. Namibia, Zambia and Zimbabwe are projected to reach urban majorities only in the early 2030s, Lesotho sometime around 2044 and Mozambique by 2050. Swaziland is furthest away from an urban majority with a projected 2050 urban population share of 29.7 per cent.[4]

RSA's 2011 total and urban populations (46.6 per cent and 60.2 per cent respectively) heavily dominate the sub-region's population statistics, especially since Namibia (892,000), Lesotho (605,000) and Swaziland (256,000) have total urban populations well below the one million mark.

RSA also dominates the list of the sub-region's cities exceeding 750,000 inhabitants, with four urban agglomerations larger than 3 million inhabitants (Table 6.1). Botswana, Lesotho, Namibia and Swaziland each share similar distributions of their entire national urban populations in five cities of fewer than 500,000 inhabitants.

6.2
Global Change and Implications for Urban Development

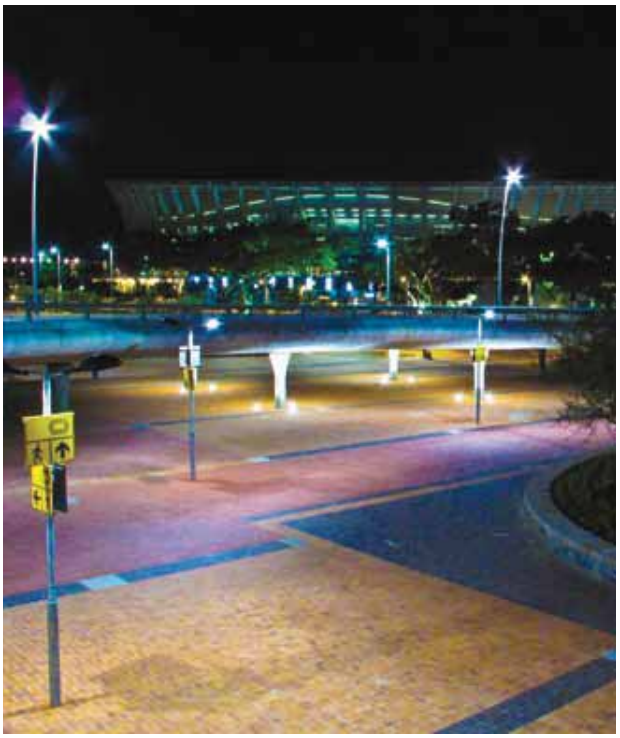
Surveying an open diamond mine in Botswana. The expansion of the mining industry in the sub-region has helped compensate for the general industrial slowdown. **©Trygve Bolstad/ Panos Pictures.**

Southern African Cities in the World Economy

Neither Southern Africa nor Africa in general contributed to the onset of the global financial crisis in 2008 and 2009. However, the crisis has affected the Southern African macroeconomy as a result of the sub-region's intense integration into the world economy. Most conspicuously, falling tourism from the Organization for Economic Cooperation and Development countries and declining demand for manufactured goods, which reduced exports, led to employment losses where alternative markets could not be found. Africans and East Asians now account for an increasing share of total tourist arrivals. The overall macroeconomic impact of the global financial crisis on Southern Africa has been less than during previous recessions. This is largely due to the multipolarity of the world economy today, since China and India now represent major destinations for primary commodity exports. Demand from these two countries, together accounting for about one-third of the global population, remained buoyant. Indeed mineral prospecting and output have led to an expansion of the mining sector across Southern Africa until 2012 and 2013, to a degree compensating for industrial slowdown.

Chinese and Indian resource exploitation contracts have proven somewhat controversial, however, often involving technical and financial aid in exchange but without reference to labour and human rights conditions. Structurally, the mineral sector's buoyancy and the new export arrangements with China and India contribute less to economic development in the sub-region than hoped for due to very limited local beneficiation and failure to develop substantial vertical industrial integration. Some longstanding industries in the sub-region, such as textiles and clothing in RSA, traditionally concentrated in Cape Town, have shrunk in the face of large-scale imports of cheaply-produced Chinese garments since the trade liberalization of the 1980s and 1990s.

Conversely, very few cities in the region have been able to exploit distinctive new opportunities arising from economic globalization through niche marketing. One notable example



▲
The pedestrianised 'Fan Walk' approach to Greenpoint Stadium, Cape Town. The maintenance of new infrastructure for the 2010 World Cup has added an extra burden on local government.
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is Cape Town, where several significant initiatives have become well established. These take advantage of the city's large pool of young, skilled, English-speaking people, especially women. The call centre sector, for instance, employs some 30,000 people in the Western Cape Province (RSA), principally in metropolitan Cape Town. The city is also a hub for creative industries, especially advertising and film-making, supported by the city council's Creative Cape Town initiative. In 2011, Everest Consulting ranked the Western Cape as one of the top three emerging Business Processing Outsourcing destinations worldwide,[5] while Cape Town was designated the world's Design Capital 2012.

A more traditional, resource-based example is Mozambique's capital, Maputo, which has experienced large-scale industrial development since the late 1990s. This followed from the end of apartheid in RSA and that country's membership of the Southern African Development Community, which facilitated development of the important transboundary Maputo Development Corridor.[6] The initial stimulus and anchor project in Maputo was construction of the export-oriented Mozal aluminium smelter. It became one of the city's largest employers (5,000 to 6,000 during initial construction and over 1,000 permanent employees) and has stimulated supply chain development.[7] Associated recent developments have contributed to Maputo's expansion and economic diversification and to the growth of the national economy, albeit in a resource-intensive way that might threaten urban sustainability and access to water by the poor. Cape Town and Maputo have thus experienced different forms of global reintegration after the war and apartheid respectively.[8]

RSA was able to exploit its hosting of the 2010 Soccer World Cup finals through redevelopment of obsolescent stadia, the construction of new ones and associated infrastructure.[9] However, post-event concerns have been raised about the sustainability of many of these highly subsidized investments, particularly maintenance costs of stadia and infrastructure which have created added burdens for local governments. Moreover, basic services are still inadequate and poverty levels high among locals.[10] Three years on, there is still little evidence of the envisaged longer-term boost to employment, infrastructural integration or enhanced urban sustainability in the host cities.

Whereas the precise impact of global trends on individual cities within Southern Africa has varied, the global recession has not substantially dented the sub-region's urban growth rates or changed urban economic structures as examined in the *State of African Cities 2010* report.[11]

Environmental and Climate Change

Southern Africa and its cities are extremely vulnerable to climate change impacts. Temperature increases and weather variability threaten to disrupt systems critical to the survival of its cities, whether directly or indirectly. The sub-region is warming[12] and increased drought is likely to result from this in the future.[13] Moreover, the Indian Ocean has warmed by 1 degree Celsius since 1950, while rainfall has decreased on average throughout the sub-region. Expanding Southern African cities will come under increased pressure to meet rising water demands. This is particularly true for the water-scarce western half of Southern Africa, where water is already consumed unsustainably. Gaborone and Windhoek may potentially experience water supply reductions given their location in semi-arid areas.

While climate change impacts will manifest differently at local scales, a major concern for the Southern African sub-region is that predicted increases in temperature, shifting rainfall patterns and sea level rise will compromise, *inter alia*, food and livelihood security, water availability, human health, vital infrastructure, biological diversity, forestry and agricultural productivity.

It is helpful to distinguish between coastal and inland cities in terms of the principal climate change impacts and vulnerabilities being experienced or expected in future and, hence the priorities for local response formulation.[14] These are inevitably broad categories, with variations likely according to agro-ecological zone, as well as altitude and ocean conditions.

Coastal Cities and Climate Change

For the sub-region's coastal zones, the key long-term impacts of climate change will be sea level rise, besides increasingly severe and possibly more frequent storms and storm surges. Many coastal cities are at low elevation (below

Gaza Province lies in the Limpopo River basin in Mozambique. More than 150,000 people were affected in 2013 by floods in the Province. **©Bita Rodrigues/USAID.**

10 metres above mean sea level), interspersed with lagoons and estuaries, particularly those with important harbour and associated industrial facilities, from Luanda (Angola) in the northwest to Nacala (Mozambique) in the northeast.

This will render important economic and social infrastructures, housing and other facilities vulnerable to periodic damage or inundation, even under moderate scenarios of a 0.5-metre sea level rise. Since the Intergovernmental Panel on Climate Change's Fourth Assessment Report in 2007,[15] the upper limit of possible sea level rise has been increased to about 1.2 metres. In addition, early in 2012, the Panel released a special "SREX" report on coping with extreme events,[16] in which storm surges feature prominently. Changing currents in and around the harbours may also change localized patterns of sand erosion and deposition, perhaps necessitating increased dredging or other measures to maintain navigation channels, over and above the upgrading of seawalls and other hard protective structures.

Low-lying urban areas, and the often poor people who inhabit them, will be particularly vulnerable. For instance, Maputo's low-elevation zones with flat topography are host to large slum concentrations.[17] During severe flooding in 2000, 2 million Mozambicans were affected, with 650,000 forced from their homes – a possible portent of future environmental change impacts.[18] In Beira, saline intrusion could extend tens of kilometres inland; sea level rise might exacerbate this pre-existing vulnerability. Further, in the coastal city of Cape Town, many (especially low-income and informal) neighbourhoods are settled on land vulnerable to flooding from sea level rise. Cape Town is also vulnerable to regular and predictable winter flooding for which authorities remain consistently underprepared, choosing instead to place the responsibility on residents who are unwilling to relocate to urban peripheries where government housing is being provided. The Angolan cities of Lobito and Luanda also have particularly low elevation areas adjacent to the Atlantic Ocean.

Across the sub-region some high-income housing areas, often holiday homes abutting river mouths, lagoons or coastal dunes, are also at risk but their inhabitants are better resourced and politically better connected to local authorities to have preventative and remedial measures taken. Many of these homes have been built in known flood-prone areas, including seasonal watercourses and wetlands, either in violation of planning regulations or having managed to obtain modifications to, or exemptions from, formal codes through personal or political influence or bribes.

Nevertheless, in the long-term, these coastal properties and infrastructures are at great risk from sea level rise and storm surges. Insurance rates increase geometrically after successive flood events, or insurers withdraw from these areas through a new kind of environmental "red lining". The poor generally lack insurance cover, leaving them at the mercy of mutual self-help, official relief efforts and interventions by non-governmental agencies.

Many Southern African cities depend on aquifers for a significant proportion of their fresh water. Already under pressure from possibly unsustainable water abstraction rates to meet the demands of urban growth and industrial expansion, these will become increasingly vulnerable to

seawater penetration as sea level rises and storm surges penetrate farther inland. Cape Town, Walvis Bay (Namibia) and the West Coast corridor are projected to experience the most severe rainfall reductions. Whereas Walvis Bay has long been a world leader in desalinization of seawater, other coastal cities in the sub-region are now beginning to consider desalinization or wastewater reclamation plants or both, where the practicability and cost of developing long-distance water sources are limiting factors. Walvis Bay, on the Namib Desert coast, along with Benguela, Lobito and Namibé in southern Angola, have the added challenges of aridity, indicating that water conservation, recycling and reclamation will become even more important than elsewhere.

Walvis Bay's population increased from 43,600 to 61,300 between the 2001 and 2011 censuses, with a 2012 municipal estimate of 74,000. Current annual water consumption is 5 million cubic metres whereas installed capacity is 7.2 million cubic metres, thus providing some additional leeway for human and industrial growth. However, the town has ambitious plans to become a more diversified industrial hub, despite mixed results from its Export Processing Zone. An awareness of inherent weather variability and likely future environmental change implications of sea level rise, and increasing temperatures for a desert town lying below five metres above mean sea level, has led the municipality to formulate an Integrated Strategic and Spatial Planning Development Framework, due for completion by the end of 2013.[19] Already, the Pelican Point sand spit, which protects the harbour and town from the Atlantic Ocean, has become unstable and is eroding, and storm surges can lead to inundation. The flatness and low elevation of the town created a severe drainage problem in March and April 2011 when unusually heavy rains in the interior turned the normally dry Kuiseb River into a torrent, inundating parts of the town and damaging water supply facilities. Given this context, Walvis Bay has joined UN-Habitat's Cities and Climate Change Initiative.[20] Walvis Bay also focuses on sea level rise as its contribution to ICLEI's Five-City Network to Pioneer Climate Adaptation through Participatory Research and Local Action.[21] Cape Town and Maputo are the other Southern African members of the network. Even in very different agro-ecological zones from the Namib Desert, climate change may hasten threats to future water supply. A very high proportion of Maputo's piped water originates from the Umbeluzi River, rendering the city highly dependent on the river's flow. Contributing to ongoing urban growth, recent large-scale industrial development has increased urban water demand in Maputo substantially. Some private boreholes tap the fairly saline groundwater, with wells and shallow boreholes important in low-income areas not served by the piped water network. Little is known about the likelihood and possible extent of further groundwater salinization but this will surely be hastened if abstraction exceeds natural recharge.

In terms of prevailing temperatures, onshore breezes have a cooling effect only within a limited distance of the coastline. Hence, large cities and metropolises farther inland may experience heat island effects causing residents to suffer greater heat stress, akin to inland cities as detailed below. The plateau suburbs of Luanda (Angola); northern suburbs of Cape Town; Westville to Pinetown (RSA); and areas west of Maputo airport (Mozambique) are cases in point.

A comprehensive study[22] of city-scale climate change and its implications for Cape Town highlighted the complex intersections between urban history and planning legacies (colonial segregation followed by apartheid), sociocultural diversities and socio-spatial differences in vulnerability, resilience and coping capacity, as well as institutional responses. Such an understanding is essential to the formulation and implementation of policies and instruments for dealing with the challenges. The increasing impacts of sea level rise and storm surges underscore the need for ongoing maintenance and strengthening of sea defences in coastal cities once capital investment has been made as part of an integrated strategy.[23]

Inland Cities and Climate Change

The most likely inland impacts will be changing mean temperature and precipitation patterns. As in much of Africa, the dominant temperature trend is likely to be upward and precipitation change downward.[24] The altitude of some of the sub-region's inland cities may have a mediating effect on heat stress if mean temperatures rise, although greater frost proneness may result from the expected trends of greater fluctuations of temperature across the longer term.

Over the course of the 20th century, for instance, despite wide fluctuations, Harare experienced a drop in mean annual temperature of 0.06°C per decade, although there was a rising trend over the final two decades consistent with most other African localities. In Zimbabwe, drought constitutes the largest climate change-related threat to human and ecological sustainability.[25] An average 10 per cent drop in precipitation is projected for Zimbabwe by 2050, which will significantly affect agriculture. Harare's total precipitation fell by 21 millimetres per annum from the mid-1930s, with the lowest total recorded just after the turn of the millennium[26], and it appears that temperature and precipitation may be inversely related in that city. Hydropower from the Kariba Dam supplies 80 per cent of Zimbabwe's electricity. Increased demand for irrigation and power is likely to be deeply affected by the projected 30 to 40 per cent drop in dam yields which, in turn, will have negative implications for sustainability of production and other activities in Harare.

Regional climate change modelling indicated that Gaborone (Botswana) has a 50 per cent chance of a 10 per cent drop in precipitation. If a 10 per cent drop in precipitation occurred, it would result in a 50 per cent drop in surface drainage.[27] Zambia is water-rich with 40 per cent of such resources in the Southern African Development Community region, yet projected climate change will increase summer and decrease winter rainfall, placing existing systems under stress. In Lusaka (Zambia), vulnerability to extreme weather events, such as severe heat, heavy rainfall and flooding, constitutes the main threat to informal settlements, urban agriculture

and peri-urban settlements.[28]

Recent climate modelling data for Johannesburg (RSA) suggest significant future increases in temperature (approximately 2.3°C by 2056-2065 and 4.4°C by the end of the century).[29] Humidity increases are likely to derive from higher precipitation, by up to 40 per cent by 2050 and possibly 60 per cent by 2090.[30] Rainfall in Johannesburg has been very heavy over recent years, and the water table has risen in response, with many adverse effects upon existing infrastructures. Significantly, in a city surrounded by mines, rising water tables increase the risk of acid mine drainage contamination of the water table,[31] or of drinking water sources used by informal dwellers to the south of the city.

Within these inland urban areas, existing "heat island" effects are expected to become generally more pronounced, increasing morbidity and – during extreme heat waves – perhaps also mortality of the elderly, infants and any people vulnerable as a result of malnutrition or other conditions. Urban facilities for the care of such groups are often absent or inadequate, and proactive provision would have major benefits. Many Southern African cities, however, have large green spaces that will mitigate this effect to some extent, especially if appropriate indigenous species are planted to minimize their water use. Good vegetation cover in Southern African cities will play a role in mitigating the effects of rising temperatures, because in a region already characterized by high summer temperatures, even slight increases are likely to place pressure on existing energy supply systems through increased demand for refrigeration and air-conditioning. Low (or lowered) winter temperatures are also a factor, as they place pressure on the existing electricity grid for increased heating of buildings.

Semi-arid Areas and Climate Change

Predicted environmental changes in the region during this century show intensified pressure to maintain adequate potable water and food supplies to towns and cities, particularly those in semi-arid zones, like Bulawayo, Gaborone, Gobabis, Kimberley, Lobatse, Upington and Windhoek. It will be especially necessary to ensure food and water security for poorer residents. Strategies for achieving this will vary but the potential contribution of urban and peri-urban agriculture, especially but not exclusively for the poor, must be recognized and encouraged. Existing policies towards such activities vary from traditional opposition through passivity to positive encouragement (see Box 6.1).

The traditional approach in Southern Africa to water constraints in the face of ongoing urbanization and industrialization has been to rely on massive inter-basin transfer schemes. The Lesotho Highlands Water Project is the sub-region's largest, diverting water from the Maluti/Drakensberg Mountain catchments to the Gauteng metropolis and industrial hub. Apart from the capital cost of such schemes, they reduce water availability in the basins of origin and are likely to need augmentation as new consumption thresholds are reached and supplies possibly become less reliable as a result of changing precipitation patterns. Underlying such policies is an outdated and unsustainable undervaluation of water. Appropriate pricing policies, accompanied by small free basic needs allocations per person, are vital demand management tools that have been implemented successfully in RSA.

Ongoing rapid population growth and industrialization have pushed Windhoek's total water demand to 25 million m^3 per annum. The combined supply from three large networked dams across north-central Namibia (17 million m^3), groundwater boreholes (1.73 million m^3) and reclamation (5.5 million m^3) constitute a total of 24.3 million m^3. This leaves a deficit, larger than apparent, since the combination of reduced inflow, siltation and blue-green algal contamination has been reducing the effective capacity of the large dams. The two small local dams on which the city previously relied are now negligible suppliers. The long-distance Eastern National Water Carrier scheme was constructed to provide Windhoek with water from the Grootfontein area in north-eastern Namibia since the potential for further reservoir construction in central Namibia had been exhausted. However, extending this pipeline to the Okavango River would result in an almost threefold increase in the bulk purchase price of water for Windhoek.[37]

Reclamation is practised in various cities throughout the sub-region's arid zones (e.g. Windhoek and Kimberley) to permit non-drinking reuse of wastewater. The necessity for this is increasing and full recycling to potable water quality – though far more expensive – is also likely to become essential, with clearer limitations (whether through pricing policies or more direct regulation) being imposed on permissible uses for each water type. Rooftop rainwater harvesting might also be encouraged, or even made mandatory in the context of environmental change. Similar issues are being confronted in other sizeable cities in the region's semi-arid zones, perhaps most conspicuously Bulawayo, Zimbabwe's second-largest city, where water shortages have become a regular feature, linked partially to politically motivated central government decisions. The crisis has manifested itself through supply interruptions; efforts within the financial constraints to reduce leakages from the pipe system; and sinking of additional boreholes (including by households able to afford them).[38] Although the political crisis eased under the coalition government from 2008-13, problems remain and overcoming the water shortage will take several more years even if the will and resources are devoted to the effort. Environmental change is adding to the urgency of this situation.

Access to safe drinking water is a basic need and is increasingly being recognized as a right. Current water pricing rarely reflects the scarcity or potential scarcity of this basic resource, so that middle and upper- income residents often consume disproportionately more in their homes and gardens. Experiments in RSA with step tariffs that rise steeply with increasing consumption have demonstrated savings of about one-third overall, which can improve control and redistribute demand.

BOX 6.1: URBAN AND PERI-URBAN AGRICULTURE IN THE CONTEXT OF ENVIRONMENTAL CHANGE

Urban and peri-urban agriculture (UPA) has a somewhat controversial history in Southern Africa, largely because it was deemed inappropriate under colonial town planning codes. This ethos has persisted long after independence, especially in former settlement colonies. The rationale for its prohibition was that agriculture is a rural activity and had no place in urban areas. Intensive smallholder commercial market-gardening on the urban fringe or surrounding peri-urban zones, however, was often permitted. With urban growth, such areas were generally converted to higher-value urban land uses, with cultivation moving outwards.

Occasional exceptions exist, such as Philippi on Cape Town's Cape Flats which, because of complexities of land tenure arrangements, fertile soil, land-use zoning and apartheid racial segregation, has survived to this day as a designated horticultural area.[32] The Philippi Horticultural Area has been surrounded by dense shanty settlements since the 1990s, and there are increasing concerns about possible groundwater contamination from untreated sewage and nearby factories' effluent.

Ironically, just as the pressure on such areas reaches unprecedented levels, their importance is also becoming greater than ever. These areas promote local self-reliance; reduce food miles and hence the cost involved in long distance transport of food; provide local employment among groups with high unemployment and underemployment; and also contribute towards carbon sequestration to help mitigate greenhouse gases.

In Harare, despite longstanding illegality of urban cultivation, since the 1950s women have used it as a necessary survival strategy and also as a way of resisting patriarchal control within their families. Reflecting dominant social norms and gendered divisions of labour in Southern Africa, the majority of Harare's urban farmers today remain women. The deepening of Zimbabwe's economic crisis since the 1990s was mirrored in the expansion of UPA in Harare and other towns. In 1990, UPA was undertaken on 8 per cent of the city's land; this had risen to 16 per cent by 1994 and 21 per cent by 2001. Before mass evictions through Operation Murambatsvina in 2005, UPA increasingly became the principal survival strategy, with significant nutritional and economic benefits to low-income farmers and their families. No reliable subsequent data on the current extent of UPA are available.[33]

▲ Philippi, Cape Town. **©IPS Africa**

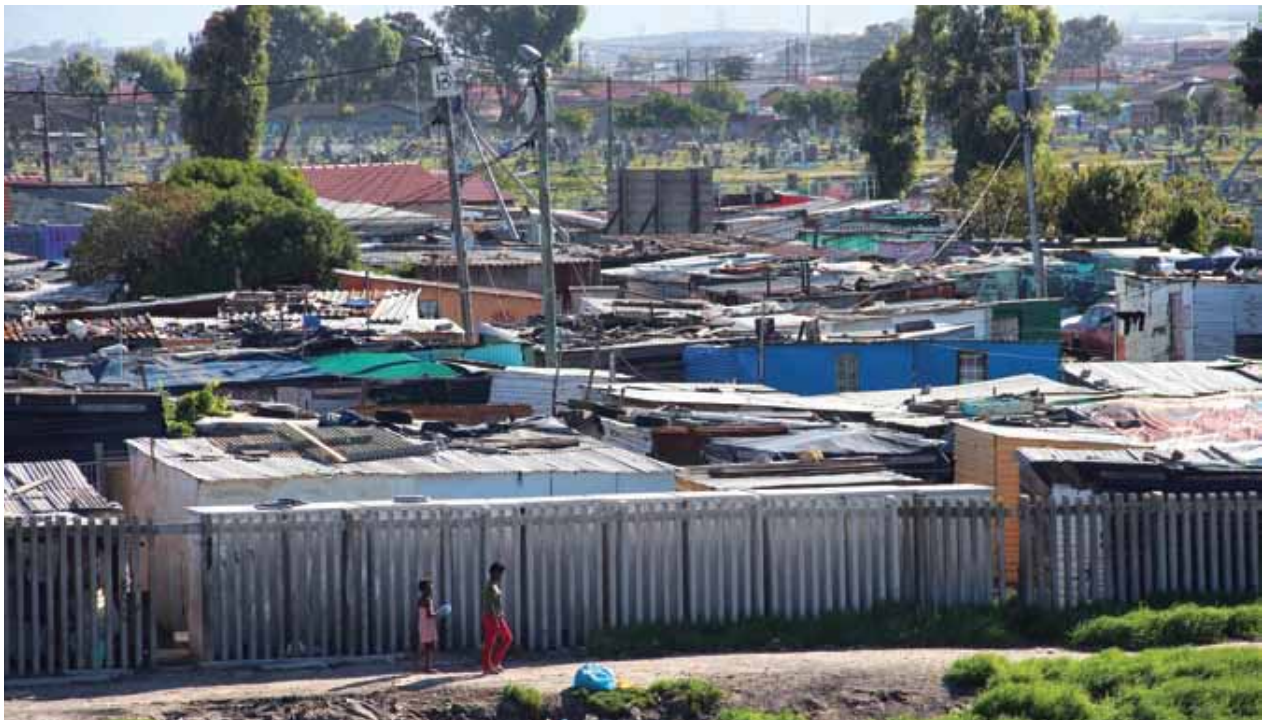
Growing awareness of the importance of local or proximal urban food production has led to a reappraisal throughout the region. UPA is now beginning to play a multifaceted role with the added contribution of improved nutritional status for the urban poor. The precise mix of interventions varies among towns and cities. In some cases, previous policies that prohibited subsistence cultivation are being relaxed and unused public land is being made available for cultivation. "Kitchen gardens", long encouraged for nutritional and supplementary income reasons by welfare projects in high-density low-income areas, are now being more widely promoted.

Symbolically, at least, perhaps the most dramatic evidence of this new policy direction is the active encouragement of roof gardens by municipal authorities including Harare, Johannesburg and eThekwini (Durban), as part of city greening initiatives. In Johannesburg this was launched as part of the Gauteng Response Strategy to Climate Change.[34] Demonstration sites, practical aid and training are sometimes provided, including for produce marketing. In some cases, changes to municipal by-laws and planning regulations are needed, while in others, blanket exceptional permissions for particular categories of cultivation have been granted.

In Maputo, most urban agriculture is undertaken by poor migrants in low-lying river floodplains, but frequent flooding in recent years has been a major obstacle to its further development, with the result that some 90 per cent of the city's poor remain food insecure.[35] Urban agriculture's potential contribution to household food budgets among poorer communities in Lusaka has also been inhibited by environmental change. The precise impacts of climate and environmental change on food security will depend, however, on the relative importance of UPA to individual households and their portfolio of assets and degree of resilience.[36]

In some contexts, water polluted by industrial effluent (especially toxins and heavy metals) is used for irrigating UPA, causing justifiable health concerns. If safer grey wastewater is not available as an alternative, urban farmers will need help to ensure that water reclamation, to acceptable health standards, is made possible so that use of potable water is minimized. Similarly, organic UPA has considerable potential to reduce food waste going to landfill, and also to utilize safely treated manure and human sewage as fertilizer. These issues, along with evidence from Maputo, Lusaka and elsewhere of the negative impacts of weather and climatic variation, sound a note of caution against viewing UPA as a panacea in promoting food security in the context of environmental change. However, UPA certainly has a role as a contributing element in multifaceted approaches to environmental change mitigation and adaptation, towards reducing poverty, malnutrition and food miles.

6.3
Urban Social and Environmental Vulnerabilities



A view over part of Valhalla Park in Cape Town, South Africa. The urban poor contribute less than their wealthier neighbours to climate change and yet suffer the most as food and energy prices soar. **©Lindsay Mgbor/UK** Department for International Development.

With per capita greenhouse gas emissions comparable to many developed nations, RSA occupies an ambiguous position in the North-South debates as both climate change perpetrator and victim.[39] Although industrialized nations clearly have a critical role to play in mitigating greenhouse gases and while adaptation should be the key priority for Southern African cities, expanding urban centres such as Gaborone, Harare and Maputo are generating increasing carbon emissions through their various energy intensive activities and they too need to accept a role in mitigation. Some local governments are beginning to recognize this.

However, increasing aggregate emissions data hide the vast gap between the rich and poor, as well as between racial and ethnic groups. These are due to historically entrenched inequalities in terms of responsibilities for emissions, as well as income disparities.[40] Generally, the poor majority in Southern African cities use much less energy and generate fewer carbon emissions per capita than middle-to-upper income citizens with access to private vehicles, air conditioners and other energy intensive luxuries. Poor urban households in RSA can spend up to 75 per cent of their budgets on food and energy alone. Higher climate variability is expected to affect energy costs, as well as introduce more variability into the global food supply due to the increased vulnerability of agricultural systems. As such, climate change threatens to impose "double squeeze" effects upon the food and energy sectors. This threatens to cripple low-income and poor urban households, which are already vulnerable to current levels of uncertainty.

Climate Change and Social Vulnerabilities in Southern Africa

As urbanization levels continue to rise, Southern African countries increasingly concentrate their social and environmental vulnerabilities to climate change in urban areas. The formulation and implementation of effective climate change mitigation and adaptation strategies, depends on adequate understanding of the underlying sociocultural,

political and economic drivers and processes, as well as how to deal with these. However, much less is known about social dimensions of climate change than projected biophysical impacts and proposed technocratic and scientific solutions, which have received the majority of research attention and funding. Consequently, existing policy responses may overlook critical vulnerability drivers and potential facilitators for climate action.

Major urban challenges for human security in the context of climate change relate to the provision and maintenance of institutional and infrastructural integrity, extents of urban ecological footprints, high toxin and pollution levels, and protecting livelihoods, economic activities, buildings and utilities from mounting multilevel hazards and risks.[41] Further, violent conflict is damaging to human and social capital and leads to internal displacement and refugees. In Angola and Mozambique post-conflict communities have been left highly vulnerable to climate hazards and shocks as a result of reduced access to resources, reduced productive capacity of households and loss of assets.[42] Additionally, large tracts of land in Angola, Mozambique, Namibia and Zimbabwe are unusable due to landmines, thereby worsening urban food security challenges, as rapid urban population growth in Southern Africa is intensifying pressures on rural productivity.

In Southern Africa, environmental considerations are often viewed as conflicting with pressing development priorities and human rights, rather than a critical underpinning thereof.[43] This viewpoint is largely rooted in long histories of racially and politically based environmental marginalization, with vulnerable and marginalized communities suffering land and livelihood losses in the name of environmental protection. While the counterproductivity of this viewpoint is starting to be realized, the perceived "environment versus development" trade-off remains widespread because of political pressure to prioritize employment creation, even at the cost of environmental damage. Therefore, the key challenge is for climate change adaptation to be recognized as co-dependent with development (including poverty alleviation and economic growth).

▲ Using rats to locate land mines in Mozambique. The large tracts of land which cannot be cultivated puts extra pressure on urban food security. **©Xavier Rossi/Apopo**

Disproportionate focus has been, so far, on climate change impacts and vulnerability reduction strategies skewed towards rural concerns, mostly regarding agricultural productivity. At the same time, inadequate thought has been given to the problems of escalating urban poverty and significant inequalities, increasing crime and widespread insecurity. Southern Africa's increasing urban locus brings with it unprecedented challenges and implications for which governments and citizens are inadequately prepared. Despite such challenges, governing in the context of climate change presents unique opportunities to rethink current development paths, improve sustainability and attend to current injustices that pervade Southern African cities.

Climate Action: The Role of Local Authorities and Multiscalar Governance

Climate action should be multiscalar and multidimensional. Hence effective intervention requires multilevel governance. This implies genuine horizontal and vertical collaboration between all levels (as opposed to mere interaction). However, complex political systems, combined with contested power relations, as well as resource and responsibility distributions within and between the respective institutions, create immense challenges to the realization of such collaborative governance.[44]

Governments in Southern Africa have started to make progress in developing roadmaps for climate action through National Adaptation Programmes of Action or National Climate Change Response strategies (Angola, Mozambique, RSA and Zambia being some of the forerunners) as well as other frameworks that deal with climate change adaptation, mitigation and vulnerability reduction. Nevertheless, these are still in their infancy, with many roles, responsibilities and specific plans of action to be finalized and implemented.

While most recent national policy developments have been participatory to varying extents, local government representation has been inadequate, thereby missing vital practical input from the local-government arena. Several Southern African governments have focused their climate change agendas strongly on agriculture.[45] Other dominant priority sectors include water, human health, disaster risk management and ecosystems. What remains lacking in many national level climate action policies are *urban-specific* considerations and clear focus on the interdependency of rural and urban systems. For instance, the 91-page Angolan National Adaptation Programme of Action has just one page of very general text on urban impacts of climate change.[46]

Effective responses to the climate challenge require urban governments to be more accountable, to be effective in leadership and resource management, and to develop

BOX 6.2: **ETHEKWINI MUNICIPALITY – A SOUTHERN AFRICAN LEADER IN CLIMATE ACTION AND ECOSYSTEMS-BASED ADAPTATION**

The Priority Zone Headquarters building in the eThekwini Municipality incorporates harvesting of the sun's energy for electricity and geysers, rain water collection, worm farms, vegetable tunnels, food landscaping, a green roof, and a recycling programme. **©Drake & Scull Facilities Management (DSFM)/Priority Zone.**

Environmental mandates introduced over the past 17 years in RSA, have put greater emphasis on local level environmental management.[50] While there have been mixed responses and prioritizations of environmental issues and management at municipal scales across the country, eThekwini (formerly Durban City Council) created its environmental department in 1994. In this same year, ahead of other Southern African municipalities, eThekwini became the first city in RSA to accept the Local Agenda 21 mandate as a corporate responsibility and became affiliated with ICLEI (Local Governments for Sustainability). eThekwini Municipality, specifically the Environmental Planning and Climate Protection Department , has increasingly engaged with climate change issues.

Climate change has emerged as a strategic issue characterizing the municipality's short to medium-term plans. The eThekwini Integrated Development Plan includes the requirement for the development and implementation of a Municipal Climate Protection Programme.[51] The Environmental Planning and Climate Protection Department and the eThekwini Energy Office are leading the development of a citywide "Durban Climate Change Strategy"[52] that aims to guide mitigation and adaptation to climate change for the entire city across multiple scales. The cross-sectoral and interdependent nature of adaptation and mitigation are strongly emphasized in the development of the city's climate change strategy. The municipality has shown strong recognition of the centrality of the meaningful involvement and influence of grassroots actors for the development of contextually appropriate measures.

eThekwini has initiated a "Climate Smart Communities" pilot project that focuses on community-based adaptation. The project includes social assessments of the suitability of replacement crops necessitated by anticipated declines in maize yields.[53] The municipality's other climate change initiatives include, but are not limited to, water loss management and urban agriculture programmes, community reforestation projects, a green roof pilot project on a municipal building (see Urban and peri-urban agriculture case study), and the greening 2010 campaign, which saw eThekwini endeavouring to offset carbon emissions from the 2010 FIFA World Cup Soccer events hosted in the city.[54] In December 2011, eThekwini hosted the United Nations Framework Convention on Climate Change COP17 global climate change summit, where the Durban Adaptation Charter[55] for local governments became the key output of the Durban Local Government Convention (run in parallel to COP 17).

A major feature of eThekwini's environmental agenda is the Durban Metropolitan Open Space System, a multipurpose network of approximately 74,000 ha of open space and watercourses which, as a layer that overlies the town planning scheme zoning, has legislative authority. In order to develop land zoned within this open space system, environmental support or authorization needs to be obtained from the Environmental Planning and Climate Protection Department.

Linked to this green network is eThekwini's emerging ecosystem-based adaptation approach. This approach promotes "green/natural" infrastructure as supporting core functions for climate change mitigation and adaptation through, for example, ecosystem services, water supply and regulation as well as soil erosion control.[56] The approach also seeks to highlight critical interdependencies between climate action and development. Demonstrating high replacement values of green open spaces is arguably important for raising the profile of "green" issues on political and local community agendas.[57] If supported by local communities, the ecosystem-based approach can result in communities ascribing increased value to, and maintaining, ecosystem services, which in turn can support community-level resilience to disasters (e.g. restoring wetlands for moderating flood events). "Community Ecosystem-based Adaptation" is an approach adopted in Durban. The approach aims at uplifting local communities by creating "green" jobs for the poor and unemployed, restoring the ecosystems that are important to the welfare of these communities while reducing the collective vulnerability to climate change.

There are key lessons from eThekwini's pioneering approach to green infrastructure and emerging ecosystem-based adaptation approach that can be shared with Southern African cities in efforts to support adaptation and sustainable development at the city scale – akin to what is happening in Cape Town[58] – and beyond.

Sources: *Roberts and Diederichs (2002); Roberts (2008); Roberts (2010); ASSAf (2011); Cartwright and others (2012); Roberts and others (2012); Carmin and others (2012)*

contextually appropriate climate policy, which requires meaningful citizen participation.[47] Maputo was one of the first four pilot cities within the United Nations Human Settlement Programme's (UN-Habitat) Cities and Climate Change Initiative. Several Southern African cities such as Cape Town, eThekwini (see Box 6.2) and Maputo have emerged as climate leaders through initiating anticipatory climate change adaptation (and sometimes mitigation) plans ahead of, even in the absence of, national level instruction, support or policy. Nevertheless, considerable barriers to urban climate actions remain and many local authorities are battling to move their climate action plans beyond the starting blocks. Commonly, Southern African cities with climate action plans (e.g. Cape Town, eThekwini, Maputo and Walvis Bay) have emphasized mainstreaming to encourage understanding of climate change action as a cross-cutting developmental issue rather than as one being solely environmental. Therefore, the aim is to support the strategic immersion of climate change into existing development pathways instead of it being seen as an "add on", thus risking being sidelined.

For such mainstreaming to be effective, decision-makers and politicians need first to comprehend and then promote climate change as an issue inseparable from achieving development goals. To facilitate this, cities such as eThekwini and Cape Town have emphasized the critical role that "green" or "natural" infrastructure plays in supporting citywide development. This is an excellent example of greening the city and economy synergistically (see Section 6.6). Mainstreaming environmental change and vulnerability reduction strategies is also hampered by the persistence of "silo" (sectoral) approaches within local government where the tendency is to focus on departmental mandates with weak inter-departmental collaboration.

While national budget allocations for city-scale environmental plans and projects remain low, certain metropolitan municipalities have formed strategic relationships with international organizations for environmental change initiatives. However, more consistent and long-term budget allocations are required from national governments across the Southern African region. Since socioecological systems and environmental change impacts do not correspond to municipal boundaries, they can be tackled effectively only through collaborative and cooperative governance within broad city regions. Increased horizontal collaboration between municipalities, especially bordering municipalities, is therefore advisable. Collaboration between adjacent municipal authorities (applying integrated metropolitan approaches that transcend administrative municipal boundaries) has not been adequately recognized by all local urban authorities and incorporated into local climate action (see Box 6.2). In an attempt to transcend municipal administrative boundaries, Gauteng Province and the adjacent Johannesburg, Ekurhuleni and West Rand District Municipalities collaborate within the framework of the Johannesburg Metropolitan Municipality.[48]

Horizontal collaboration is also challenged by diversity in core municipal features and functions, unequal skills and technical capacity, complex governance structures and weak political support. This is often exacerbated where different political parties control the respective municipalities. There is a long history of weak communication and integration between and within local government bodies, as well as between local, provincial and national government tiers in Southern Africa. This needs to be overcome through fostering multilevel approaches. This notwithstanding, there are a few promising examples that do emphasize collaboration. An example of this is the Southern African Regional Climate Change Programme, developed to support transboundary responses to climate change within Southern Africa, including information sharing and developing specific regional research plans.[49] This project is still in its early stages, with its effectiveness yet to be established, while the transboundary emphasis at the regional scale has not been adequately translated to provincial and local government scales.

Importance of Political Will and Leadership

Political will and leadership (climate change champions), especially that of local politicians, are important drivers of climate change adaptation and mitigation at all scales. In Cape Town, eThekwini, Maputo and Windhoek, key individuals and specific departments within local authorities have acted as catalysts for climate awareness-raising and action. However, wider institutional backing is required for these to become embedded in institutional cultures and practice. Where they exist, urban environmental departments (e.g. Buffalo City, eThekwini, Johannesburg and Walvis Bay) have typically taken the lead in climate action, with other departments increasingly assigned responsibilities. However, weak formal and sustained cross-departmental harmonization hampers coordination and streamlining of actions for a united urban-wide campaign. Inadequate political will, understanding and support for climate agendas plays a key role in this,[59] since climate change concerns still remain marginal to politicians and authorities compared with other pressing concerns. Where politicians adopt a short-term focus on budgets and delivering visible impacts, this leads to trade-offs with longer-term investments and projects required for progressively tackling urban climate change issues.

Traditional leaders are also vital actors within Southern African governance systems. Despite ongoing shifts in their responsibilities and extent of trust and faith by local communities, traditional authorities retain a strong influence over African communities, including in peri-urban areas. Without the support of traditional leaders, climate change adaptation and mitigation measures are unlikely to succeed.

Differential Social, Environmental Vulnerabilities within Southern African Cities

Differential vulnerabilities are most pronounced between different socioeconomic groups. These disparities often occur in very close proximity with wealth and poverty existing "cheek by jowl" in Southern African cities.[60] The racially segregated spatial patterns stemming from colonial and

apartheid policies persist today with added socio-economic class-based segregation, affordability being a major constraint to residential mobility.[61] While racial dimensions of uneven urban development are blurring slowly, spatial segregation and social inequalities are likely to be a persistent feature of Southern African space economies as these are compounded by financial challenges to housing, service delivery and land availability.[62] Historically in Southern Africa, poverty has been more severe in rural areas but is now increasingly concentrated in the urban setting.[63]

Much vulnerability stems from the conditions of the built environment and associated service and infrastructural deficits facing poor residents in particular. Differential vulnerabilities between urban communities and individuals are shaped by age, gender and class characteristics, as well as wealth, access to resources and basic services. They are constantly shifting conditions, caused by multiple stressors and pathways[64] with climate change one of many (albeit pivotal) stressors facing society.

Key government strategies in the sub-region tend to focus on eradication of slums, rather than working with residents of informal settlements to provide critical services and information on reducing flood, fire, disease and other risks. These residents are then relocated, often to city peripheries, further isolating them from employment opportunities, services, social care and networks. This strategy is linked to prevailing viewpoints held by many local politicians and city government personnel that the poor and their informal settlements are the key problem rather than the underlying structural inequalities and government failures to adapt city economies, labour forces and development trajectories and provide alternatives.

The poor, vulnerable populations, women, young children and the elderly are often most at risk, yet the underlying reasons for these specific vulnerabilities are still inadequately attended to in climate policy and actions. Most Southern African cities have disproportionately young populations; often with people under the age of 18 years making up to half the total population. The young groups' disproportionate vulnerabilities to hazards (e.g. heat stress and disease) are caused by underdeveloped immune systems, inexperience and limited response capacities (in comparison to more mature adults); and are combined with vulnerable and insecure living conditions and underdeveloped urban health infrastructure.[65] An increase in child-headed households and street children (notably in Harare and Maputo) also exacerbates children's livelihood insecurities.

Growing urban youth unemployment is a major development challenge in Southern Africa. While governments have made considerable strides in improving education, especially for females, there are still high drop-out rates due to financial difficulties and increased household responsibility for young people due to family illness. Further, there is widespread inadequate employment creation to meet the demands of educated youth, leaving livelihood securities severely compromised.

In addition to disaster risk, the poor are most exposed to diseases due to poor living conditions, low access to medical care and other critical deficiencies. HIV/AIDS remains the biggest health and development challenge across Southern African cities. For example, Lesotho has an estimated 23.3 per cent HIV/AIDS prevalence rate with over 360,000 orphans (out of an estimated 1.8 million population, of which approximately 27 per cent is urban) due mostly to parental deaths from the disease.[66] While some countries have shown a stabilization or decline in infection rates in recent years, the pandemic has severely compromised human development in many Southern African countries.[67] As food security, health and other critical livelihood challenges increase with expected climate change impacts, these social vulnerabilities will become increasingly pressing issues on government agendas.

Gender roles are often still embedded within traditional cultural and belief systems.[68] Gender-related roles regarding household decision-making, dominant catalysts for change in households, and responsibility for household chores are factors which strongly influence household responses and, by extension, vulnerability to climate change.[69] For instance, many women residing in semi-urban areas in RSA spend over two hours daily collecting water and another hour collecting fuel.[70] As predicted increases in temperature and increased rainfall variability begin to affect crop yields and water availability adversely, these activities will become even more cumbersome, with the greater burden falling on women and girls.

African urban poor, specifically youth and women, have not yet been given adequate opportunity for meaningful participation and representation in vulnerability and disaster risk reduction strategy development. These issues require urgent attention by urban governments and other role players.[71] Access to strong social networks and other forms of social capital potentially play a key role in reducing the disproportionate vulnerabilities, since such attributes underpin the social dimension of a city's capacity to adapt to environmental risk.[72] While there are certainly examples of strong social capital within Southern African cities, the higher general vulnerability of marginal urban poor groups can often be attributed to weaker social and economic support networks than those available to their rural counterparts.[73]

In summary, societies within different urban areas are highly diverse in terms of conditions, needs and characteristics. These specific conditions must be accounted for in climate change research projects and policy frameworks. Therefore, while there is considerable value in drawing from experiences and lessons from a range of contexts within and beyond Southern Africa, importation of "blue print" approaches for social vulnerability reduction and adaptation without context specific adjustments should be avoided. Social vulnerability can be overcome only when the proximate (e.g. income level, location, and housing structure) and underlying multiple structural causes (e.g. the wider political economy and government policies) are understood and dealt with.

6.4
Urban Planning and Resource Management

Klein Windhoek, an upmarket suburb east of Namibia's capital. **©Chtrede.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

Overcoming Inequalities and Vulnerabilities

Apart from Zimbabwe, the countries of Southern Africa have undergone widespread liberalization, deregulation and privatization, which are reflected in the spatial geographies of their cities. Angola, Botswana, Mozambique and RSA have led the charge on opening up their economies to foreign direct investment. As a result, private sector-led development and service provision within cities has expanded. In the Southern African sub-region in general, public-private partnerships also play a key role in determining how urban land-use management and infrastructure choices, as well as service provision are made.

Land administration in Southern Africa is generally conducted within western (ex-colonial) systems and customary formalized systems of indigenous origin, reflecting divisions between civic settler rights and native customary rights.[74] Spatially, this means that colonial-era settler urban areas and modernized urban spaces fall under formal land administration systems, while areas populated largely by poor and low-income indigenous African residents fall under informal land management systems. A brief account of some of the cities and countries in the Southern African region is presented below.

Angola

In Luanda, rural-urban migration, due to the 1975-2002 civil conflict, has been high. Luanda is one of the larger cities in the region, with a population of around 4.79 million,[75] housing around 25 per cent of Angola's entire population. Demand for housing and conflict over land rights are consequently very high, with 76.6 per cent of buyers originating from other municipalities in the Province of Luanda.[76] In Luanda, high levels of privatized urban development and land management and high economic growth from oil wealth have been used mainly to benefit elites. Private developments for wealthier residents prevail with heavily securitized enclaves catering for a relatively small group (see Box 5.2).

Bairro Marçal, a musseque in Angola's capital Luanda. **©Fabio Vanin.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

More than three-quarters of Luanda's residents live in informal settlements known as *musseques.* In these settlements inequality levels are extremely high, reflecting the diminished role of the state as an effective administrator of the considerable national wealth for the public good. Peripheral *musseques* constitute Luanda's largest settled zones, accommodating over 4 million people and creating, after Kinshasa (Democratic Republic of Congo), the largest continuous slum area of Africa.

The vast majority of land acquisition and financing occurs informally. For the majority of urban dwellers, tenure is insecure. Financing is difficult to obtain through formal institutions and, according to Amnesty International,[77] thousands of families have been subject to violent forced removal between 2001 and 2006, and again in early 2013, without notification or consultation.

Informality dominates with more than 60 per cent of Luanda's residents informally employed. Landownership and management is constitutionally assigned to the state, as affirmed by the Land Law of 2004.[78] The state has embarked upon a social housing programme to eliminate *musseques*. It seeks to achieve this in cooperation with communities through self-help construction programmes of around 685,000 houses.[79] To what extent, if at all, the design and implementation of these programmes will reflect predicted environmental change is unclear.

Mozambique

Located on a coastal estuary, informal settlement and land acquisition in Maputo occur mostly in peri-urban rural land and on land unsuitable for formal housing (e.g. low-lying coastal wetland and estuarine zones and flood plains). Formal land markets cater mainly to the wealthy, leaving the urban poor to acquire unregistered land and housing through informal processes.[80] The dependence of fish life-cycles on estuarine water quality and mangrove forest habitats is threatened by the encroachment of informal settlements and use of mangrove for fuel-wood as well as for construction. The absence of effective land use management and planning systems to meet the needs of the largely informal, poor urban dwellers of Maputo may ultimately hinder its own capacity to sustain crucial and ecosystem-dependent industries, such as fishing and tourism.

Botswana

Land management and administration are largely state-run in Botswana which, being a relatively wealthy nation with a small population, has been able to deliver housing to all income groups with some success.[81] In 2010, Botswana's real gross domestic product (GDP) growth rate was 7.2 per cent and per capita income was USD 7,824.[82] Since Gaborone is surrounded by commercial farms and tribal areas, land acquisition for housing development is sought from these

Maputo, Mozambique. **©Hansueli Krapf.** Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

two sources. Central government retains its role in policy and administration[83], despite the establishment of tribal land boards to administer such lands. New informal settlement formation activities are not tolerated.

Lesotho

Maseru, the capital of Lesotho, is surrounded by villages and informal settlements that have developed on former agricultural land held under customary tenure.[84] Around 70 per cent of land transactions are informal and the incursion of such settlements onto agricultural land has been met with intolerance from formal institutions. Legislation in 1980 (derived from the Land Act of 1979) essentially gave the state control over all land, and rights have to be leased from the state.[85]

RSA

RSA has many large cities with relatively low shares of slums and informality in comparison with many sub Saharan countries (see Figure 6.4). However, it also has the highest levels of inequality in the world[86] and protests over service delivery, especially in cities, are commonplace (see Text Box 6.3). High levels of inequality, slow land reform and the legacy of apartheid combine to foster marginalization among the largely indigenous African urban poor. Cities in RSA dominate migration absorption from the rest of the region, both from the country's rural areas as well as from other African states south of the Sahara. Between 1996 and 2006, access to urban land through informal settlements and backyard structures grew by 26 per cent.[87] This trend continues despite widespread programmes to return land to those dispossessed during apartheid, as these programmes have been slow to take meaningful effect.

In RSA, spatial development frameworks are the main land use planning tools, with the goal of actualizing integrated development.[88] Land use management is largely formal, except in the case of informal settlements and where slum urbanization occurs in the city. Nodal and corridor spatial developments are prioritized in these spatial development frameworks. Integrated development plans, which take place at local ward, municipal and magisterial district levels, prioritize development programmes and budget allocations. Integrated development plans fuse bottom-up needs directly into top-down planning instruments such as spatial development frameworks. This vertical integration is often fraught with challenges but remains a first step towards integrating different levels of government, as well as having the potential for improvement over time. Despite deployment of planning instruments, urban sprawl and discontinuous piecemeal development has largely characterized urban change in RSA over the past two decades. Inner city slum formation and decay further exacerbate sprawl and

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decentralization of key functions outside the country's city centres. Businesses have migrated to satellite nodes and urban development corridors.

RSA's extremely high level of inequality is reflected in the urban spatial form and in high levels of securitization with the proliferation of strip malls, gated entertainment zones and gated townhouse developments.[89] These gated developments comprise barbed and electric wire fenced residential premises that are heavily subscribed to local armed private sector security agencies.[90]

Urban management services are often privatized in RSA cities, for example, through water and energy utility companies. Further, city improvement district management companies frequently act as service delivery integrators by contracting public and private sector entities directly, to ensure that specific issues are dealt with. City improvement district management agencies thus help wealthier areas gain priority access to service providers. In contrast, poorer city neighbourhoods are characterized by social housing areas, informal settlements and slums, where policing is often conducted through some form of community forum at best, or by local youth gangs and mobs at worst.

Key issues for urban planning and governance

Urban planning efforts in Southern African cities face key challenges that relate to sprawl; substantial housing backlogs; poverty and inequality; segregation; slum and informal settlement proliferation within city centres and on the urban peripheries; and inadequate infrastructure as well as service provision. In turn, these have consequences for current urban governance regimes in the sub-region. These revolve around ensuring democratic participation; alleviating poverty and inequality; improving urban service provision; overcoming patterns of urban segregation; mitigating xenophobia and anti-migrant sentiments; coping with local unrest; achieving cohesion between dual formal and informal systems of governance, trade, service provision (e.g. transport); and improving the fiscal autonomy of local governments.

Sprawl

High levels of sprawl in Southern African cities reflect lack of land-use planning and management. Sprawl generally increases costs of services and of goods such as food. Ultimately, these culminate in higher costs to households and businesses. Compact, medium to high-density settlements

are more sustainable in use of resources as well as waste and emission profiles. Furthermore, sprawl is characterized by the formation of slums and informal settlements on the peripheries of Southern African cities, and in some cases also within the city centre. There are diverse consequences of sprawl for urban governance in Southern Africa. These include increased costs of administering electricity, waste management, water and transport services through centralized systems, and that local authorities are "playing catch-up" with urban spatial evolution and the socioeconomic dimensions of informality in Southern African cities.

Infrastructure and Services

Infrastructure and service delivery deficits are significant contributors to poor living conditions in Southern Africa and service delivery protests in low-income and poor neighbourhoods have become a regular feature. The need for reasonably priced, integrated services and infrastructure provision remains a key challenge for city governments, which often have less control and power over privatized infrastructure and service delivery agencies. City governments and municipalities increasingly have to cater for the often sensitive and nuanced interplay that unfolds between their motives to act in the public good and for private entities to survive in the market. Central governments have a key role to play in this respect, since they have the financial and political power to drive agendas that serve the sustainability of the whole city system and strengthen its adaptive capacity. The diversification of service delivery and infrastructures through decentralized governance systems and technologies (e.g. renewable energies) holds significant potential in Southern African cities. In this respect, policy, regulatory and legislative instruments that inform the governance of urban systems require revision in the sub-region, so that the absorption capacity of cities to alternative infrastructure and service offerings is improved.

Municipal Revenues

Informality and lack of planning mean that municipalities are unable to levy land and housing rates. This affects the ability of municipalities to respond to current and future developmental challenges, thereby undermining urban sustainability. Municipal financial instability affects management and planning policies and practises of cities. Increases in rate collection for land and housing have unfolded over recent years but revenue collection still remains weak overall in the sub-region[91]. Improved institutional systems may have contributed to this increase. The Lusaka City Council reported a 14 to 83 per cent increase in municipal revenue collection, as a percentage of budgeted revenue, between 2003 and 2005. This increase was due to improvements in "resource mobilization, budgetary performance, and management of financial resources" as well as "computerization and capacity-building in the Finance Department".[92] Improving municipal revenue collection is a key factor of concern for urban governance in the sub-region.

Housing and Shelter

Social housing delivery for the poor in RSA has lagged significantly behind demand. For example, Johannesburg and Cape Town build an average of 10,000 units annually, yet the combined housing backlog for both cities stands at around 400,000. The supporting bulk infrastructures that are required to create viable neighbourhoods are often absent, as the capacity to meet them is either inadequate or concentrated in other areas (e.g. where business requirements take precedence).

Informality

As cities are growing, the proliferation of slums and informal settlements seems inevitable. With informal settlement expansion, governance challenges relate to massive backlogs to meet the basic needs of dwellers and stimulate economic activities for their employment. Informal traders and service providers play a significant role and mobilize around different themes to engage with formal systems of governance. Informal minibus taxi operators, for example, are well organized and represented in RSA and regularly enter into contestation with formal systems of governance (e.g. traffic authorities). In Maputo, vendor associations help govern informal trade, as well as their interactions or contestations with formal systems[93]. Grassroots and civil society organizations are also active, promoting community-led development strategies and advocating on behalf of marginal communities (see section 6.5). In this respect, governance challenges revolve around integrating bottom-up and top-down priorities of development at city and local scales. The challenges also require governance to embrace more inclusive and supportive approaches towards informal sector activities rather than focussing purely on their regulation.

Urban Spatial Inequalities

Urban growth has generally been accompanied by sprawl; inner city decay and slum formation; piecemeal development by private developers and informal dwellers; gated communities and enclave developments; the migration of core services industries to city suburbs; and sprawling informal settlements on the peripheries. Gated townhouse developments for the wealthy in Luanda are indicative of more than just securitization. They also reflect the lifestyle and prestige aspirations of the elite, whose realities are far removed from those of *musseques* dwellers, or in social housing characterized by poor service delivery and lack of integrated infrastructure. Governing vastly unequal urban socioeconomic systems, which manifest in spatial segregation patterns in Southern African cities, should be a key priority for national and city governments if only in the interest of social stability.

Urban Political Constituencies

Political sustainability in Southern African cities depends on overcoming their high inequality levels. A key requirement in meeting these challenges is the provision of infrastructure; basic services (such as sanitation and water provision); low-income housing; and gap (or transitioning) markets, for which urban

land management and administration strategies and practises in the sub-region's cities have so far largely been inadequate.

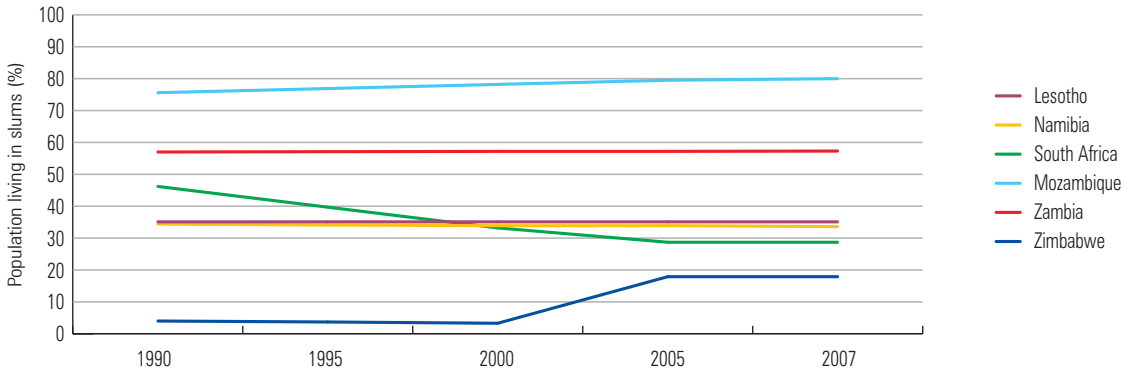
Whether an incremental or a radical revision of urban planning is necessary is a matter for further debate and research. Clearly, current urban planning systems and processes are failing to meet the most critical needs of low-income and poorest residents, who constitute large proportions of urban populations. High levels of inequality, urban poverty and youth unemployment in these cities foster conditions for large-scale political instability. This is especially the case when considering that the majority political constituency of Southern Africa already resides in cities, and that this share will likely increase until around 2050. It is hence foreseeable that urbanization will play a key role in shaping the socio-political and cultural dynamics of cities in the sub-region. African democracies are set to change, as the transition from majority rural to urban voting populations unfolds in the 21st century. Typically, opposition parties have garnered the urban vote, while the ruling parties (usually ex-liberation movements) have relied on the rural vote. As the majority of voters will be young urban dwellers it is entirely possible, and perhaps likely, that significant political shifts may accompany the Southern African urban transition. Urban governance in the sub-region is critical for ensuring sociopolitical and economic stability at local and national scales.

Poverty and inequality

Figure 6.4 indicates Southern African national shares of slum dwellers. Proxy indicators were used for Southern African cities since, given the high levels of urbanization, it is likely that national level statistics on slum formation reflect dynamics within urban centres. The percentage of people living in slums and informal settlements in Southern Africa is generally lower than the rest of the continent, except for Angola, Mozambique and Zambia. However, despite generally fewer widespread slums in RSA, Namibia, Lesotho and Zimbabwe, the plight of slum-dwellers remains fraught with challenges and injustices. According to the Global Urban Indicators data, slum dweller populations have stayed more or less constant over the past 17 years in some Southern African cities. However, these data appear doubtful and may very well reflect old data that could not be updated with new annual figures.

Of particular interest is that although slum dweller percentages are low, Gini coefficients at city and country level in the region are staggeringly high, with RSA leading the region in inequality (Table 6.2). Despite the region's economic success in terms of GDP growth relative to the rest of sub Saharan Africa, widespread inequality characterizes the primary condition of Southern African cities. The Gini coefficient of Zimbabwe is listed at 0.6, but this value is

FIGURE 6.4: **SOUTHERN AFRICA - PERCENTAGE OF PEOPLE LIVING IN SLUMS**



Source: Global Urban Indicators 2009, Table 7.[94]

TABLE 6.2: **GINI COEFFICIENTS FOR SOUTHERN AFRICAN CITIES AND COUNTRIES**

Country	City	Date	City Gini Coefficient	Country Gini Coefficient
Angola	--	2009	--	0.586*
Botswana	--	2001-2	--	0.5
Lesotho	Maseru	1993	0.58	--
Mozambique	Maputo	2002-3	0.53	0.48
Namibia		2003	--	0.58
RSA	Johannesburg	2005	0.75	0.76
RSA	Cape Town	2005	0.67	0.76
RSA	eThekwini (Durban)	2005	0.72	0.76
Zambia	--	2006	--	0.66
Zimbabwe	--	1998	--	0.60

Sources: Global Urban Indicators 2009; Table 26 & 27; [95] **: African Development Bank 2009*[96]

derived from 1998 data, and since then there have been fundamental changes in Zimbabwe's political and economic trajectory. The Zimbabwean economy has declined drastically, forcing many to seek employment in surrounding countries, especially South Africa.

Growth in Southern Africa has, typically, resulted from the urban economy but has failed to raise regional living standards and income levels as expected. Instead, rapid growth in GDP has rendered these urban societies vastly unequal, deeply fragmented and, therefore, potentially a significant socio-political risk.

Access to Services

Cities in Namibia, RSA and Zimbabwe boast relatively high levels of general service provision (Table 6.3). Luanda (Angola), Lusaka and Ndola (Zambia) have very low levels of piped water, sewerage, telephone and access to electricity. The latter is particularly low in Maputo, Maseru, Lusaka and Ndola. Access to electricity in Pretoria (now part of the greater Tshwane Municipality) was low in 1998, but has likely improved significantly since. Access to piped water and sewerage services is particularly low in Luanda, Lusaka and Ndola. In Gaborone, water tariffs are high due to the high cost of transportation.[97] Windhoek also faces water supply challenges, and has for a long time.[98] In Maseru (Lesotho) and Maputo (Mozambique) access to sewerage services is very low at 9.7 per cent and 8 per cent respectively. Poor access to water and sanitation services in recent years in Luanda (Angola) and Beira (Mozambique) caused the death of thousands of urban poor. A typhoid outbreak in Harare during 2012 killed more than 800 people and raised fears of a cholera outbreak. Lusaka stands out as the lowest overall service provider amongst the surveyed cities across the spectrum of services.

Generally, access to urban services in the sub-region is hampered by large infrastructure deficits. These cities have been unable to prepare adequately for population growth. The demand for housing, as well as the proliferation of informal settlements and inadequately planned, piecemeal private developments (which all contribute to and catalyse sprawl and urban fragmentation), make it even more difficult to cope, especially for centralized and semi-centralized infrastructure developments. Regardless of the level of access to urban services and infrastructure, overcoming the infrastructure deficit will require some measure of formalization of planning processes. Uncontrolled sprawl often expands into areas that are unfit for housing, rendering municipalities incapable of deploying formal infrastructures within. Over time, this breeds significant discontent.

In 2009, Lusaka and Windhoek funded their expenditure from their own revenue collections, while Ndola (Zambia) raised around 70 per cent of its own funding primarily from property taxes, of which 56 per cent was residential.[100] Windhoek makes use of about 1.2 per cent of its tax base to fund municipal services.[101] Lusaka, Gaborone and Maputo have healthy year-end budget balances.[102] Staff costs of municipalities consume significant proportions of municipal funds: Lusaka 50 per cent, Maputo 59 per cent. In RSA, eThekwini and Johannesburg are considered close to their borrowing limits,[103] while Cape Town and Tshwane (Pretoria) have debt-to-income ratios of about 40 per cent (Johannesburg is at 50 per cent). RSA has recently made changes to city revenues and a new property tax system has been introduced.[104]

Water Supplies

Urban water supplies in the sub-region are drawn from diverse sources which, in many instances, traverse national boundaries. As a consequence, most governments in the region may view water insecurity as a high threat to stability.[105] Generally, water is impounded and delivered through a set of formal water infrastructures to cities in the region. Many of these dams also contribute significant capacity to national electricity grids through hydropower. Trends over the past two decades indicate that RSA has improved urban drinking

TABLE 6.3: **PERCENTAGE ACCESS TO SERVICES FOR SELECTED CITIES IN SOUTHERN AFRICA**

Country	City	Year	Piped Water	Sewerage	Telephone	Mobile	Electricity
Angola	Luanda	2006	36.6	53.2	88.2	40.1	75.5
Lesotho	Maseru	2004	75.5	9.7	50.2	--	33.1
Mozambique	Maputo	2003	66.4	8.0	5.2	--	28.8
Namibia	Windhoek	2007	82.8	86.0	37.1	--	83.4
RSA	Cape Town	1998	79.7	73.8	49.6	--	88.0
RSA	Durban (now eThekwini)	1998	87.7	86.9	46.3	--	84.3
RSA	Pretoria (now Tshwane)	1998	62.5	62.5	18.8	--	56.3
RSA	Port Elizabeth	1998	66.8	55.7	27.0	--	84.3
Zambia	Chingola	2007	80.1	82.5	9.6	71.7	76.5
Zambia	Lusaka	2007	31.6	27.4	4.9	68.4	57.0
Zambia	Ndola	2007	39.5	34.0	8.1	57.8	38.9
Zimbabwe	Harare	2005	92.7	87.1	17.5	37.6	86.3

Source: Global Urban Indicators (2009); Table 12.[99]

Katse Dam, Lesotho is part of the Lesotho Highlands Water Project. **©Christian Wörtz.** Licensed under the Creative Commons Attribution-Share Alike 2.5 Generic license.

water and sanitation coverage, while Angola, Botswana, have shown significant improvement in service provision (Table 6.4). Widespread government action to provide water and sanitation services to areas unserviced during the apartheid regime has been largely successful (see Text Box 6.3). Lesotho has shown great strides in improving water-related urban services. However, Lesotho and Mozambique continue to lag far behind the regional average for household water and sanitation (Table 6.4). Lusaka, which consumes 220,000 m^3 of water daily, has a shortfall of 80,000 m^3 per day.[106] In reality, sanitation services remain a challenge for Southern African cities in general, especially where informal settlements are concerned.

Southern Africa is generally a water scarce region, with the agricultural sector using most of the annual water supply. In the sub-region, Zambia alone is water-rich and Lusaka draws power and water from the Kariba Dam in the Zambezi River. Existing wastewater abstraction capacities also limit access to potable water and sanitation services in the region's cities. The costs of building new wastewater plant facilities are high and city governments can scarcely afford to embark upon such large-scale projects alone.

Southern African countries, and their cities, share many water catchment areas. The Zambezi River catchment in Zambia is the fourth-largest in Africa, spanning seven countries (Angola 18.2 per cent, Zambia 40.7 per cent, Zimbabwe 18 per cent, Mozambique 11.4 per cent, Botswana 2.8 per cent, Namibia 1.2 per cent and Tanzania 2 per cent).[115] The Lesotho Highlands Water Project (see Section 6.2, Semi-arid Areas and Climate Change), which links the water-rich Lesotho Highlands to

TABLE 6.4: **ACCESS TO IMPROVED[107] DRINKING WATER AND SANITATION**

Country	Improved Drinking Water Coverage (Urban) (Total per cent)		Household Connection to Improved Drinking Water (Urban) (Total per cent)		Improved Sanitation Coverage (Urban) (Total per cent)	
Year	**1990**	**2008**	**1990**	**2008**	**1990**	**2008**
Angola	30	60	1	34	58	86
Botswana	100	99	39	80	58	74
Lesotho	88	97	19	59	29	40
Mozambique	73	77	22	20	36	38
Namibia	99	99	82	72	66	60
RSA	98	99	85	89	80	84
Swaziland	--	92	--	67	--	61
Zambia	89	87	49	37	62	59
Zimbabwe	99	99	94	88	58	56

Source: Global Urban Indicators 2009, Table 11.[108]

BOX 6.3: **BASIC SERVICE PROVISION IN SOUTHERN AFRICA: PERSISTENT WATER METER STRUGGLES IN RSA**

Neo-liberal approaches to urban service delivery, underpinned by cost-recovery policies; commoditization of basic needs provision; and privatization have often led to urban and residential services that are too expensive for the poor. As major responsibilities have been devolved to already overstretched and underfinanced local levels, local authorities are struggling to fulfil their service delivery mandates. Therefore protests over service delivery remain a regular feature in Southern African, especially in RSA's cities.

Since 1994, RSA has undergone major reform in water allocations. It is one of very few countries worldwide where the right to sufficient water is constitutionally entrenched. The National Water Act (No. 36 of 1998) marked a major turning point for water-use rights reform in RSA.[109] Underpinning the Act is a focus on decentralized management and redistribution of formal water-use rights which must be charged. While water reform in RSA has witnessed certain advances, the country has battled to provide adequate supplies to many poor households. The system of water provision is highly complex and has, in some cases, unintentionally exacerbated societal inequalities with the poor being further marginalized. In addition, RSA's Municipal Systems Act of 2000 allows for service tariffs to be differentiated on the basis of indigency (i.e. poverty). Thus, the process can be stigmatizing and exclusionary since many municipalities use administratively intense income-based indigence registers for determining free basic water allocations.[110]

Water supply to poor urban households is controlled by prepaid water meters installed for each household. These measures were introduced for demand management and to tackle non-payment. However, there have been unintended consequences in terms of creating further disparities, conflict and broader service delivery protests. Many households are left without reliable clean water supply once the initial free monthly allocation of 6,000 litres per household per month under the Free Basic Water policy[111] is depleted. Officially, this level is considered sufficient to live on, however it has proven seriously inadequate and a fraction of what middle to upper-income households use. However, inaccurate calculations of per capita stand pipe use means that such allocations seldom last over two weeks before supplies are cut off, leaving communities without access to clean water and exacerbating health vulnerabilities. Further, electricity and water cut-offs, or punitive rationing, are widespread and erode the benefits of basic service provision and human rights.[112] Post-1994 improvements to urban service provision have often disproportionately benefited middle to higher-income households.

These stark inequities and injustices in service provision in RSA and other Southern African countries such as Namibia (where pre-paid meters are also in place in poor urban neighbourhoods) are major points of societal contention, resentment and conflict-sparking periodic protests.[113] Numerous protests occurred in RSA cities during July 2012, causing widespread unrest and disruption.[114] Dissatisfaction over unequal water provision was a major catalyst for several of these protests with more in 2013, although to a lesser degree than the 2012 spike. This ongoing contestation over water meters is illustrative of the extreme challenges faced by urban authorities across Southern Africa in determining effective and equitable approaches to service provision. Such conundrums over basic service provision are exacerbated by mounting major environmental change stressors.

Gauteng Province in which Johannesburg is located, is another example of the extent to which some of the sub-region's urban systems are dependent on external water sources. In this sense, Southern African cities have an interest in ensuring that regional-scale agreements and land-use management within catchments is ensured. Typically, this responsibility lies with provincial and national governments. These projects and programmes point the way towards more holistic water management, as well as the need for decentralized water sanitation and sewerage systems, and possibly decentralized potable water supply systems. The costs of formal centralized water supply and sanitation systems are likely to increase as the costs of water and energy rise. Pumping large amounts of water and sewerage to centralized processing systems, far from water sources, will likely become economically unfeasible. The inability of formal, centralized systems to cope with sprawl and unplanned development also indicates that decentralized and semi-decentralized solutions may play a role in the solution.

Food Security

The vast majority of the Southern African urban food supply is produced on large private commercial farms, agrobusiness estates and plantations.[116] The food sector in Southern Africa has undergone significant changes between 2000 and 2010, involving the consolidation of formal and corporate food systems and the entry of large global food multinationals and supermarkets. Southern African cities generally access food from supermarkets and informal markets (Table 6.5). Household use of supermarkets far outweighs the informal sector in cities such as Cape Town, Gaborone, Johannesburg, Maseru and Windhoek. Only in Harare, Lusaka and Maputo does a radically different pattern appear where household food purchases are nearly 100 per cent from informal markets. Notably, in Harare 60 per cent of households grow their own food (Table 6.5). Note that Table 6.5 refers to the proportion of households that make use of supermarkets, informal markets and which grow their own food, and not the average split between household dependence on these sources.

In RSA, 70 per cent of poor urban households surveyed reported conditions of "significant" and "severe" food insecurity.[118] Poor households in the country can spend from 60 to 80 per cent of their incomes on staple food. When food prices increase, these vulnerable groups compromise on quality.[119] As a result, poor nutrition, obesity and other health complications unfold in urban households. The informal food sector remains important, even when high use of supermarkets occurs, as in Windhoek (Namibia) where a high percentage of households make use of supermarkets (97 per cent) and informal markets (76 per cent). The same is true of RSA (Table 6.5). This may indicate that where inequality

TABLE 6.5: **HOUSEHOLD FOOD SOURCES IN SOUTHERN AFRICAN CITIES**

Country	City	Household purchases from supermarkets (%)	Household purchases from informal markets / street food (%)	Households that grow their own food (%)
Angola	Luanda	--	--	--
Botswana	Gaborone	97	29	--
Lesotho	Maseru	84	49	~50
Namibia	Windhoek	97	76	--
RSA	Cape Town	94	66	5
RSA	Johannesburg	96	85	9
Swaziland	Manzini	90	48	--
Mozambique	Maputo	23	98	23
Zambia	Lusaka	16	100	3
Zimbabwe	Harare	30	98	60

Source: AFSUN 2010, Table 7.[117]

is greatest in Southern Africa, the use of informal markets plays a much stronger role in relation to the formal sector. Food insecure households frequent informal food markets and small shops (often informal) for the majority of their purchases, while food secure households more often frequent supermarkets.[120]

The market dependency of urban households renders them more vulnerable to food security crises.[121] While household urban food production in Southern African cities, particularly RSA's cities, may not necessarily offer anything more than subsistence,[122] the potential for small-scale farmers is significantly higher. In RSA, for example, around 350,000 informal traders sell food. However, large-scale formal food production in Southern Africa makes the food market very difficult for small-scale producers to penetrate.[123] In 2006, 3.7 per cent (44,787) of small-scale farmer households in RSA derived their primary income from farm sales. By comparison 51 per cent (642,520) derived theirs from social grants.[124] In Harare, the potential for urban agriculture beyond subsistence farming was limited. Until recently, urban farmers were monitored closely by the authorities and destruction of crops by police was not uncommon.[125] This has recently been changing, with many organisations requesting the legalisation of extended urban agriculture in recognition of its role in urban food security.[126]

Yet Southern African cities, perhaps in part due to their high levels of inequality, require urban food security interventions at local scales. Gauteng Province in RSA, for example, has some of the most fertile arable land in the country and has significant potential for cultivation[127] but agriculture is being displaced by rapid urbanization and an absence of pro-poor urban and peri-urban agricultural policies.

Energy Security

Southern African electricity has undergone steep price hikes over the past two decades and in low-income households biomass energy remains a primary source of energy supply. Wood-based fuels account for up to 90 per cent of energy supply in Maputo and 78 per cent in Lusaka.[128] Regionally, over 80 per cent of people make use of wood or charcoal for domestic cooking and heating,[129] and RSA has been in a wood-fuel crisis for the past few decades.

Urban energy security is threatened by increasing demand due to population increase, climate-related weather variation, as well as inadequate infrastructure and supply. Large centralized power agencies typically operate the urban electrical power supply, while fuel supply can be controlled by a variety of formal and informal actors and agencies, depending on the city. Cape Town, eThekwini and Johannesburg (which have, since 1994, implemented large-scale electrification of informal settlements and previously unconnected areas without a commensurate increase in power supply options) have experienced power-shortages since 2007/8. Two more coal-fired power stations are under construction (i.e. Khusile and Medupe) to help meet rising demand, although it is clear that over-reliance on coal-fired electrical power may not be feasible in the long-term due to uncertainties over the supply and quality of coal.[130] Construction costs of the Medupe Power Station have escalated from approximately USD 7 billion in 2007 to over USD 10 billion in 2013.[131] This threatens to place severe pressure on the RSA national budget.

Urban Resource Pressures and Recommendations

Southern African countries such as Angola, Mozambique and Zambia combine high shares of people living in slums (Figure 6.4), with very high levels of inequality (Table 6.2). Consequently, the poor are more likely to feel the effects of urban resource pressures. Below, the key urban resource pressures facing Southern African cities are briefly summarized and coping recommendations are made.

Water Supply and Service Provision

Sub-regional water scarcities have a significant bearing on the supply of water to urban areas, where concentrated and increasing demand for water unfolds as urbanization ensues. Climate change impacts threaten to exacerbate water

A water kiosk in Chipata, capital of the Eastern Province of Zambia. **©GIZ Rahul Ingle, 2010.** Licensed under the Creative Commons Attribution 2.0 Generic license.

shortages further, while lack of local infrastructure constrains water delivery even where supply is ensured. Potable water supply is restricted by the capacity of urban water purification plants and by generally low levels of access to piped water (Table 6.3). Suppliers have been raising water tariffs over the past years and prices are set to rise even further, by up to 40 per cent by 2030.[132] Ensuring urban water supply requires interventions at sub-regional and local scales. At sub-regional scales, well-managed, inter-basin transfer schemes and good catchment land-use management upstream and downstream of cities are likely to contribute favourably to long-term water supply. At local scales, ensuring sustainability of urban water supplies requires moving towards higher levels of water conservation, including grey-water reuse, recycling and decentralized rainwater harvesting. Reducing water loss, by fixing leaks and instituting better maintenance regimes in urban systems can contribute greatly to savings,[133] indicating that improved efficiency measures can make a significant contribution to urban water security.

Wastewater and Sanitation

Maputo, Maseru, Lusaka and Ndola have the sub-region's lowest general sewerage access (Table 6.3), especially affecting informal settlements and slums. In RSA, inner-city and peripheral slums are effectively cut off from conventional infrastructures, due to occupation of buildings cut off from services; inability to pay for services; and lack of infrastructure. This renders poor and marginal urban dwellers (particularly infants) vulnerable to waterborne diseases. Under high urban growth and urbanization rates, centralized bulk wastewater infrastructure is under pressure. Expanding bulk infrastructure provisions is likely to prove extremely costly in the medium to long-terms, as high levels of sprawl translate into higher infrastructure costs. Semi-decentralized and decentralized waste-to-energy systems that produce gas for heating and cooking (as well as compost) are far more desirable than traditional flush toilet infrastructures that incur large costs (large amounts of water and energy to transport and process wastewater in centralized infrastructures). Dry sanitation has been implemented as a solution in Southern Africa,[134] for example in Cato Manor settlement (eThekwini). However, achieving successful integration of decentralized wastewater sanitation infrastructure requires close engagement with local communities and inclusive, transparent processes through which these technologies are deployed. Overcoming misperceptions among the poor that these services are inferior is a critical part of the challenge.

Waste Removal and Disposal

Southern African cities have differing capacities for waste management. In RSA, municipal solid waste is generally deposited in landfill sites, yet landfill capacity of these cities does not extend beyond the next two decades with many facilities already at or over their capacity. This presents a fundamental challenge, which is whether to replicate conventional landfill systems - located far outside the city and incurring high transportation and environmental costs - or whether to migrate towards zero-waste systems. In Maputo and Luanda – cities with high proportions of residents in slums and informal settlements – waste is often discarded untreated, leading to health problems and environmental damage. Closing waste loops should be a priority for city governments, as the potential for waste reuse is high, given the relatively large urban populations. More localized solutions are required for dealing with waste, and the potential exists to create small to medium-scale industries engaged in the waste-value chain and simultaneously to create much needed semi-skilled and skilled jobs. There are numerous opportunities to transform informal recycling and reuse activities towards greater relevance in Southern African cities that could be carefully considered in urban waste strategies.

Food Security

The food and nutrition security of poor and low-income households in urban Southern Africa is highly vulnerable to changes in global oil prices that raise the costs of food production, storage, packaging and transport to cities. Prioritizing affordable supplies to low-income and informal urban households is essential to guarantee urban food security. Informal food markets play a key role, alongside formal sector providers, in ensuring the supply of produce to Southern African urban households (Table 6.5). Both contribute to household food security and nutritional diversity.

Building local scale resilience to food price increases involves reducing local vulnerabilities to global food supply and cost fluctuations that manifest in higher food costs at household level. This can be achieved by creating competitive local options. For example, establishing urban market gardens and urban markets within the city and its peripheries can improve local supply and diversity of affordable food. Cities may explore options that strengthen food production by small and medium-scale urban farmers. Bringing local urban farming and retail chains together is likely to be challenging, except in the case of high quality goods that are grown according to recognized standards. City-level strategies are required to strengthen capacity for local scale agro-production, using agencies such as cooperatives, government-funded skills development and technical advice centres, as well as non-profit organizations to boost small-scale food production within and around cities. This will likely increase the variety and availability of food and nutrition, while reducing costs, ensuring that poor and low-income households will benefit.

Energy Security

Urban energy supply in the sub-region is under increasing demand as cities expand. In RSA, national energy supply became inadequate to meet national demand in 2007. As a result, scheduled blackouts to load-shed from the national grid unfolded. This had severe consequences for productivity levels in a number of cities, rendering numerous critical functions within these cities defunct. The impact on productivity in the energy intensive economy of RSA, and especially within its cities, has been felt by all sectors.[135]

Urban energy security can be achieved through three avenues in Southern Africa. These are: a) continued use of coal and coal-fired power stations; b) building new nuclear power plants; and/or, c) diversifying energy supply through renewable energy technologies and systems. Potential for renewable energy is high in Southern Africa; this includes solar, wind, hydropower and the ocean resources of the Agulhas Current. However, large-scale bulk infrastructure provisions in the energy sector are costly, as the escalating costs of the coal-fired Medupe Power Station (RSA) have proved. It is important for cities to consider alternative strategies. Energy-savings companies can be established at small and medium scale to manage energy footprints through new appliance regulation technologies (see Section 6.6). Further, implementing local-scale, smart-grid technologies can contribute to building long-term resilience within the national grid. Off-grid technologies can alleviate demand pressures on the national grids. Every effort should be made to make use of the opportunities that new technologies offer to diversify and decentralize the energy market and infrastructure systems in Southern African cities. Where cities rely heavily on hydropower, it will be necessary to understand how climate change and catchment management practises may influence flow regularity and levels.

Environmental Security

Environmental pressures associated with sprawl; lack of infrastructure and service provision; and resource constraints are ubiquitous and varied in Southern African cities. Sprawl, especially by unplanned informal peri-urban settlements, occurs often in ecologically sensitive or unsuitable areas such as wetlands, estuaries or low-lying flood plains. When basic services are unavailable, poor informal dwellers turn to natural environmental resources. Water is often drawn from rivers when water supply is unavailable. When electrical energy is unavailable, wood is gathered for cooking and heating. In Maputo, sensitive mangrove forests are a target for firewood collection, charcoal production and construction timber.[136] This has the potential to disable much needed ecosystem services upon which many people in the city are dependent for food and livelihoods, as well as reduce storm-abatement capacity.[137] The future sustainability and environmental security of Southern African cities will depend on the extent to which they are able to decouple from environmental impacts and resource exploitation. Urban infrastructure choices and economic growth trajectories thus require close scrutiny through which these technologies are deployed. Overcoming misperceptions among the poor that these services are inferior is a critical part of the challenge.

6.5
Urban Culture and Change Agents

A Somali shopkeeper in Zandspruit, an informal settlement near Johannesburg. Many of the Somali immigrants will not venture outdoors at night for fear of xenophobic attacks.
© Mujahid Safodien/IRIN

Culture and Identity

Migration, Globalization, Diversification and Identity

The sub-region hosts a wide range of indigenous ethnic groups, languages, religions and cultures, with densely interwoven political histories that ultimately converge in the cities, intensified through high levels of migration between cities and countries of the sub-region. This brings about conflict; contestation; need for mediation; cooperation; new modes of identity construction (including gender); community formation; and societal norms.

Migration is a key influence in changing the urban sociocultural landscape. Changes in RSA since 1994 have heavily influenced regional migration patterns. Under apartheid, cities served as an instrument of control and access to them was strictly regulated. Indigenous South Africans were unable to access opportunities within its cities and were effectively restricted to labour, administrative and semi-professional occupations. Apartheid-era migrants, mainly from Zimbabwe and Mozambique, were similarly restricted and the majority of them worked on farms and mines. Post-apartheid urban integration, which has absorbed migrants from across Africa south of the Sahara, has struggled to keep pace, as witnessed by xenophobic attacks in 2008 which spread rapidly across the country and have continued to flare up intermittently.[138] New modes of identity construction amongst cross-border migrants in Southern African cities were already being discussed in 1998, where identity was conceived of as "a vehicle of adaptation",[139] that is a vehicle through which cross-border migrants adapted to life in different locales.

The appearance of new urban modes of identity is especially reflected in the rise of - often trans-local - faith-based organizations in African cities south of the Sahara[140] in general. Churches and mosques with largely migrant populations, common in Cape Town, eThekwini and Johannesburg (RSA), play a strong role as community support structures. Through their many and varied interactions in the city, migrants effectively form new communities, while at the same time generally maintaining close links with their communities in their countries of birth. Through these dual

Maputo, September 2010. Urban poor protest against the rising cost of basic commodities such as bread, electricity, water and fuel. **©Conselho Cristao de Mocambique**

community memberships (increasingly in two cities in the region i.e. not rural-urban), a greater variety of opportunities for employment, trade and accessing finances emerges for foreign and local migrants living in urban areas. Religious identity, since it transcends location and ethnicity, provides more opportunities for engaging in the social economy of the city.

The diversity of Southern African cities is also reflected in how popular urban culture reinterprets global influences in local contexts. Vibrant local music draws on American hip-hop and other influences to produce their own blend of youthful hip-hop in Harare, Johannesburg, Maputo and other cities of the sub-region. The processes of globalization continue as urbanization unfolds, opening up spaces for more fluid interpretations of identity construction. New modes of gender construction and assertion are also emerging, as women – historically relegated to secondary roles – try to harness the forces of liberalization to speed up their own emancipation. More varied potentials and opportunities exist in cities for women to mobilize around agendas, and contest social ills, such as rape, HIV/AIDS and the victimization and even murder of lesbians, as has occurred in Cape Town and Johannesburg. Women are increasingly playing a more varied set of roles in Southern African cities in particular, where they are often the sole breadwinners in poor urban households.

Yet, the pace of globalization has caused concern for many, especially in terms of the economic liberalization and deregulation and the insertion of Western and other values into urban contexts that are themselves rapidly transforming, which may open up opportunities for such foreign value systems to "fill the vacuum." Botswana, for example, has been heavily impacted by globalization[141]. Socioculturally, economically and politically, Botswana has been affected, positively and negatively, by its increased global interconnectedness (social, economic, migration, media) and its wholehearted adoption of free market policies, using its lucrative diamond resources as a lure. High economic growth has translated into social infrastructure benefits such as the construction of schools and clinics, but has not sufficiently tackled inequality.

Inequality

The staggering inequality gaps that have accompanied economic growth are reflected in the changes in social values that have consumed Southern Africans, especially urban residents. In Maputo, the recent high rates of economic growth have been accompanied by growing poverty and inequality.[142] In February 2008, riots broke out due to crippling increases in the price of fuel in Maputo, which saw urban commuters spending around 50 per cent of their salaries on transport, besides raising the cost of food.[143] These seeds of unrest also lie latent within other Southern African cities, especially in

RSA, where national and urban levels of inequality are among the highest in the world and where wage and service delivery protests have spiked since the 2009 election.

The high levels of inequality and the social fragmentation that characterizes urban socio-spatial relations and class and ethnic distinctions, contain the seeds of significant political discontent in urban Southern Africa. They create and reinforce an "identity of exclusion" amongst the urban poor and the marginal (e.g. migrants). Southern African populations are highly reliant on social grant systems, with around half of the sub-region's poor dependent on them.[144] Should growth begin to slide due to global declines in demand for minerals (and energy), political instability may grow. This is a distinct possibility, given the global slowdown and that China's economic boom may plateau around 2020.[145] The possibility of sociopolitical unrest in the region is particularly high, due to the majority youthful population cohorts, many of whom remain unemployed and without access to opportunities for education, skills development or personal advancement. How urban culture and identity unfold in, and between, Southern African cities is likely to influence the ongoing economic and political transition to majority urban voting populaces, significantly. As new modes of interaction or values, beliefs, norms and behaviours emerge, they are sure to play a key role in what ultimately unfolds.

Informality

Informality, as employed in this section, refers to informal land and housing acquisition and management, as well as informal trade, service provision, employment and training, all of which present challenges to formal institutions. The clash between formal and informal systems of urban governance is pronounced in Southern African cities. Perhaps because these cities are on average wealthier, more formalized and have good basic infrastructures, the informal sector can more legitimately be considered as existing "outside" of formal systems. This is especially the case where land and housing acquisition and management are concerned, and where activities such as informal trade and service provision by street traders and the likes are considered. The informality that has persisted in Southern African cities can more readily be described under the term "quiet encroachment",[146] that is unpoliticized encroachment upon urban space, infrastructure and services.[147] The urban poor are forced to contest urban space, infrastructure and service provision to survive. This is because of the lack of other avenues and support structures towards employment, and to exploit emerging niches and create self-employment.

Informal activities are typically conducted on small-to-medium scales. A possible exception is the massive informal public transport industry in RSA, which services 60 per cent of the country's commuters.[148] Minibus taxi associations are powerful forces of contestation in the country with the ability to prevent national and city governments from rolling out other public transport infrastructures that may threaten informal private transporters. For example, the establishment of a bus rapid-transit system (BRT) that connects the Johannesburg city centre to the township of Soweto involved lengthy negotiations with taxi associations, eventually leading to the creation of programmes to retrain taxi drivers as BRT drivers. The RSA minibus taxi industry is regarded as informal because it does not contribute to income taxes. However, it is organized and is subject to regulation. A widespread government programme to migrate old, dangerous taxis to safer, lower emission vehicles has been established, demonstrating that the state can enforce regulations upon informality. However, the industry remains extremely powerful and recently even negotiated an agreement that traffic fines to minibus taxis would be scrapped.

In Southern African cities, informal hubs of activity are often located around informal taxi ranks. These micro-nodes of informal activity play a critical role in convenient access to goods and transport throughout the region and many Southern African city governments have taken the initiative to create supportive infrastructure in urban spaces for these activities. This semi-formalizes them within the urban fabric, or at least bounds and contains informal activities within certain areas and relieves contestation over pavement retail space. Most Southern African cities host long-established informal markets (e.g. Warwick Triangle market in eThekwini and the fish market in Maputo), which have become normative features of these city's urban fabric. The cumulative impact of informal trade in Southern African cities is very high. The Warwick Triangle market, for example, was estimated to have an annual turnover of around ZAR one billion[149] (approximately USD 8.63 million) in 2001. In such cities as Luanda and Maputo, where informality is the largest employer, it is possible that these estimates may be even larger. Informal employers also take on apprentices and train workers for particular tasks, and as such constitute an informal, yet unstructured and uncertificated, training ground.

Informality, whether in respect of trade and services or land and housing acquisition management, exists in conflict and contestation with formal businesses and city authorities. Treating informality as an aberration (i.e. of formal economic, governance and planning systems) in Southern African cities distorts and undermines appreciation of the urban economies and ignores the contributions of a vast number of alternative urban systems of trade, service provision, land and housing acquisition upon which people and livelihoods depend. Attempts to rid the Southern African region's cities of informality may be robbing local economies of its most vital stabilizing element. Informality is a distinct and powerful market force, artificially marginalized from formal systems, and is sensitive to the changes that affect everyday life amongst the urban poor. Denying it a rightful place within urban economies, based on the aspirations of the wealthy few, is more likely to foster greater levels of unemployment and lower levels of alternative access to food, nutrition and transport for the majority of residents.

▲
Mbare market, Harare, Zimbabwe. Informality is a distinct and powerful market force. **©Shack Dwellers International**

Agents of Change

A variety of actors, from a wide range of origins, can be found in Southern African cities. Their relative economic success renders these cities subject to high levels of in-migration from rural areas and from abroad. While urban migration is viewed disparagingly by formal institutions of governance, often referred to as "influx control", migration has the potential to fill many skills gaps. Urban skills deficits are particularly high, with significant levels of illiteracy amongst the youth in Southern African countries. [150] But migrants and immigrants who have skills to contribute to the city economies are often prevented from seeking work, rendering their skills latent but unused.

Youth

The youth bulge in Southern African cities is highly significant. Johannesburg (RSA) has 43 per cent of its populations under the age of 25, while Harare (Zimbabwe) and Lusaka (Zambia) register at 61.5 per cent and 67 per cent respectively.[151] Yet this will change over time and by 2050 youth will constitute 15.6 per cent of Southern Africa's population.[152] High percentages of working age youth remain unemployed in Southern African cities. Youth unemployment is above 20 per cent in Zambia and Zimbabwe, above 30 per cent in Botswana, Namibia, Swaziland and Lesotho, while in RSA female youth unemployment is above 60 per cent.[153] Many turn to informal modes of income generation, or to illegal activities such as dealing in contraband goods or drugs. These activities are largely subsistence based, and do little to improve the plight of youth. This constitutes a serious challenge for the region, as well as a large opportunity; that is a labour pool for growth and a potential base for political transition towards stronger democratic practices. As a consequence, contemporary youth politics will determine the Africa of tomorrow.

In Mozambique, 95 per cent of the population and 2.6 million young people aged 15-24 years are employed in the informal sector.[154] With 300,000 youth entering the labour market yearly, these pressures are intensifying, despite the growth of secondary and tertiary sectors. Access to social networks through which employment could be obtained or created (or training obtained e.g., through apprenticeship) proved to be as important as education and skill levels. In post-war Angola, the plight of the youth requires psychosocial aid.[155] This implies engaging deeply with the fraught history of conflict in the region and allowing for diverse forms of expression and reconciliation to emerge from society.

The leading cause of non-natural death in RSA for youth is violence,[156] although decreasing from 56 per cent in 2002 to 48 per cent in 2007 for 15-24 year olds, and from 56 per cent in 2002 to 44 per cent in 2007 for 25-34 year olds (Table 6.6). Groups of disaffected youth also terrorize foreign shopkeepers in the former black townships by extracting payments, burning down their shacks, and also killing shop owners when anti-foreign sentiment grows high. Youth migrants to urban areas in Southern Africa (and African countries south of the Sahara in general) are mostly male, which is often cited as contributing to the high levels of violence.[157]

Southern African governments have largely promoted visions that empower youth and seek to include the youth

TABLE 6.6: **VIOLENCE - LEADING CAUSE OF DEATH AMONGST YOUTH IN THE REPUBLIC OF SOUTH AFRICA**

	Leading Cause of Non-Natural Death in the RSA (%)					
Age Group / Year	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
15-24	56	58	51	52	--	48
25-34	56	56	48	49	--	44

Source: Graham et al 2010: Table 1, P21.[158]

in decision-making and power-brokering. However, massive failures of education systems and other social services have rendered many youth marginalized and unable to engage positively with society or the politics by which they are governed. Many youth are effectively raised by their kin or peer groups, as parents often work far from their homes and commute long hours to workplaces. In RSA this is in part due to the legacy of apartheid urban planning but, in other cities, poor transport infrastructure and congestion add to long commuting times.

Despite the declared commitment to restore African value systems into social, state and business institutions, youth have become increasingly marginalized within fragmented social urban fabrics. For example, family structures have undergone fundamental changes as HIV-AIDS has taken effect, including the increase of child-headed households. National level policies and statements are not translating into effective support and guidance for the youth. Opportunities for youth to find meaningful roles in urban societies are lacking.[159] Nevertheless, they reveal strong creative streaks. They are able to generate unique and useful solutions to the problems they encounter, often creating opportunities where none existed before.

The other side of the coin is more troubling. Delinquency, malaise, illiteracy, criminal youth gangs, drug abuse, child rape, as well as the prevalence of diverse, transactional and often intergenerational sexual relationships[160] all combine to indicate an unsupported, purposeless youth disconnected from society and their social role within. While policy reform, strategies for youth inclusion, prioritizing poor youth, monitoring and evaluation and the coordination of youth movements[161] are common recommendations, the social rupture that persists between the majority youth and societies that do not fully understand the often conflicting values and terms on which the youth are developing is most pertinent. Without deeper, more robust understanding of this gap, policy-level initiatives by Southern African central and local governments are likely to encounter obstacles. The critical challenge is that society will evolve and change with its youth. A contemporary understanding is needed to assist Southern African urban youth participating in and negotiating the future that they are part of creating.

Private Sector and Public-Private Partnerships

In general, the private sector is relatively strong in Southern African cities and mobilizes around key issues such as crime and energy security. Moreover, it has the ability to mobilize large finances and the capacity to deliver on large projects. In RSA, a substantial amount of the urban management functions are controlled by private sector operators who service city improvement districts. Hence, the role of public-private partnerships needs to be scrutinized more closely in relation to the social contexts within which they operate. Public-private partnerships usually involve very large and often international companies partnering with government to roll out infrastructures at large scale (e.g. mass public transit systems). However, many opportunities also exist for engaging with key social problems such as unemployment and informality. Creating value chains that small- and medium-scale enterprises can access to exploit smaller scale opportunities should be prioritized in public-private partnerships.

Civil Society and Other Actors

A diverse range of civil society and other actors have adopted specific roles within the urban development agendas in Southern African cities, especially in RSA. Abahlali baseMjondolo,[162] which originated in eThekwini, focuses on "bottom-up" representation of shack dwellers. Shack Dwellers International[163] is also active in RSA's cities and focuses on leveraging local saving schemes and peer-to-peer exchange as mechanisms for supporting community-led development schemes. In Maputo, religious organizations have historically played a key role in providing social services and, in recent decades, many grassroots organizations have emerged to represent a variety of interests.[164] Beyond civil society, other actors have also emerged. For example, a range of "urban laboratories" have been established in RSA, which focus on everything from creative and artistic interventions in the city, to urban farming, technology pilot schemes, and facilitating inclusion and participation of communities in local development.

The African Centre for Cities,[165] which operates from the University of Cape Town, has established a range of "city labs" that focus on interventions in the city across a range of application areas. The Gauteng City Region Observatory[166] has been established as an urban observatory for the city-region. It seeks to monitor and measure factors such as demographics, spatial change and material flows that are critical for enhanced, more sustainable city management. The potential for similar actors to influence urban development in other cities in the sub-region is high, but depends on the extent of support that civil society, universities, government and donor institutions are willing to devote to urban challenges.

6.6
Emerging Issues

Kanyama, a high-density settlement bordering the central business district in Lusaka, Zambia's capital. Changing rainfall patterns have resulted in an increase in the intensity and frequency of floods in Kanyama and neighbouring shantytowns. **©Ephraim Nsingo/IPS**

Disaster Risk Reduction

Urban areas within Southern Africa are increasingly vulnerable to disasters. It is estimated that flood-related disasters affected 3.43 million in Mozambique, 310,000 in Zimbabwe and 90,000 in RSA between 1999 and 2004, many of whom were poor urban dwellers.[167] Disasters such as the 2007 drought in Lesotho and the January 2012 tropical depression "Dando", followed by cyclone "Funso", have impacted almost all Southern African areas. Such events create cascading adverse impacts on food security, health, economic activity, housing, settlements, critical urban infrastructure and key urban functions. Inadequate early warning systems; lack of preparedness; as well as outdated and insufficient land use planning and building codes increase risk, especially for the poor and vulnerable in cities.[168] Further, as urban population and service provision pressures continue to mount in Southern Africa, low-level hazards are intensified through high social vulnerability levels.[169]

Although environmental change is a relatively new lens through which to assess and understand risk and vulnerability, a much longer tradition of disaster risk reduction exists, particularly relating to rural areas. Urban areas traditionally focused emergency planning on "civil defence," but this was broadened to disaster risk reduction from the 1990s onwards. This perspective has become more substantive in recent times, predominantly driven by climate change concerns.[170] The disaster risk reduction approach tends to view climate change as just one contributor to vulnerability and risk,[171] whereas the climate change adaptation approach concentrates on similarities and overlaps with disaster risk reduction (regarding extreme events) as well as distinctive slow-onset, semi-permanent changes such as sea level rise or rising temperatures.[172] However, vulnerability and resilience analyses, as well as explicitly human security considerations, are core concerns of disaster risk reduction and climate change adaptation and face similar challenges. These include inadequate political will; lack of financial support for mainstreaming; and lack of investment in preventative and proactive measures to reduce vulnerability to probable future threats and vulnerability drivers. Until recently the two agendas have developed somewhat independently, leading to duplication of effort, policy incoherence, administrative challenges and wasted resources.[173]

Mozambique and RSA are two of Southern Africa's disaster risk reduction frontrunners. Mozambique's National Institute of Disaster Management focuses on establishing effective emergency coordination and a new preventative and proactive perspective rather than relying on traditionally reactive

disaster risk reduction tendencies. The annual contingency plans have been institutionalized and are included in the state general budget. The Mozambique government approached a new master plan for the mitigation and prevention of natural disasters in March 2006, prioritizing vulnerability reduction amongst marginalized communities most disproportionately exposed to natural disasters.[174]

In RSA, disaster management is now guided by legislation and policy, hailed as being amongst the most advanced in the world. The formulation of the Disaster Management Act of 2002 was influenced by international disaster risk reduction policy, as well as a series of large-scale flood and drought disasters throughout the 1990s.[175]

Since enforcement in January 2003, the Act has been introduced in different government spheres, including at the municipal level in 2004, requiring local governments to develop disaster management frameworks in accordance with the Act and provincial level frameworks. Revised disaster management legislation signifies a shift from traditional reactive and *ad hoc* disaster response to an emphasis on prevention and vulnerability reduction, as well as mainstreaming disaster risk reduction across sectors.

Despite notable progress in disaster risk reduction policy and programmes of action, local authorities across Southern Africa are struggling to implement new disaster management legislation and institutionalize a proactive and integrated disaster management culture. Most of the challenges are institutional and capacity (especially financial) issues, particularly since disaster management functions still do not generally occupy strategic positions within local authorities.[176] Moreover, emerging disaster risk reduction policy in the Southern African context does not give adequate specific attention to urban areas, despite the fact that these contexts concentrate vulnerable populations and infrastructure. A further major concern is that there remains a lack of meaningful information exchange and sharing of lessons learned on disaster risk reduction in practice across the region.

At local scales, considerable variation in understanding of disasters complicates disaster risk reduction. The institutionalized understanding of disaster management as primarily a welfare role and a political tool to provide people with "blankets and baked beans" after a disaster, is difficult to shift.[177] Moreover, disaster management functions within local authorities are often assigned responsibility for a complex array of activities from security for mega-sporting and political events, to relief and reconstruction for broad-ranging disasters. A further major constraint is that, presently, local disaster risk management responsibilities remain largely reactive, whereas climate change adaptation requires proactive planning and action.[178] Such mismatches undermine disaster management effectiveness.

At the city scale - in Maputo, Cape Town and eThekwini, for example - certain departments are trying to shift understandings of disaster management through highlighting its pivotal cross-cutting role. Overcoming this "silo" effect (see also Section 6.3) is a widespread institutional priority for integrated approaches. Such actions are essential since, without fully functional and proactive disaster management systems within cities, resilience and reduced vulnerability of urban dwellers cannot be achieved. A proactive and strategic disaster management function is a lynchpin of long-term adaptation that needs to be supported by higher government tiers. Yet, conflicting attitudes and perceptions towards disaster management, as well as fragmented roles and responsibilities within and between governance levels, create formidable barriers. In urban centres across Southern Africa, disaster risk reduction remains largely reactive and *ad hoc* in nature, with weak disaster planning capacity and effectiveness.

Synergies, Challenges of Developing Paths to Green Urban Development

Historical patterns of urban development in the region have created unsustainable forms of urbanism. This is especially the case in countries where there is suburban sprawl, in which high-income residents live at low densities on large plots occupying a substantial proportion of the total urban land area at one extreme; and small, very densely populated low-income areas on, or near, the urban periphery at the other. Although some rail and bus transport services have been maintained in order to serve the low-income communities, middle and high-income populations have come to rely almost exclusively on private cars, often making numerous single-purpose journeys and contributing to increasingly severe traffic congestion.

Rising land and development costs, congestion costs (including time loss and adverse effects on human health), increasing prices of fuel and other factors have combined to raise awareness of the need to reduce mobility demand through redesigning urban areas. Some initial attempts have been made to design new suburbs and experimental settlements according to such principles, including compact living and multifunctional zoning. However, redesigning existing areas will be a slower and more piecemeal process.[179] So far, however, there has been some reluctance by local authorities to undertake a fundamental overhaul of town planning codes and zoning principles, partly on account of the vested interests involved and partly since this would be a complex and expensive activity. More broadly, there remains a widespread view in Africa that environmental considerations and the promotion of sustainability represent elite interests - a luxury that cannot be afforded until the priority issues of poverty and unemployment have been overcome. While understandable, this perspective reflects a conviction that development and the environment are conflicting and mutually exclusive agendas. This is, in many respects, a legacy of old-style wildlife and environmental conservation efforts where privileged endangered species or habitats took precedence over the needs and priorities of poor local rural residents. In fact, projects and broader schemes in diverse contexts have demonstrated that local inhabitants can, and should, benefit from involvement in appropriately conceived and implemented green economic and social projects.[180]

Environmental quality varies greatly at the intra-urban scale, with the poor generally living in the least safe and most unhealthy areas. These are precisely the people and areas most vulnerable to the impacts of environmental change. The poor suffer most from air pollution due to smoke and fume-emitting fuels in their homes, in their journeys to work, and possibly in their work environments. They are far more likely to drink unsafe water if living beyond the piped water network or when such supplies are interrupted. Seen in these terms, attending to urban environmental quality and combating environmental change through mitigation and adaptation interventions are no luxury. Rather, they are a necessity with considerable public health and livelihoods benefits, not least to the urban poor, as well as averting or reducing the magnitude of even more serious hazards in future.

Pressure from national governments to demonstrate commitments to international climate change and environmental agreements have generated champions in specific local authorities with the leverage to initiate various climate actions to mitigate greenhouse gas emissions, promote adaptive schemes, or both. The most attractive have been those that are relatively straightforward and cheap to implement, such as "green roofs" and promotion of urban and peri-urban agriculture (see Text Box 6.2).

Other forms of greening, linked to the rehabilitation or development of new recreational areas, can greatly enhance amenities in high density areas often lacking playgrounds, sports fields and the like, while sequestering carbon and making the environments more liveable. One such scheme, Greening Soweto in the City of Johannesburg, involved the planting of some 200,000 trees and development of recreational areas including a multifacility Eco-Park by early 2010. Similar programmes are now being undertaken in other high density areas like Alexandra and Orange Farm, while at the municipal scale, eThekwini's D'MOSS green urban infrastructure network is distinctive.

Some further important interventions include changing building codes to promote the use of lower carbon materials; ensure increased energy efficiency through greater use of natural light, ventilation and improved insulation of hot water pipes, walls and roof spaces; reduce heat absorption by roofs, or in colder environments, exploit the potential of combined heat and power systems or their equivalent. Encouragement should also be given to design modifications that maximize the potential of "green roof" cultivation facilities in new construction.[181]

Retrofitting existing buildings with improved insulation and low-energy lights and other appliances has demonstrated substantial benefits internationally and is now being undertaken by some local authorities and private firms in the region. Painting roofs silver or white increases reflectivity and hence reduces heat absorption under hot conditions, reducing temperature and hence heat stress or the need for air conditioning. In aggregate, many such treated roofs combined with green roofs and other city greening interventions can help reduce heat island effects. At scale, retrofitting and greening activities have the additional benefit of providing significant new employment opportunities in the manufacture and import of the new materials, as well as appliances and their installation and maintenance. Replacement of ordinary incandescent light bulbs in street lighting and public buildings in large cities with low-energy equivalents is saving considerable amounts of electricity and emissions.[182]

The leading innovator in this sphere within Southern Africa is the Green Building Council of South Africa, established in 2007 and operating a Green Star SA system for new and retrofitted buildings based on a modified version of the Australian Green Star system. A key resource is the online rating tools available for different categories of building, which advice on appropriate materials and products.[183] The Green Building Council of South Africa led the country's first "green street" retrofit of 30 low-income houses in Cato Manor (eThekwini), ahead of the COP17 global climate change summit in 2011. The retrofit was carried out to demonstrate energy, health and socioeconomic improvements achievable through fitting ceilings, using low energy lighting, growing food in kitchen gardens and the like.[184] However, despite the project's success, it remains localized as it has not yet been scaled-up or rolled out across other areas to any significant extent.

Another category of mitigation intervention, relatively inexpensive but yielding multiple benefits, is priority bus ways. Johannesburg's Rea Vaya bus rapid transit scheme, for example, is designed to cut emissions and acute traffic congestion by making public transport attractive in a city where many residents have long relied almost exclusively on private transport. The scheme involves dedicated priority bus lanes – including a heavily patronized link between densely populated Soweto and the city centre – for a fleet of low-sulphur diesel buses. These vehicles are capable of saving 1.6 million ton of carbon dioxide equivalent by 2020 if 15 per cent of car drivers near the priority routes opt for its use.[185] Other mitigation schemes include retrofitting municipal buildings for energy efficiency and the recovery of methane gas from landfill sites.[186]

The high-speed Gautrain linking OR Tambo International Airport to key points on the Johannesburg-Tshwane urban spine was pushed through for the FIFA World Cup Soccer in 2010. However, its longer term benefits in terms of urban integration, congestion reduction and hence greenhouse gas mitigation will remain limited unless the network is extended to additional population and commercial nodes.

These examples aside, the Southern Africa region's large cities are conspicuous for their lack of mass rapid transit systems, apart from commuter railway services of variable standards linking high density townships to city centres and other employment nodes in the metropolitan areas. Some schemes are now under consideration and climate action might yet (including through innovative international financing mechanisms) provide the added stimulus needed in view of the high capital cost. If such networks are then integrated with other elements of green infrastructure and economic interventions, the cities might become more sustainable.[187]

ENDNOTES

1 In this report, Angola is primarily covered in the Central Africa chapter but where required for functional review it is also discussed in the present chapter. For population data, however, Angola remains in Central Africa as per the UNDESA classification and is not included in the data for the Southern African sub-region.

2 However, oscillating and other forms of rural-urban mobility remain strong, so that the place of residence recorded in censuses does not accurately reflect many people's life worlds.

3 African Development Bank. (2012). Africa Economic Outlook. Gabon: Overview, Accessed from www.africaneconomicoutlook.org/en/countries/central-africa/gabon/ on 02 September 2012

4. World Urbanization Prospects: The 2011 Revision, UNDESA, (New York, 2012).

5 WESGRO (2012). *BPO: Outsourcing support and connecting the global economy*, Available at: http://wesgro.co.za/investor/sectors/bpo, accessed 25 July 2012.

6 UN-Habitat (2010). *State of African Cities 2010; Governance, inequality and urban land markets*. (Nairobi, 2010), Pp. 234-6.

7 World Bank (2007) *IDA At Work: Private sector development – Encouraging investments and economic growth in Mozambique,* http://web.worldbank.org/wbsite/external/extaboutus/ida/0,,contentMDK:21321646~menuPK:3266877~pagePK:51236175~piPK:437394~theSitePK:73154,00.html, accessed 7 July 2012.

8 Jenkins, P. and Wilkinson, P. (2002). *Assessing the growing impact of the global economy on urban development in southern African cities*, in *Cities,* vol. 19, no. 1, 33-47.

9 Cornelissen, S. (2011). *More than a Sporting Chance? Appraising the sport for development legacy of the 2010 FIFA World Cup*, in *Third World Quarterly,* vol. 32, no. 3, 503-529; Olivier, S. (2011). *FIFA 2010 – Economic impact one year later*, Communicate Blog, 3 October. www.communicate.co.za/_blog/Communicate_Blog/post/FIFA_2010_%E2%80%93_Economic_impact_one_year_later/, accessed 26 July 2012.

10 Bond, P. (2010). A *Political Economy of the South African World Cup, 2010*, PowerPoint presentation. Available at: www.amandlapublishers.co.za/home-page/304-a-political-economy-of-the-soccer-world-cup-2010, accessed 25 July 2012; Bond, P. (2011). *Politics of Climate Justice: Paralysis above, movement below*, (Durban, UKZN Press).

11 UN-Habitat (2010). *State of African Cities 2010; Governance, inequality and urban land markets*. (Nairobi, 2010).

12 SADC/UNEP. (2010). *Southern Africa sub-regional framework on climate change programmes report*, First Draft – Working Document, February, 2010. P. 7.

13 NCAR. (2005). A *continent split by climate change: new study projects in Southern Africa, Rain in Sahel*, National Centre for Atmospheric Research Press Release, May 24 2005 (Boulder, CO). In: SADC/UNEP. (2010). *Southern Africa sub-regional framework on climate change programmes report*, First Draft – Working Document, February, 2010.

14 Satterthwaite, D, Huq, S, Reid, H, Pelling, M. and Romero Lankao, P. (2009). *Adapting to climate change in urban areas: the possibilities and constraints in low- and middle-income nations*, in J. Bicknell, D. Dodman and D. Satterthwaite, eds., *Adapting Cities to Climate Change: Understanding and addressing the development challenges* (London, Earthscan), pp. 3-47.

15 IPCC. (2007). *Climate Change 2007: Impacts, adaptation and vulnerability; Working Group II contribution to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge, CUP).

16 IPCC. (2012). *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*. Special Report of the Intergovernmental Panel on Climate Change (Cambridge, CUP).

17 Jenkins, P. (2011) *Maputo and Luanda*, in Bekker S. and Therborn G. eds., *Capital Cities in Africa; power and powerlessness*, Pretoria and Dakar, Human Science Research Council and CODESRIA), pp. 141-166; Junior, P. and Oballa, B. (2011). *Cities in Climate Change Initiative: Maptuo, Mozambique*, Box 6.3, in Rosenzweig C., Solecki W., Hammer S. and Mehrotra S. eds., *Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network* (Cambridge, CUP), p. 156.

18 Kemp, L., Fairhurst, L., Rowswell, P., and Quayle, T. (2011) *Sub-Saharan African Cities: A five-City Network to Pioneer Climate Adaptation through Participatory Research & Local Action: Maputo Baseline Study*, Cape Town: ICLEI, p. 30

19 Hilia Hitula, Walvis Bay Town Planner, pers. comm., 27 June 2012.

20 UN-Habitat (2010). *State of African Cities 2010: Governance, inequality and urban land markets*. (Nairobi,2010). P. 229.

21 ICLEI (2011). Summary of *Sub-Saharan African Cities: A Five-City Network to Pioneer Climate Adaptation through Participatory Research and Local Action* (Cape Town: ICLEI), Available at: www.iclei.org/index.php?id=africa-adaptation, accessed 30 July 2012.

22 Brundrit, G. and Cartwright, A. (2012). *Understanding the risks to Cape Town of inundation from the sea*, in Cartwright A., Parnell S., Oelofse G. and Ward S. eds., *Climate Change at the City Scale: Impacts, mitigation and adaptation in Cape Town* (London, Earthscan/Routledge), pp. 21-37.

23 Colenbrander, D., Sutherland, C., Oelofse, G., Gold, H. and Tsotsobe, S. (2012). *Reducing the pathology of risk: Developing an integrated municipal coastal protection zone for the City of Cape Town*, in Cartwright A., Parnell S., Oelofse G. and Ward S. eds., *Climate Change at the City Scale: Impacts, mitigation and adaptation in Cape Town* (London, Earthscan/Routledge), pp. 182-201.

24 IPCC. (2007).*Climate Change 2007: Impacts, adaptation and vulnerability; Working Group II contribution to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge, CUP).

25 GSDRC (2009). *Climate change and Zimbabwe*, Governance and Social Development Resource Centre, 2 October 2009.

26 Rosenzweig, C, Solecki, W., Hammer, S., and Mehrotra, S. eds. (2011). *Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network* (Cambridge, CUP). pp. 56-57.

27 De Wit, M., Stankiewicz, J. (2006). *Changes in surface water supply across Africa with predicted climate change*, in *Science*, vol. 311, 31 March 2006.

28 Heath, T., Parker, A., Weatherhead, K. (2010). *How to Climate Proof Water and Sanitation Services in the Peri-Urban Areas in Lusaka*, Water and Sanitation for the Urban Poor (WSUP), Cranfield University.

29 City of Johannesburg (2012). *Climate change affects health*, Available at: www.joburg.org.za/index.php?option=com_content&view=article&id=7972&catid=88&Itemid=266, accessed 28 July 2012.

30 *Ibid*.

31 Turton, A. 2008. *Three Strategic Water Quality Challenges that Decision-Makers Need to Know About and How the CSIR Should Respond*. CSIR Report CSIR/NRE/WR/EXP/2008/0160/A. Keynote address, *A Clean South Africa*, presented at the CSIR Conference "Science Real and Relevant", 18 November 2008. Pretoria: Council for Scientific and Industrial Research (CSIR). Available at: www.bosparra.com/wp-content/uploads/2008/11/banned_csir2008.pdf.

32 Battersby, J. (2012) *Urban food security and climate change: a system of flows,* in Frayne B, Moser C. and Ziervogel G. eds., *Climate Change, Assets and Food Security in Southern African Cities (London, Earthscan*/Routledge), pp. 35-56.

33 Kisner, C. (2008). *Green Roofs for Urban Food Security and Environmental Sustainability: Urban agriculture case study: Harare, Zimbabwe*. Available at: www.climate.org/topics/international-action/urban-agriculture/harare.htm accessed 28 July 2012.

34 *Ibid*.; City of Johannesburg (2011a). *Gauteng looks at climate issues*, Available at: www.joburg.org.za/index.php?option=com_content&view=article&id=7519:gauteng-looks-at-climate-issues&catid=88:news-update&Itemid=266, accessed 28 July 2012; eThekwini Municipality. (2012). *Green roof*, Available at: www.durban.gov.za/City_Services/development_planning_

ENDNOTES

management/environmental_planning_climate_protection/Projects/Pages/Green-Roof.aspx, accessed 28 July 2012.

35 Raimundo, I. and Frayne, B. (2012). *Impacts of climate change on migration and food security in Maputo, Mozambique*, in Frayne B., Moser C. and Ziervogel G. eds., *Climate Change, Assets and Food Security in Southern African Cities* (London, Earthscan/Routledge, pp. 96-109).

36 Simatele, D. (2012). *Asset adaptation and urban food security in a changing climate; a case study of Kalingalinga and Linda compounds in Lusaka, Zambia*, in Frayne B., Moser C. and Ziervogel G. eds., *Climate Change, Assets and Food Security in Southern African Cities* (London, Earthscan/Routledge, pp. 110-131).

37 Du Pisani, P. (2012). *Water supply as essential building block for the planning of cities: the Windhoek experience*; Heyns, P. (2012). *Strategic water resources development to meet urban and industrial demand in Namibia*, Papers presented to the First National Conference on Strategic Spatial Planning for Urbanisation, Namibian Institute of Town and Regional Planners and University of Namibia, Windhoek, 26-28 June.

38 Gwebu, T. (2002). *Urban water scarcity management: civic v state response in Bulawayo*, in *Habitat International*, vol. 26, no.3, pp. 417-431; Musemwa, M. (2006). *Disciplining a 'dissident' city: hydropolitics in the city of Bulawayo, Matabeleland, Zimbabwe, 1980-1994,* in *Journal of Southern African Studies*, vol. 32 no. 2, pp. 239-254.

39 Academy of Science of South Africa. (2011). *Towards a low carbon city, focus on Durban* (Pretoria, ASSAf). Page 63.

40 Joubert, L. (2008). *Boiling Point: People in a Changing Climate,* (Johannesburg, Wits University Press).

41 Simon, D, and Leck, H. (2010). *Urbanizing the global environmental change and human security agendas*, in *Climate and Development*, vol. 2, pp. 263-275.

42 Barnett, J. (2006). *Climate Change, Insecurity and Injustice*, in Adger W., Paavola, J., Huq S. and Mace M. eds., *Fairness in Adaptation to Climate Change* (Cambridge, MA and London, MIT Press), pp. 115-130.

43 Roberts, D. (2008). *Thinking globally, acting locally-institutionalizing climate change at the local government level in Durban, South Africa*, in *Environment and Urbanization,* vol. 20, no. 2, pp. 521-537; Scott, D. and Oelofse, C. (2009). *The politics of waiting: environmental governance in South Africa*, paper presented at the Association of American Geographers' Annual Conference, Las Vegas, 22 – 27 March; Leck, H. and Simon, D. (2013) *Fostering multi-scalar collaboration and co-operation for effective governance of climate change adaptation* in *Urban Studies* 50(6), pp. 1221-1238. Available at: http://usj.sagepub.com/content/early/2012/10/26/0042098012461675.full.pdf+html, Online First 26 October 2012.

44 Leck, H. and Simon, D. (2013) *Fostering multi-scalar collaboration and co-operation for effective governance of climate change adaptation,* in *Urban Studies* 50(6), pp. 1221-1238.

45 UN-Habitat (2010). *State of African Cities 2010; Governance, inequality and urban land markets*. (Nairobi, 2010).

46 Angola National Adaptation Programme of Action under the UNFCC Framework Convention on Climate Change (UNFCCC) 2011. Available at http://unfccc.int/resource/docs/napa/ago01.pdf.

47 Rosenzweig, C, Solecki, W., Hammer, S., and Mehrotra, S. eds. (2011). *Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network* (Cambridge, CUP).

48 Cameron, R. (2005). *Metropolitan restructuring (and more restructuring) in South Africa*, in *Public Administration and Development*, vol. 25, no. 4, pp. 329-339; Rosenzweig C, Solecki W., Hammer S., and Mehrotra, S. eds. (2011). *Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network* (Cambridge, CUP). Page 255.

49 Hove, H., Echeverría, D. and Parry, E. (2011). *Review of Current and Planned Adaptation Action: Southern Africa*. Available at www.preventionweb.net/english/professional/publications/v.php?id=25313; Simon, D. (2012) *Climate change challenges* in Saunders, S., Dzinesa, G.A. and Nagar, D., eds. *Region-Building in Southern Africa: Progress, problems and prospects* (London, Zed Books), pp.230-248.

50 Roberts, D. (2008). *Thinking globally, acting locally-institutionalizing climate change at the local government level in Durban, South Africa*, in *Environment & Urbanization,* vol. 20, no. 2, pp. 521-537.

51 *Ibid*., pp. 521-537; Carmin, J, Anguelovski, I. and Roberts, D. (2012). *Urban Climate Adaptation in the Global South: Planning in an Emerging Policy Domain*, in *Journal of Planning Education and Research*, vol. 32, no. 1, pp. 18-32.

52 Durban Climate Change Strategy. Website: http://www.dccs.org.za/.

53 Roberts, D. (2010). *Prioritizing climate change adaptation and local level resilience in Durban, South Africa*, in *Environment and Urbanization, vol.* 22, no. 2, pp. 397-413.

54 *Ibid*. pp. 397-413; Academy of Science of South Africa. (ASSAf). (2011). *Towards a low carbon city, focus on Durban* (Pretoria, ASSAf); Carmin, J, Anguelovski, I. and Roberts, D. (2012). *Urban Climate Adaptation in the Global South: Planning in an Emerging Policy Domain*, in *Journal of Planning Education and Research*, vol. 32, no. 1, pp. 18-32.

55 Durban Adaptation Charter. Website: www.durbanadaptationcharter.org/.

56 Roberts D., Boon R., Diederichs N., Douwes E., Govender N., Mcinnes A., Mclean C., O'Donoghue S. and Spires M. (2012). *Exploring ecosystem-based adaptation in Durban, South Africa : 'Learning-by-doing' at the local government coal face*, in *Environment & Urbanisation*, 24(1), 167-195. DOI: 10.1177/0956247811431412.

57 Roberts, R. and Diederichs, N. (2002). *Durban's Local Agenda 21 programme: tackling sustainable development in a post-apartheid city*, in *Environment and Urbanization*, vol. 14, no. 2, pp.189-201.

58 Cartwright, A., Parnell, S., Oelofse, G. and Ward, S., eds., (2012). *Climate Change at the City Scale: Impacts, mitigation and adaptation in Cape Town"* (London, Earthscan/Routledge).

59 Leck, H.J. (2012). *Rising to the Adaptation Challenge? Responding to global environmental change in eThekwini and Ugu Municipalities, South Africa*, unpublished PhD thesis, Dept. of Geography, Royal Holloway, University of London; Scott, D., Sutherland, C., Schiermeyer, E. and Leck, H. (2012). *A critical analysis of the contribution of municipal low carbon lifestyle innovations to sustainable development: Durban, South Africa*, in Pelfini A., Fulquet G. and Beling A. eds., *La Energía de los Emergentes. Innovación y cooperación para la promoción de energías renovables en el Sur global (*Buenos Aires, FLACSO Argentina)

60 Nel, E., Hill, T. and Maharaj, B. (2003). *Durban's pursuit of economic development in the post-apartheid era*, in *Urban Forum,* vol. 14, no. 2-3, pp. 223-243.

61 Hart, G. (2002). *Disabling Globalization: Places of Power in Post-Apartheid South Africa*. Pietermaritzburg, University of Natal Press; Huchzermeyer, M. (2004). *Unlawful Occupation: Informal Settlements and Urban Policy in South Africa and Brazil* (Asmara, Africa World Press).

62 Robinson, J. (2008). *Continuities and discontinuities in South African local government*, in Van Donk and others, eds., *Consolidating Developmental Local Government: Lessons from the South African Experience* (Cape Town, UCT Press), pp. 27-50.

63 SACN (2011). *State of the Cities Report (*Cape Town, South African Cities Network).

64 Reid, P. and Vogel, C. (2006). *Living and responding to multiple stressors in South Africa-Glimpses from KwaZulu-Natal*, in *Global Environmental Change,* vol. 16, no. 2, pp. 195-206; Ziervogel, G., Bharwani, S., Downing, T. (2006). *Adapting to climate variability: Pumpkins, people, policy,* in *Natural Resources Forum,* vol. 30, no. 4, pp. 294-305; Drimie, S. and Quinlan, T. (2009). *Taking Stock of the Southern African Vulnerability Initiative*, International Human dimensions Programme on Global Environmental Change (IHDP), IHDP Update, Issue 2, June.

65 Bartlett, S. (2009). *Children in the Context of Climate Change: A Large and Vulnerable Population*, in G. M. Guzman, G. Martine, G. McGranahan, D. Schensul and C. Tacoli, (eds.). *Population Dynamics and Climate Change*

ENDNOTES

(London and New York, International Institute for Environment and Development (IIED) and United Nations Population Fund (UNFPA)) , pp. 133-148.

66 WFP (2012). *Lesotho Overview, World Food Programme*, Available at: www.wfp.org/countries/Lesotho/Overview, 27 July 2012.

67 Hove, H., Echeverría, D. and Parry, E. (2011). *Review of Current and Planned Adaptation Action: Southern Africa*, available at www.preventionweb.net/english/professional/publications/v.php?id=25313.

68 Schiermeyer, E. (2011). *Addressing Barriers to Environmental Citizenship: a comparative socio-ecological study on urban environmental education,* unpublished M.Soc.Science Thesis, School of Development Studies, University of KwaZulu-Natal, Durban.

69 Alber, G. (2009). *Gender and climate change policy*, in G. Guzman, G. Martine, G. McGranahan, D. Schensul and C. Tacoli, eds., *Population Dynamics and Climate Change* (London and New York, International Institute for Environment and Development (IIED) and United Nations Population Fund, pp. 149-163.

70 *Ibid*.

71 O'Brien, K., Sygna, L., Leichenko, R., Adger, W.N., Barnett, J., Mitchell, T., Schipper, L., Tanner, T., Vogel, C., and Mortreux, C. (2008). *Disaster Risk Reduction, Climate Change Adaptation and Human Security*, Report prepared for the Norwegian Ministry of Foreign Affairs by the Global Environmental Change and Human Security (GECHS) Project, GECHS Report 2008: 3.

72 Pelling, M. (2003). *The Vulnerability of Cities: Natural disasters and Social Resilience.* (London, Earthscan), p 61.

73 *Ibid*.

74 Mamdani, M. (1996). "*Citizen and subject: contemporary Africa and the legacy of late colonialism."* (Princeton Academic Press). p 60.

75 UNDESA (2011). *World Urbanisation Prospects: the 2011 revision*, UNDESA, Population Division, April 2011.

76 Cain, A. (2012). *Post-war urban land markets in Luanda, Angola*, presented by Development Workshop Angola to the World Bank Conference on Land and Poverty, Washington, 23-26 April 2012.

77 Foley, F. (2007). *Land rights in Angola: poverty and plenty*, Humanitarian Policy Group (HPG) Working Paper, November 2007.

78 Cain, A. (2012). *Post-war urban land markets in Luanda, Angola*, presented by Development Workshop Angola to the World Bank Conference on Land and Poverty, Washington, 23-26 April 2012.

79 *Ibid.*

80 Negráo, J. (2004). *Urban land markets in Mozambique*, Cruzeiro do Sul, Research Institute for Development, Maputo, University Eduardo Mondlane / UN-Habitat, accessed 9 November, 2011, Available at: www.unhabitat.org/downloads/docs/10787_1_594342.pdf.

81 Rakodi, C. (2007). *Land for housing in African cities: are informal delivery systems institutionally robust and pro-poor*?, in *Global Urban Development*, vol. 3, Issue 1, November, 2007.

82 African Development Bank. (2012). African Statistical Yearbook 2012, Addis Ababa, Economic Commission for Africa.

83 Rakodi, C. (2007). *Land for housing in African cities: are informal delivery systems institutionally robust and pro-poor*?, in *Global Urban Development*, vol. 3, Issue 1, November, 2007.

84 *Ibid.*

85 *Ibid*

86 UN-Habitat (2010/2011). *State of the World's Cities: Bridging the Urban Divide*, Nairobi, 2011.

87 UN-Habitat. (2010). *State of African Cities 2010; Governance, inequality and urban land markets*. (Nairobi,2010), p. 226.

88 Watson, V. (2009). The *planned city sweeps the poor away …: urban planning and 21st Century urbanisation*, in *Progress in Planning*, vol 72, p.151-193.

89 Landman, K. (2000). *Gated communities and urban sustainability: taking a closer look at the future*, paper presented at 2nd Southern African Conference on Sustainable Development in the Built Environment – Strategies for a Sustainable Built Environment, Pretoria, South Africa, 23-25 August 2000.

90 Spinks, C. (2001). *A new Apartheid? urban spatiality, (fear of) crime, and segregation in Cape Town, South Africa*, Development Studies Institute, London School of Economics, September 2001.

91 SACNET (2008). *Securing municipal finances in Southern Africa*. Southern African Cities Network/ Cities Alliance, website (last accessed 13 August 2013): Available at:www.citiesalliance.org/sites/citiesalliance.org/files/sacn%20final.pdf.

92 UN-Habitat (2007). *Lusaka urban profile*. UN-Habitat, Page 14 (Source: Lusaka City Council July 2006). (2007).

93 Lindell, I. (2008). *Multiple sites of urban governance: insights from an African city*, in *Urban Stud*; 45; 1879, website (last accessed 15 August 2013): Available at: http://usj.sagepub.com/cgi/content/abstract/45/1879.

94 GUI (2009). *Global Urban Indicators – Selected Statistics: Monitoring the Habitat Agenda and the Millennium Development Goals*, Global Urban Observatory, November 2009. Table 7.

95 *Ibid.* Tables 26 &27.

96 African Development Bank. (2009). *African Statistical Yearbook 2009*. Addis Ababa, Economic Commission for Africa, p 65.

97 SACNET (2010/11). *The financing of city services in Southern Africa*, South African Cities Network (Johannesburg). p 10.

98 *Ibid*, p 16.

99 GUI (2009). *Global Urban Indicators – Selected Statistics: Monitoring the Habitat Agenda and the Millennium Development Goals*, Global Urban Observatory, November 2009. Table 12.

100 SACNET (2010/11). *The financing of city services in Southern Africa*, South African Cities Network (Johannesburg). p 44.

101 *Ibid,* Page 16.

102 *Ibid*, Page 39.

103 *Ibid*, Page 30.

104 SACNET (2011). *State of the city finances report 2011*, South African Cities Network (Johannesburg). Page 42.

105 Hendrix, C. and Glaser, S. (2005). *Trends and Triggers: Climate Change and Civil Conflict in Sub-Saharan Africa*. Paper presented at workshop on 'Human Security and Climate Change', Oslo, 21-23 June 2005; Turton, A. 2008. *Three Strategic Water Quality Challenges that Decision-Makers Need to Know About and How the CSIR Should Respond*. CSIR Report CSIR/NRE/WR/EXP/2008/0160/A. Keynote address, A Clean South Africa, presented at the CSIR Conference "Science Real and Relevant", 18 November 2008. Pretoria: Council for Scientific and Industrial Research (CSIR). Available at www.bosparra.com/wp-content/uploads/2008/11/banned_csir2008.pdf.

106 SACNET (2010/11). *The financing of city services in Southern Africa*, South African Cities Network (, Johannesburg). p 20.

107 This is as per the JMP definition of improved access to drinking water coverage and sanitation. For a more detailed definition of the distinction between improved and unimproved drinking water and sanitation coverage refer to the following online publication; WHO/UNICEF (2006). *Meeting the MDG drinking water and sanitation target. The urban and rural challenge of the decade*; Available at: www.who.int/water_sanitation_health/monitoring/jmpfinal.pdf.

108 GUI (2009). *Global Urban Indicators – Selected Statistics: Monitoring the Habitat Agenda and the Millennium Development Goals*, Global Urban Observatory, November 2009. Table 11.

109 Movik, S. (2012). *Fluid Rights: Water Allocation Reform in South Africa*. (Cape Town, HSRC Press).

110 Marais, H. (2011). *South Africa - Limits to Change: The Political Economy of Transition*. Revised Edition (London, Zed Books).

111 UN-Habitat (2010). *State of African Cities 2010; Governance, inequality and urban land markets*. (Nairobi, 2010). p 213.

112 Marais, H. (2011). *South Africa - Limits to Change: The Political Economy of Transition*. –Revised Edition (London, Zed Books).

113 Yende, S. (2012). *Protests are spiralling, study finds*, News 24 website, 17 June 2012. Available at: www.news24.com/SouthAfrica/News/Study-finds-protests-are-spiralling-20120617.

114 News 24. 2012. *Articles relating to protests*, News 24 Website, 27 July 2012. Available at: www.news24.com/Tags/Topics/protests.

115 Mukosa, C., Mwiinga, P.C. (2008). *Transboundary*

ENDNOTES

issues on sustainable hydropower development in the Zambezi river basin in the eyes of the Zambezi River Authority, A ZRA Presentation at the Ministry of Energy and Water Development, Zambia Hydropower Sustainability Assessment Forum Meeting: 4 September 2008, Kafue Gorge Regional Training Centre.

116 AFSUN (2010). *Pathways to insecurity: Urban food supply and access in Southern African cities*, Crush J., & Frayne, B. eds., in *Urban Food Security Series No.3.*, African Food Security and Urban Network (AFSUN).

117 *Ibid*, Table 7.

118 Frayne, B., Battersby-Lennard, J., Fincham, R. and Haysom, G. (2009). *Urban Food Security in South Africa: Case study of Cape Town, Msunduzi and Johannesburg*, Development Planning Division Working Paper Series No.15 , DBSA: Midrand.

119 Naylor, R. (2008). *The global food crisis exposes the fragility of sub-Saharan economic progress*, *Science*, 323, 239-240. In: McLachlan, M., Thorne, J. (2009). *Seeding change: a proposal for renewal of the South African food system*, Working Paper Series No 16, Development Planning Division, Development Bank of South Africa.

120 AFSUN (2010). *Pathways to insecurity: Urban food supply and access in Southern African cities*, Crush J., & Frayne, B. eds., in *Urban Food Security Series No.3.*, African Food Security and Urban Network (AFSUN). p 29; fig. 4.

121 Kutiwe, S., Boon, E., & Devuyst, D. (2010). *Urban agriculture in low income households of Harare: an adaptive response to economic crisis*, in *Journal of Human Ecology*, vol. 32, No. 2, pp. 85-96.

122 Crush, J., Hovorka, A. and Tevera, D. (2010). *Food security in Southern African cities: The place of urban agriculture*, in *Progress in Development Studies*, 11 (4): 285-305. Available at: http://pdj.sagepub.com/content/11/4/285.

123 AFSUN (2010). *Pathways to insecurity: Urban food supply and access in Southern African cities*, Crush J., & Frayne, B. eds., in *Urban Food Security Series No.3.*, African Food Security and Urban Network (AFSUN).

124 Crush, J., Hovorka, A. and Tevera, D. (2010). *Food security in Southern African cities: The place of urban agriculture*, in *Progress in Development Studies*, 11 (4): 285-305. Available at: http://pdj.sagepub.com/content/11/4/285.

125 Kutiwe, S., Boon, E., & Devuyst, D. (2010). *Urban agriculture in low income households of Harare: an adaptive response to economic crisis*, in *Journal of Human Ecology*, vol. 32, No. 2, pp. 85-96; Tshuma, D., and Mashoko, D. (2010). *Urban farming, it's relevance, sustainability and policy implications: a case study of Gweru and Masvingo urban areas*, in *Journal of Sustainable Development in Africa*, vol. 12, No. 3.

126 Tshuma, D., and Mashoko, D. (2010). *Urban farming, its relevance, sustainability and policy implications: a case study of Gweru and Masvingo urban areas*, in *Journal of Sustainable Development in Africa*, vol. 12, No. 3.

127 DGE (2010). *A Strategy for a Developmental Green Economy for Gauteng*, Report Prepared for the Gauteng Province Department of Economic Development, Gauteng Provincial Government, South Africa.

128 IEA (2002). *Energy and Poverty* in: *World Energy Outlook 2002*, IEA. International Energy Agency, Paris, France, In: MEA (2004); *Ecosystem services* in: *Southern Africa: a regional assessment*, Scholes, R. & Biggs, R. eds, The Regional-Scale Component of the Southern African Millennium Ecosystem Assessment, Millenium Ecosystem Assessment (MEA).

129 *Ibid.*

130 Peter, C., Swilling, M., du Plooy, P., de Wit, M., Wakeford, J., Lanz, J., Haysom, G., Kelly, C., Turton, A., Brent, A., Mason-Jones, K., Hansen, Y. and Cohen, B. (2011). *Greening the South African growth path: transitioning to sustainability*, Briefing Paper for Development Bank of South Africa (DBSA).

131 Urbach, J. (2013). *Medupi's hidden costs to our woes*, in *IOL news*, 2 August 2013, website (last accessed 15 August 2013): Available at: www.iol.co.za/news/medupi-s-hidden-costs-add-to-our-woes-1.1556961.

132 Muller, M. (2007). *Adapting to climate change: water management for urban resilience*, in *Environment & Urbanization*, vol. 19, No. 1, pp. 99-113, International Institute for Environment and Development.

133 *Ibid.*

134 Ramoeli, (2011). *Water for cities: responding to the urban challenge*, Terraviva, World Water Day Cape Town, Southern African Development Community (SADC), Inter-Press Services (IPS) Africa , South Africa 20 - 22 March 2011.

135 Friedman, T. (2009). *Hot flat and crowded – why the world needs a green revolution and how we can renew our global future* (Great Britain, Penguin).

136 Taylor, M., Ravilious, C. and Green, E. (2003) *Mangroves of East Africa* UNEP-WCMC Biodiversity Series No. 13. Banson, Cambridge.

137 Wong, C., Roy, M, Duraiappah, A.K. (2005). *Linkages between poverty and ecosystem services in Mozambique. Connecting Poverty and Ecosystem Services: Focus on Mozambique.* UNEP / IISD.

138 Gastrow, V. and Amit, R. (2012). *Elusive Justice: Somali traders' access to formal and informal justice mechanisms in the Western Cape*. ACMS Research Report. African Centre for Migration & Society, University of the Witwatersrand, Johannesburg

139 Sinclair, M., (1998). *Community, Identity, and Gender in Migrant Societies of Southern Africa: Emerging Epistemological Challenges*, in *International Affairs*, vol. 74, No. 2, pp. 339-353.

140 Comaroff, J. and Comaroff, J.L (2008). *Faith*, in Shepherd, N. and Robins, S. eds., *New South African Keywords* (Auckland Park, South Africa, Jacana Media).

141 Akindele, S., Gidado, T., and Olaopo, O. (2002). *Globalisation, its impact and consequences for Africa*, in *Globalisation*, vol. 2, No. 1, pp. 3-22.

142 Sumich, J. (2010). *Nationalism, Urban Poverty and Identity in Maputo*, Working Paper no 68, Crisis States Working Papers Series No. 2, Crisis States Research Centre, LSE, DESTIN Development Studies Institute, February, 2010. London, London School of Economics.

143 *Ibid*.

144 Crush, J., Hovorka, A. and Tevera, D. (2010). *Food security in Southern African cities: The place of urban agriculture*, in *Progress in Development Studies*, 11 (4): 285-305. Available at: http://pdj.sagepub.com/content/11/4/285.

145 Mbeki, M. (2012), *South Africa: only a matter of time before the bomb explodes*, in *Business Day*, 2011/02/10.

146 Bayat, A. (2000a). *From 'Dangerous Classes' to 'Quiet Rebels': Politics of the Urban Sub-Altern in the Global South*, in *International Sociology*, SAGE.

147 Swilling, M., Annecke, E. (2012). *Rethinking Urbanism*, in Just *Transitions: Explorations of Sustainability in an Unfair World*, Cape Town, Juta.

148 Sekhonyane, M., and Dugard, J. (2004). *A violent legacy: The taxi industry and government at loggerheads*, in *SA Crime Quarterly no 10*, December 2004.

149 Dobson, R. (2001). *Warwick Junction Urban Renewal Project* in *KZN-NIA Journal*, Issue 3, No. 26, p. 6.

150 Aitchison, J. (2012). *Youth and adult learning and education in Southern Africa: overview of a five nation study*, Open Society Initiative for Southern Africa (OSISA) International.

151 UN-Habitat (2010). *State of African Cities 2010; Governance, inequality and urban land markets*. (Nairobi, 2010). p 208: Table 6.1.

152 United Nations Youth, (2010-2011). *Regional Overview: Youth in Africa*, Website: www.social.un.org/youthyear.

153 *Ibid.*

154 Paratian, R., Bonnet, F., Romagny, P. (2006). *Socio-Economic Integration of Mozambican Youth into the Urban Labour Market: The Case of Maputo*, Ambassade France au Mozambique et au Swaziland, May 2006.

155 Wessels, M., Monteiro, C. (2006). *Psychosocial assistance for youth: toward reconstruction for peace in Angola*, in *Journal of Social Issues*, Vol. 62, No. 1, 2006, pp. 121-139.

156 Graham, L., Bruce, D., Perold, H. (2010). *Ending the Age of the Marginal Majority: An Exploration of Strategies to Overcome Youth Exclusion, Vulnerability and Violence in Southern Africa*, Southern Africa Trust. Page 21: Table 1.

157 Sommers, M. (2010). *Urban youth in Africa*, in *Environment & Urbanisation*, vol. 22, No. 2, pp. 317-332.

158 Graham, L., Bruce, D., Perold, H. (2010). *Ending*

ENDNOTES

the Age of the Marginal Majority: An Exploration of Strategies to Overcome Youth Exclusion, Vulnerability and Violence in Southern Africa, Southern Africa Trust. Table 1; Page 21.

159 *Ibid*.

160 Leclerc-Madlala, S. (2008). *Age-disparate and intergenerational sex in southern Africa: the dynamics of hypervulnerability*, in *AIDS*, vol. 22, Suppl. 4, pp. 517-525.

161 Sommers, M. (2010). *Urban youth in Africa*, in *Environment & Urbanisation*, vol. 22, No. 2, pp. 317-332.

162 Website (last accessed 15 August 2013): www.abahlali.org.

163 Website (last accessed 15 August 2013): www.sdine.org/country/south-africa/.

164 Lindell, I. (2008). *Multiple sites of urban governance: insights from an African city*, in *Urban Studies*; 45; 1879, website (last accessed 15 August 2013): Available at: http://usj.sagepub.com/cgi/content/abstract/45/1879.

165 Website (last accessed 15 August 2013): Available at: http://africancentreforcities.net/

166 Hodson, M. and Marvin, S. (2009). *Cities mediating technological transitions: understanding visions, intermediation and consequences*, in *Technology Analysis and Strategic Management*, vol. 21, No. 4, pp. 515–534.

167 ActionAid. (2006). *Unjust waters: Climate change, flooding and the protection of poor urban communities: experiences from six African cities*, Action Aid International. Available at: www.actionaid.org.uk/doc_lib/unjust_waters.pdf, Last accessed November 2010.

168 UN-Habitat. (2011). *Cities and climate change: Global report on human settlements*. Nairobi, 2011.

168 Satterthwaite, D, Huq, S, Reid, H, Pelling, M. and Romero Lankao, P. (2009). *Adapting to climate change in urban areas: the possibilities and constraints in low- and middle-income nations*, in J. Bicknell, D. Dodman and D. Satterthwaite, eds., *Adapting Cities to Climate Change: Understanding and addressing the development challenges* (London and Sterling, VA, Earthscan), pp. 3-47.

170 Pelling, M. (2003), *The Vulnerability of Cities: Natural Disasters and Social Resilience*, Earthscan, London, 256 pages; Pelling, M, and Wisner, B. (2009). *Disaster Risk Reduction: cases from urban Africa*. (London and Sterling, VA, Earthscan); Bacon, C. M. (2012). *Disaster risk and sustainable development*, in B. Wisner, J.C. Gaillard and I. Kelman, eds., *The Routledge Handbook of Hazards and Disaster Risk Reduction* (London and New York, Routledge), pp. 145-167.

171 Benouar, D., Diagne, K., Kiunsi, R., Sonsore, J., Pelling, M., Pharoah, R., Wisner, B., Ndiaye, A. and Yitambe, A. (2009). T*owards a safer urban future: Conclusions and recommendations*, in M. Pelling and B.Wisner, eds., *Disaster Risk Reduction: Cases from Urban Africa* (London, Earthscan), pp. 195–210.

172 Simon, D, and Leck, H. (2010). *Urbanizing the global environmental change and human security agendas*, in *Climate and Development*, vol. 2, pp. 263-275.

173 Mitchell, T. and Van Aalst, M. (2008). *Convergence of Disaster Risk Reduction and Adaptation*, Paper produced for a study commissioned by the UK Department for International Development (DFID), October 2008.

174 ActionAid. (2006). *Unjust waters: Climate change, flooding and the protection of poor urban communities: experiences from six African cities*, Action Aid International. Available at: www.actionaid.org.uk/doc_lib/unjust_waters.pdf, accessed November 2010.

175 Pelling, M, and Holloway, A. (2006). *Legislation for mainstreaming disaster risk reduction*, Tearfund.

176 Carmin, J, Anguelovski, I. and Roberts, D. (2012). *Urban Climate Adaptation in the Global South: Planning in an Emerging Policy Domain*, in *Journal of Planning Education and Research*, vol. 32, no. 1, pp. 18-32.

177 Leck, H.J. (2012). *Rising to the Adaptation Challenge? Responding to global environmental change in eThekwini and Ugu Municipalities, South Africa*, unpublished PhD thesis, Department of Geography, Royal Holloway, University of London.

178 Academy of Science of South Africa. (2011). *Towards a low carbon city, focus on Durban* (Pretoria, ASSAf).

179 Simon, D. (1999) *Rethinking Cities, Sustainability and Development in Africa*, in Kalipeni, E. and Zeleza, P.T., eds, *Sacred Spaces and Public Quarrels: African economic and cultural landscapes* (Trenton, NJ and Asmara, Africa World Press), pp. 17-41; Simon, D. (2001) *Equitable and Sustainable Urban Futures in Post-Apartheid Southern Africa*, in De Wet, C. and Fox, R., eds, *Transforming Settlement in Southern Africa* (Edinburgh, EUP), pp. 280-303.

180 Simon, D. (2013). *Climate and environmental change and the potential for greening African cities*, in *Local Economy* special issue on 'Resurgent African Cities?' vol. 28 no. 2, pp. 203-217.

181 Simon, D., Fragkias, M., Leichenko, R., Sánchez-Rodríguez, R., Seto, K.C. and Solecki, W. (2011) *The Green Economy and the Prosperity of Cities*, background paper for UN-HABITAT's *State of the World's Cities 2012/3* report.

182 *Ibid.*

183 Available at: www.gbcsa.org.za/rating-tools/green-star-sa-rating-system/

184 Available at: www.gbcsa.org.za/initiatives/energy/

185 City of Johannesburg (2011b). *Jozi stands up for the climate*, www.joburg.org.za/index.php?option=com_content&view=article&id=7526&catid=88&Itemid=266, accessed 28 July 2012.

186 Rosenzweig, C, Solecki, W., Hammer, S., and Mehrotra, S. eds. (2011). *Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network* (Cambridge, CUP). Page 253.

187 Simon, D. (2013). *Climate and environmental change and the potential for greening African cities*, in *Local Economy* special issue on *Resurgent African Cities?* vol. 28 no. 2, pp. 203-217.

Statistical Annex

TABLE 1: **TOTAL POPULATION BY MAJOR AREA, REGION AND COUNTRY, 1950-2050 (THOUSANDS)**

Major area, region, country or area	1950	1960	1970	1980	1990	2000	2010	2020*	2030*	2040*	2050*
Sub-Saharan Africa	179,766	222,478	285,063	374,705	495,136	641,566	822,724	1,046,989	1,303,018	1,587,538	1,891,711
Africa	229,895	286,729	368,148	482,803	635,287	811,101	1,022,234	1,278,199	1,562,047	1,869,561	2,191,599
Northern Africa	**50,129**	**64,251**	**83,085**	**108,098**	**140,151**	**169,535**	**199,511**	**231,210**	**259,029**	**282,024**	**299,888**
Algeria	8,753	10,800	13,746	18,811	25,299	30,534	35,468	40,180	43,475	45,490	46,522
Egypt	21,514	27,903	35,923	44,952	56,843	67,648	81,121	94,810	106,498	116,232	123,452
Libya	1,029	1,349	1,994	3,063	4,334	5,231	6,355	7,083	7,783	8,360	8,773
Morocco	8,953	11,626	15,310	19,567	24,781	28,793	31,951	35,078	37,502	38,806	39,200
Sudan	6,336	8,319	10,908	15,097	20,457	27,556	33,604	41,823	50,755	59,740	68,391
Tunisia	3,530	4,221	5,127	6,457	8,215	9,456	10,481	11,518	12,212	12,533	12,649
Western Sahara	14	33	77	150	221	315	531	718	805	863	901
Western Africa	**70,451**	**85,611**	**107,374**	**139,766**	**182,529**	**235,722**	**304,261**	**392,379**	**496,071**	**614,595**	**743,850**
Benin	2,255	2,420	2,850	3,611	4,773	6,518	8,850	11,523	14,630	18,091	21,734
Burkina Faso	4,284	4,882	5,807	7,212	9,324	12,294	16,469	22,150	29,112	37,361	46,721
Cape Verde	178	211	274	300	348	437	496	544	588	618	632
Côte d'Ivoire	2,630	3,638	5,416	8,501	12,518	16,582	19,738	24,503	29,823	35,301	40,674
Gambia	271	373	459	630	966	1,297	1,728	2,242	2,818	3,427	4,036
Ghana	4,981	6,742	8,682	10,923	14,793	19,165	24,392	30,325	36,537	42,941	49,107
Guinea	3,094	3,541	4,154	4,407	5,759	8,344	9,982	12,765	15,946	19,414	23,006
Guinea-Bissau	518	593	603	835	1,017	1,241	1,515	1,863	2,263	2,706	3,185
Liberia	911	1,116	1,440	1,923	2,127	2,847	3,994	5,166	6,533	8,065	9,660
Mali	4,638	5,248	6,034	7,246	8,673	11,295	15,370	20,537	26,784	34,100	42,130
Mauritania	657	854	1,134	1,518	1,996	2,643	3,460	4,298	5,200	6,146	7,085
Niger	2,462	3,250	4,373	5,871	7,788	10,922	15,512	22,071	30,841	41,968	55,435
Nigeria	37,860	45,926	57,357	75,543	97,552	123,689	158,423	203,869	257,815	320,341	389,615
Saint Helena	5	5	5	5	6	5	4	4	4	4	4
Senegal	2,416	3,048	4,096	5,414	7,242	9,506	12,434	15,998	19,963	24,269	28,607
Sierra Leone	1,895	2,187	2,593	3,162	3,982	4,143	5,868	7,178	8,532	9,872	11,088
Togo	1,395	1,578	2,097	2,667	3,666	4,794	6,028	7,343	8,684	9,970	11,130
Eastern Africa	**67,611**	**85,130**	**111,486**	**148,549**	**198,838**	**258,215**	**333,993**	**431,733**	**542,799**	**667,287**	**802,184**
Burundi	2,456	2,940	3,513	4,130	5,602	6,374	8,383	10,057	11,441	12,651	13,703
Comoros	156	193	238	329	438	562	735	933	1,160	1,426	1,700

Djibouti	62	85	162	340	562	732	889	1,066	1,263	1,447	1,620
Eritrea	1,141	1,424	1,847	2,469	3,158	3,668	5,254	6,848	8,394	10,033	11,568
Ethiopia	18,434	22,553	28,959	35,426	48,333	65,578	82,950	101,046	118,515	133,466	145,187
Kenya	6,077	8,105	11,252	16,268	23,447	31,254	40,513	52,564	65,928	80,975	96,887
Madagascar	4,084	5,104	6,549	8,609	11,281	15,364	20,714	27,366	35,333	44,132	53,561
Malawi	2,881	3,525	4,531	6,240	9,381	11,229	14,901	20,677	28,174	37,798	49,719
Mauritius	493	659	827	964	1,060	1,196	1,299	1,361	1,394	1,395	1,367
Mayotte	15	24	37	55	92	149	204	271	342	420	493
Réunion	248	335	462	510	612	739	846	936	1,006	1,056	1,083
Rwanda	2,072	2,771	3,749	5,179	7,110	8,098	10,624	14,042	17,579	21,616	26,003
Seychelles	36	41	52	63	71	79	87	90	92	93	91
Somalia	2,264	2,819	3,601	6,436	6,599	7,399	9,331	12,237	16,360	21,669	28,217
South Sudan	2,854	3,242	3,857	4,974	6,037	6,631	9,948	13,096	16,102	19,315	22,571
Uganda	5,158	6,788	9,446	12,662	17,700	24,213	33,425	45,424	59,846	76,438	94,259
United Republic of Tanzania	7,650	10,074	13,605	18,686	25,479	34,038	44,841	61,081	81,852	107,737	138,312
Central Africa	**26,116**	**32,013**	**40,749**	**53,391**	**71,676**	**96,187**	**126,689**	**161,689**	**200,021**	**239,561**	**278,350**
Angola	4,148	4,963	5,926	7,638	10,335	13,926	19,082	24,780	30,801	36,753	42,334
Cameroon	4,466	5,409	6,842	9,110	12,181	15,678	19,599	24,117	28,811	33,694	38,472
Central African Republic	1,327	1,504	1,829	2,274	2,935	3,702	4,401	5,343	6,365	7,394	8,392
Chad	2,429	2,954	3,656	4,554	6,011	8,222	11,227	14,469	18,437	22,783	27,252
Congo	808	1,014	1,335	1,798	2,389	3,136	4,043	5,003	6,169	7,462	8,801
Democratic Republic of the Congo	12,184	15,368	20,267	27,019	36,406	49,626	65,966	85,054	105,956	127,441	148,523
Equatorial Guinea	226	252	291	221	374	520	700	905	1,102	1,298	1,493
Gabon	469	486	530	683	929	1,235	1,505	1,818	2,146	2,468	2,784
Sao Tome and Principe	60	64	74	95	116	141	165	200	235	269	299
Southern Africa	**15,588**	**19,724**	**25,454**	**33,000**	**42,093**	**51,442**	**57,780**	**61,187**	**64,126**	**66,095**	**67,327**
Botswana	413	524	693	996	1,382	1,758	2,007	2,206	2,344	2,436	2,503
Lesotho	734	852	1,033	1,310	1,639	1,964	2,171	2,395	2,566	2,692	2,788
Mozambique	6,442	7,647	9,453	12,146	13,547	18,201	23,391	29,177	35,907	43,021	50,192
Namibia	485	603	780	1,013	1,415	1,896	2,283	2,672	3,042	3,354	3,599
South Africa	13,683	17,396	22,502	29,077	36,794	44,760	50,133	52,573	54,711	56,040	56,757
Swaziland	273	349	446	603	863	1,064	1,186	1,341	1,462	1,573	1,679
Zambia	2,340	3,045	4,139	5,775	7,860	10,202	13,089	17,918	24,482	33,355	45,037
Zimbabwe	2,747	3,752	5,206	7,289	10,469	12,509	12,571	15,543	17,627	19,243	20,614

*Projections

TABLE 2: **URBAN POPULATION BY MAJOR AREA, REGION AND COUNTRY, 1950-2050 (THOUSANDS)**

Major area, region, country or area	1950	1960	1970	1980	1990	2000	2010	2020*	2030*	2040*	2050*
Sub-Saharan Africa	20,069	33,180	55,643	89,709	139,414	206,322	298,402	426,522	595,544	810,152	1,068,752
Africa	33,004	53,310	86,568	134,220	203,383	288,402	400,651	551,552	744,485	983,327	1,264,629
Northern Africa	**12,935**	**20,129**	**30,925**	**44,511**	**63,969**	**82,079**	**102,249**	**125,030**	**148,941**	**173,175**	**195,877**
Algeria	1,944	3,295	5,430	8,191	13,177	18,561	25,546	31,899	36,210	38,876	40,649
Egypt	6,869	10,565	15,163	19,715	24,714	28,951	35,186	43,145	52,864	63,764	74,040
Libya	201	369	990	2,147	3,282	3,993	4,929	5,626	6,340	6,967	7,462
Morocco	2,344	3,413	5,278	8,064	11,992	15,357	18,109	21,200	24,219	26,656	28,430
Sudan	432	894	1,802	3,013	5,853	8,954	11,117	14,681	19,919	26,845	34,731
Tunisia	1,140	1,583	2,229	3,265	4,760	5,998	6,928	7,879	8,699	9,313	9,762
Western Sahara	4	10	32	116	190	264	434	602	690	755	802
Western Africa	**6,857**	**12,897**	**22,845**	**37,923**	**60,544**	**90,777**	**134,810**	**195,879**	**274,819**	**372,864**	**488,886**
Benin	112	224	476	987	1,646	2,498	3,917	5,836	8,265	11,168	14,490
Burkina Faso	164	229	334	635	1,288	2,194	4,227	7,532	12,086	18,059	25,801
Cape Verde	25	35	54	71	154	234	307	374	432	474	502
Côte d'Ivoire	262	643	1,525	3,131	4,925	7,220	9,979	14,085	18,829	23,930	29,319
Gambia	28	45	89	179	370	633	979	1,381	1,853	2,388	2,960
Ghana	769	1,568	2,515	3,404	5,391	8,424	12,492	17,428	22,937	29,088	35,520
Guinea	208	371	664	1,041	1,614	2,589	3,490	5,128	7,368	10,165	13,443
Guinea-Bissau	52	81	91	147	286	445	655	925	1,237	1,595	2,010
Liberia	118	208	375	676	1,258	1,262	1,909	2,675	3,686	4,948	6,384
Mali	393	581	865	1,339	2,023	3,172	5,268	8,372	12,618	18,143	24,937
Mauritania	20	59	165	415	792	1,057	1,426	1,915	2,587	3,390	4,282
Niger	120	188	385	789	1,197	1,768	2,733	4,540	7,800	12,954	20,546
Nigeria	3,867	7,422	13,024	21,592	34,418	52,383	77,629	112,159	156,697	212,249	277,916
Saint Helena	3	2	2	2	2	2	2	2	2	2	2
Senegal	416	701	1,229	1,937	2,817	3,835	5,253	7,318	10,144	13,640	17,579
Sierra Leone	240	380	607	920	1,315	1,484	2,281	3,084	4,115	5,323	6,599
Togo	61	159	446	658	1,048	1,577	2,262	3,122	4,163	5,347	6,597
Eastern Africa	**3,685**	**6,328**	**11,548**	**21,553**	**35,104**	**53,124**	**77,954**	**117,761**	**175,620**	**255,749**	**358,974**
Burundi	42	60	84	179	351	526	892	1,377	2,008	2,823	3,829
Comoros	10	24	46	76	122	158	206	274	376	516	682

Djibouti	25	43	100	245	425	560	684	832	1,008	1,188	1,363
Eritrea	81	139	233	355	499	646	1,098	1,766	2,643	3,791	5,151
Ethiopia	848	1,451	2,487	3,688	6,100	9,666	13,900	19,872	28,355	39,238	51,601
Kenya	340	597	1,158	2,535	3,927	6,217	9,549	14,675	21,868	31,788	44,302
Madagascar	319	543	923	1,595	2,658	4,167	6,614	10,493	15,802	22,499	30,640
Malawi	101	155	274	565	1,084	1,641	2,316	3,600	5,874	9,758	15,670
Mauritius	145	219	348	408	465	510	543	578	631	687	727
Mayotte	1	4	9	17	33	71	102	138	184	242	302
Réunion	58	110	193	273	497	664	795	895	969	1,023	1,055
Rwanda	37	67	120	244	385	1,115	1,998	3,119	4,748	7,093	10,192
Seychelles	10	11	20	31	35	40	46	51	56	60	62
Somalia	288	488	817	1,722	1,957	2,460	3,479	5,168	7,853	11,687	16,862
South Sudan	253	284	333	424	801	1,094	1,777	2,641	3,871	5,678	7,991
Uganda	145	300	629	954	1,960	2,925	5,067	8,882	14,762	23,282	34,815
United Republic of Tanzania	267	528	1,068	2,720	4,811	7,594	11,784	19,030	30,281	46,714	69,089
Central Africa	**3,657**	**5,678**	**10,131**	**15,476**	**23,222**	**34,775**	**51,861**	**74,510**	**102,336**	**134,969**	**171,082**
Angola	314	518	886	1,856	3,839	6,822	11,140	16,207	21,625	27,298	33,004
Cameroon	417	754	1,389	2,908	4,831	7,140	10,096	13,775	17,915	22,520	27,387
Central African Republic	191	302	500	770	1,081	1,393	1,710	2,236	2,979	3,872	4,856
Chad	109	198	423	856	1,251	1,771	2,441	3,344	4,890	7,257	10,295
Congo	201	320	522	861	1,298	1,841	2,556	3,371	4,387	5,558	6,828
Democratic Republic of the Congo	2,327	3,427	6,141	7,759	10,100	14,542	22,248	33,459	47,941	65,365	85,100
Equatorial Guinea	35	64	78	61	130	202	276	376	498	640	796
Gabon	53	85	169	373	642	990	1,292	1,607	1,932	2,257	2,582
Sao Tome and Principe	8	10	22	32	51	75	103	136	169	202	234
Southern Africa	**5,869**	**8,277**	**11,119**	**14,756**	**20,544**	**27,647**	**33,778**	**38,372**	**42,770**	**46,570**	**49,810**
Botswana	11	16	54	164	580	936	1,224	1,476	1,670	1,827	1,964
Lesotho	10	29	89	150	229	392	583	817	1,051	1,283	1,517
Mozambique	153	280	546	1,592	2,858	5,296	7,241	9,898	13,844	19,113	25,335
Namibia	65	108	174	254	391	614	863	1,165	1,510	1,866	2,214
South Africa	5,778	8,110	10,758	14,081	19,146	25,464	30,855	34,627	38,199	41,179	43,616
Swaziland	5	14	43	108	198	241	253	287	340	415	499
Zambia	269	552	1,256	2,299	3,097	3,550	5,069	7,755	11,857	18,016	26,816
Zimbabwe	292	473	904	1,631	3,035	4,223	4,793	6,717	8,630	10,553	12,490

*Projections

TABLE 3: **PERCENTAGE OF POPULATION RESIDING IN URBAN AREAS BY MAJOR AREA, REGION AND COUNTRY, 1950-2050**

Major area, region, country or area	1950	1960	1970	1980	1990	2000	2010	2020*	2030*	2040*	2050*
Sub-Saharan Africa	11.2	14.9	19.5	23.9	28.2	32.2	36.3	40.7	45.7	51.0	56.5
Africa	14.4	18.6	23.5	27.8	32.0	35.6	39.2	43.2	47.7	52.6	57.7
Northern Africa	**25.8**	**31.3**	**37.2**	**41.2**	**45.6**	**48.4**	**51.2**	**54.1**	**57.5**	**61.4**	**65.3**
Algeria	22.2	30.5	39.5	43.5	52.1	60.8	72.0	79.4	83.3	85.5	87.4
Egypt	31.9	37.9	42.2	43.9	43.5	42.8	43.4	45.5	49.6	54.9	60.0
Libya	19.5	27.3	49.7	70.1	75.7	76.3	77.6	79.4	81.5	83.3	85.1
Morocco	26.2	29.4	34.5	41.2	48.4	53.3	56.7	60.4	64.6	68.7	72.5
Sudan	6.8	10.7	16.5	20.0	28.6	32.5	33.1	35.1	39.2	44.9	50.8
Tunisia	32.3	37.5	43.5	50.6	57.9	63.4	66.1	68.4	71.2	74.3	77.2
Western Sahara	31.0	31.2	42.1	77.4	86.2	83.9	81.8	83.8	85.7	87.5	89.0
Western Africa	**9.7**	**15.1**	**21.3**	**27.1**	**33.2**	**38.5**	**44.3**	**49.9**	**55.4**	**60.7**	**65.7**
Benin	5.0	9.3	16.7	27.3	34.5	38.3	44.3	50.7	56.5	61.7	66.7
Burkina Faso	3.8	4.7	5.7	8.8	13.8	17.8	25.7	34.0	41.5	48.3	55.2
Cape Verde	14.2	16.7	19.6	23.5	44.1	53.4	61.8	68.7	73.4	76.6	79.5
Côte d'Ivoire	10.0	17.7	28.2	36.8	39.3	43.5	50.6	57.5	63.1	67.8	72.1
Gambia	10.3	12.1	19.5	28.4	38.3	48.8	56.7	61.6	65.8	69.7	73.3
Ghana	15.4	23.3	29.0	31.2	36.4	44.0	51.2	57.5	62.8	67.7	72.3
Guinea	6.7	10.5	16.0	23.6	28.0	31.0	35.0	40.2	46.2	52.4	58.4
Guinea-Bissau	10.0	13.6	15.1	17.6	28.1	35.9	43.2	49.7	54.7	58.9	63.1
Liberia	13.0	18.6	26.0	35.2	40.9	44.3	47.8	51.8	56.4	61.4	66.1
Mali	8.5	11.1	14.3	18.5	23.3	28.1	34.3	40.8	47.1	53.2	59.2
Mauritania	3.1	6.9	14.6	27.4	39.7	40.0	41.2	44.6	49.8	55.2	60.4
Niger	4.9	5.8	8.8	13.4	15.4	16.2	17.6	20.6	25.3	30.9	37.1
Nigeria	10.2	16.2	22.7	28.6	35.3	42.4	49.0	55.0	60.8	66.3	71.3
Saint Helena	51.4	49.2	46.4	43.8	42.6	40.4	39.5	40.1	42.7	46.6	50.6
Senegal	17.2	23.0	30.0	35.8	38.9	40.3	42.3	45.7	50.8	56.2	61.4
Sierra Leone	12.6	17.4	23.4	29.1	33.0	35.8	38.9	43.0	48.2	53.9	59.5
Togo	4.4	10.1	21.3	24.7	28.6	32.9	37.5	42.5	47.9	53.6	59.3
Central Africa	**14.0**	**17.7**	**24.9**	**29.0**	**32.4**	**36.2**	**40.9**	**46.1**	**51.2**	**56.3**	**61.5**
Angola	7.6	10.4	15.0	24.3	37.1	49.0	58.4	65.4	70.2	74.3	78.0
Cameroon	9.3	13.9	20.3	31.9	39.7	45.5	51.5	57.1	62.2	66.8	71.2

Central African Republic	14.4	20.1	27.3	33.9	36.8	37.6	38.8	41.9	46.8	52.4	57.9
Chad	4.5	6.7	11.6	18.8	20.8	21.5	21.7	23.1	26.5	31.9	37.8
Congo	24.9	31.6	39.1	47.9	54.3	58.7	63.2	67.4	71.1	74.5	77.6
Democratic Republic of the Congo	19.1	22.3	30.3	28.7	27.7	29.3	33.7	39.3	45.2	51.3	57.3
Equatorial Guinea	15.5	25.5	27.0	27.9	34.7	38.8	39.3	41.5	45.2	49.3	53.3
Gabon	11.4	17.4	32.0	54.7	69.1	80.1	85.8	88.4	90.0	91.5	92.7
Sao Tome and Principe	13.5	16.1	29.5	33.5	43.6	53.4	62.0	68.0	71.9	75.2	78.2
Eastern Africa	**5.5**	**7.4**	**10.4**	**14.5**	**17.7**	**20.6**	**23.3**	**27.3**	**32.4**	**38.3**	**44.7**
Burundi	1.7	2.0	2.4	4.3	6.3	8.2	10.6	13.7	17.5	22.3	27.9
Comoros	6.6	12.6	19.4	23.2	27.9	28.1	28.0	29.4	32.4	36.2	40.1
Djibouti	39.8	50.3	61.8	72.1	75.7	76.5	77.0	78.0	79.8	82.1	84.2
Eritrea	7.1	9.8	12.6	14.4	15.8	17.6	20.9	25.8	31.5	37.8	44.5
Ethiopia	4.6	6.4	8.6	10.4	12.6	14.7	16.8	19.7	23.9	29.4	35.5
Kenya	5.6	7.4	10.3	15.6	16.7	19.9	23.6	27.9	33.2	39.3	45.7
Madagascar	7.8	10.6	14.1	18.5	23.6	27.1	31.9	38.3	44.7	51.0	57.2
Malawi	3.5	4.4	6.1	9.1	11.6	14.6	15.5	17.4	20.8	25.8	31.5
Mauritius	29.3	33.2	42.0	42.4	43.9	42.7	41.8	42.5	45.3	49.2	53.2
Mayotte	8.5	16.3	25.1	30.1	36.1	47.7	50.1	51.0	53.7	57.5	61.3
Réunion	23.5	32.8	41.7	53.5	81.2	89.9	94.0	95.7	96.4	96.9	97.4
Rwanda	1.8	2.4	3.2	4.7	5.4	13.8	18.8	22.2	27.0	32.8	39.2
Seychelles	27.4	27.7	39.1	49.4	49.3	50.4	53.2	57.1	60.9	64.6	68.2
Somalia	12.7	17.3	22.7	26.8	29.7	33.2	37.3	42.2	48.0	53.9	59.8
South Sudan	8.9	8.7	8.6	8.5	13.3	16.5	17.9	20.2	24.0	29.4	35.4
Uganda	2.8	4.4	6.7	7.5	11.1	12.1	15.2	19.6	24.7	30.5	36.9
United Republic of Tanzania	3.5	5.2	7.9	14.6	18.9	22.3	26.3	31.2	37.0	43.4	50.0
Southern Africa	**37.7**	**42.0**	**43.7**	**44.7**	**48.8**	**53.7**	**58.5**	**62.7**	**66.7**	**70.5**	**74.0**
Botswana	2.7	3.1	7.8	16.5	41.9	53.2	61.0	66.9	71.2	75.0	78.5
Lesotho	1.4	3.4	8.6	11.5	14.0	20.0	26.8	34.1	41.0	47.6	54.4
Mozambique	2.4	3.7	5.8	13.1	21.1	29.1	31.0	33.9	38.6	44.4	50.5
Namibia	13.4	17.9	22.3	25.1	27.7	32.4	37.8	43.6	49.6	55.7	61.5
South Africa	42.2	46.6	47.8	48.4	52.0	56.9	61.5	65.9	69.8	73.5	76.8
Swaziland	1.8	3.9	9.7	17.8	22.9	22.6	21.3	21.4	23.3	26.4	29.7
Zambia	11.5	18.1	30.4	39.8	39.4	34.8	38.7	43.3	48.4	54.0	59.5
Zimbabwe	10.6	12.6	17.4	22.4	29.0	33.8	38.1	43.2	49.0	54.8	60.6

*Projections

TABLE 4: **AVERAGE ANNUAL RATE OF CHANGE OF THE URBAN POPULATION BY MAJOR AREA, REGION AND COUNTRY, 1950-2050 (PER CENT)**

Major area, region and country	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2010	2010-2020	2020-2030*	2030-2040*	2040-2050*
Sub-Saharan Africa	5.03	5.17	4.78	4.41	3.92	3.69	3.57	3.34	3.08	2.77
Africa	4.79	4.85	4.39	4.16	3.49	3.29	3.20	3.00	2.78	2.52
Northern Africa	**4.42**	**4.29**	**3.64**	**3.63**	**2.49**	**2.20**	**2.01**	**1.75**	**1.51**	**1.23**
Algeria	5.28	4.99	4.11	4.75	3.43	3.19	2.22	1.27	0.71	0.45
Egypt	4.31	3.61	2.63	2.26	1.58	1.95	2.04	2.03	1.87	1.49
Libya	6.06	9.88	7.74	4.24	1.96	2.11	1.32	1.20	0.94	0.69
Morocco	3.76	4.36	4.24	3.97	2.47	1.65	1.58	1.33	0.96	0.64
Sudan	7.26	7.01	5.14	6.64	4.25	2.16	2.78	3.05	2.98	2.58
Tunisia	3.29	3.42	3.82	3.77	2.31	1.44	1.29	0.99	0.68	0.47
Western Sahara	8.75	11.49	12.83	4.91	3.29	4.96	3.27	1.37	0.90	0.61
Western Africa	**6.32**	**5.72**	**5.07**	**4.68**	**4.05**	**3.95**	**3.74**	**3.39**	**3.05**	**2.71**
Benin	6.97	7.51	7.30	5.11	4.17	4.50	3.99	3.48	3.01	2.60
Burkina Faso	3.33	3.74	6.44	7.07	5.32	6.56	5.78	4.73	4.02	3.57
Cape Verde	3.30	4.22	2.74	7.78	4.19	2.72	1.99	1.44	0.92	0.59
Côte d'Ivoire	8.98	8.64	7.19	4.53	3.82	3.24	3.45	2.90	2.40	2.03
Gambia	4.84	6.82	6.94	7.27	5.37	4.36	3.44	2.94	2.54	2.15
Ghana	7.12	4.73	3.03	4.60	4.46	3.94	3.33	2.75	2.38	2.00
Guinea	5.80	5.82	4.50	4.39	4.72	2.99	3.85	3.62	3.22	2.80
Guinea-Bissau	4.41	1.23	4.77	6.66	4.42	3.87	3.46	2.90	2.54	2.31
Liberia	5.65	5.89	5.90	6.21	0.03	4.14	3.37	3.20	2.95	2.55
Mali	3.91	3.98	4.38	4.12	4.50	5.07	4.63	4.10	3.63	3.18
Mauritania	10.59	10.33	9.23	6.45	2.89	3.00	2.95	3.01	2.70	2.34
Niger	4.54	7.14	7.19	4.16	3.90	4.35	5.08	5.41	5.07	4.61
Nigeria	6.52	5.62	5.06	4.66	4.20	3.93	3.68	3.34	3.03	2.70
Saint Helena	-0.91	-0.18	0.32	-0.03	-1.43	-2.27	-0.04	0.92	0.90	0.65
Senegal	5.21	5.61	4.55	3.75	3.09	3.15	3.31	3.27	2.96	2.54
Sierra Leone	4.61	4.68	4.16	3.57	1.21	4.30	3.02	2.88	2.57	2.15
Togo	9.57	10.30	3.88	4.66	4.09	3.61	3.22	2.88	2.50	2.10
Eastern Africa	**5.41**	**6.02**	**6.24**	**4.88**	**4.14**	**3.83**	**4.13**	**4.00**	**3.76**	**3.39**
Burundi	3.45	3.34	7.61	6.73	4.03	5.29	4.34	3.77	3.41	3.05
Comoros	8.54	6.44	5.03	4.69	2.58	2.63	2.88	3.17	3.15	2.79

Djibouti	5.48	8.49	8.99	5.51	2.75	2.00	1.95	1.93	1.64	1.37
Eritrea	5.38	5.16	4.22	3.42	2.59	5.30	4.75	4.03	3.61	3.07
Ethiopia	5.37	5.39	3.94	5.03	4.60	3.63	3.57	3.56	3.25	2.74
Kenya	5.64	6.63	7.83	4.38	4.59	4.29	4.30	3.99	3.74	3.32
Madagascar	5.34	5.31	5.46	5.11	4.49	4.62	4.61	4.09	3.53	3.09
Malawi	4.27	5.72	7.22	6.52	4.14	3.45	4.41	4.90	5.08	4.74
Mauritius	4.14	4.63	1.61	1.30	0.93	0.62	0.63	0.87	0.84	0.58
Mayotte	11.14	8.55	5.83	7.00	7.57	3.64	3.00	2.87	2.75	2.23
Réunion	6.36	5.59	3.48	6.01	2.90	1.80	1.18	0.80	0.54	0.31
Rwanda	5.78	5.87	7.14	4.54	10.64	5.83	4.45	4.20	4.01	3.62
Seychelles	1.42	5.65	4.29	1.21	1.25	1.50	1.08	0.93	0.68	0.32
Somalia	5.27	5.15	7.46	1.28	2.29	3.47	3.96	4.18	3.98	3.67
South Sudan	1.14	1.60	2.41	6.37	3.11	4.84	3.96	3.82	3.83	3.42
Uganda	7.23	7.42	4.16	7.20	4.00	5.49	5.61	5.08	4.56	4.02
United Republic of Tanzania	6.83	7.04	9.34	5.71	4.56	4.39	4.79	4.64	4.34	3.91
Central Africa	**4.40**	**5.79**	**4.24**	**4.06**	**4.04**	**4.00**	**3.62**	**3.17**	**2.77**	**2.37**
Angola	5.00	5.37	7.39	7.27	5.75	4.90	3.75	2.88	2.33	1.90
Cameroon	5.92	6.11	7.39	5.08	3.91	3.46	3.11	2.63	2.29	1.96
Central African Republic	4.57	5.03	4.32	3.39	2.54	2.05	2.68	2.87	2.62	2.27
Chad	5.93	7.60	7.05	3.80	3.47	3.21	3.15	3.80	3.95	3.50
Congo	4.64	4.89	4.99	4.11	3.49	3.28	2.77	2.63	2.37	2.06
Democratic Republic of the Congo	3.87	5.83	2.34	2.64	3.64	4.25	4.08	3.60	3.10	2.64
Equatorial Guinea	6.13	1.97	-2.43	7.48	4.41	3.11	3.10	2.83	2.50	2.18
Gabon	4.58	6.96	7.90	5.43	4.32	2.67	2.18	1.84	1.56	1.34
Sao Tome and Principe	2.44	7.44	3.78	4.69	3.96	3.08	2.81	2.16	1.81	1.46
Southern Africa	**3.44**	**2.95**	**2.83**	**3.31**	**2.97**	**2.00**	**1.28**	**1.09**	**0.85**	**0.67**
Botswana	3.58	12.19	11.07	12.62	4.79	2.69	1.87	1.23	0.90	0.72
Lesotho	10.77	11.18	5.23	4.23	5.38	3.96	3.37	2.53	1.99	1.68
Mozambique	6.05	6.67	10.70	5.85	6.17	3.13	3.13	3.35	3.23	2.82
Namibia	5.06	4.78	3.78	4.33	4.50	3.41	3.00	2.59	2.12	1.71
South Africa	3.39	2.83	2.69	3.07	2.85	1.92	1.15	0.98	0.75	0.57
Swaziland	10.51	11.52	9.12	6.07	1.97	0.49	1.27	1.71	1.98	1.85
Zambia	7.19	8.21	6.05	2.98	1.36	3.56	4.25	4.25	4.18	3.98
Zimbabwe	4.81	6.47	5.90	6.21	3.30	1.27	3.37	2.51	2.01	1.69

*Projections

TABLE 5: **POPULATION OF URBAN AGGLOMERATIONS WITH 750,000 INHABITANTS OR MORE IN 2011, BY COUNTRY, 1950-2025 (THOUSANDS)**

Country	Urban Agglomeration	1950	1960	1970	1980	1990	2000	2010	2020*	2025*
Northern Africa										
Algeria	El Djazaïr (Algiers)	516	872	1,281	1,621	1,819	2,278	2,851	3,608	3,977
Algeria	Wahran (Oran)	269	305	385	537	647	706	776	920	1,026
Egypt	Al-Iskandariyah (Alexandria)	1,037	1,504	1,987	2,519	3,063	3,592	4,400	5,517	6,189
Egypt	Al-Qahirah (Cairo)	2,494	3,680	5,585	7,349	9,061	10,170	11,031	13,254	14,740
Libya	Tarabulus (Tripoli)	106	174	398	662	862	1,022	1,111	1,324	1,456
Morocco	Agadir	11	17	54	187	403	610	786	985	1,090
Morocco	Dar-el-Beida (Casablanca)	625	967	1,505	2,109	2,682	2,937	3,009	3,580	3,911
Morocco	Fès	165	280	369	510	685	868	1,065	1,319	1,455
Morocco	Marrakech	209	243	323	416	578	751	919	1,142	1,262
Morocco	Rabat	145	233	494	808	1,174	1,507	1,807	2,213	2,429
Morocco	Tanger	100	142	183	283	423	591	790	995	1,101
Sudan	Al-Khartum (Khartoum)	183	347	657	1,164	2,360	3,505	4,516	6,028	7,090
Tunisia	Tunis	384	434	505	577	644	711	777	935	1,018
Western Africa										
Benin	Cotonou	20	73	163	337	504	642	882	1,292	1,517
Burkina Faso	Ouagadougou	33	59	115	265	537	921	1,911	3,662	4,795
Côte d'Ivoire	Abidjan	65	192	548	1,384	2,102	3,028	4,151	5,896	6,971
Côte d'Ivoire	Yamoussoukro	1	4	17	58	136	348	885	1,633	1,960
Guinea	Conakry	31	112	388	658	895	1,221	1,715	2,632	3,195
Liberia	Monrovia	15	75	164	325	1,042	836	812	621	751
Mali	Bamako	89	130	222	489	746	1,142	1,932	2,998	3,632
Mauritania	Nouakchott	2	5	38	192	419	553	759	1,085	1,271
Niger	Niamey	24	58	129	274	432	680	1,222	2,183	2,924
Nigeria	Aba	48	102	193	344	484	630	836	1,252	1,529
Nigeria	Abuja	19	23	48	125	330	833	2,010	3,306	4,000
Nigeria	Benin City	49	83	163	335	689	975	1,311	1,955	2,377
Nigeria	Enugu	60	108	163	281	394	547	776	1,178	1,439
Nigeria	Ibadan	450	570	809	1,186	1,739	2,236	2,855	4,165	5,028
Nigeria	Ilorin	114	179	268	389	515	633	788	1,169	1,428
Nigeria	Jos	31	69	152	331	493	604	748	1,108	1,355
Nigeria	Kaduna	35	99	266	628	961	1,184	1,476	2,167	2,633
Nigeria	Kano	123	229	542	1,350	2,095	2,602	3,271	4,748	5,724
Nigeria	Lagos	325	762	1,414	2,572	4,764	7,281	10,788	15,825	18,857
Nigeria	Maiduguri	50	105	216	416	598	700	827	1,213	1,482
Nigeria	Ogbomosho	132	247	378	485	622	798	1,039	1,545	1,884
Nigeria	Onitsha	74	129	195	257	337	533	867	1,346	1,642

Nigeria	Port Harcourt	60	135	266	482	680	1,091	1,807	2,782	3,371
Senegal	Dakar	201	349	610	957	1,405	2,029	2,926	4,227	5,064
Sierra Leone	Freetown	92	119	206	361	529	688	910	1,294	1,540
Togo	Lomé	33	95	192	344	562	904	1,453	2,151	2,472
Central Africa										
Angola	Huambo	15	37	61	153	326	578	1,039	1,666	1,997
Angola	Luanda	138	219	459	962	1,568	2,591	4,790	7,555	8,924
Cameroon	Douala	95	153	298	571	940	1,490	2,348	3,408	3,983
Cameroon	Yaoundé	32	75	183	415	777	1,351	2,320	3,420	3,997
Chad	N'Djaména	22	70	155	324	477	703	1,038	1,522	1,870
Congo	Brazzaville	83	124	238	446	704	1,022	1,557	2,074	2,364
Congo	Pointe-Noire	16	62	116	217	363	539	807	1,081	1,240
Democratic Republic of the Congo	Kananga	24	136	424	330	348	533	846	1,293	1,559
Democratic Republic of the Congo	Kinshasa	202	443	1,070	2,053	3,520	5,414	8,415	12,322	14,535
Democratic Republic of the Congo	Kisangani	38	134	235	291	358	516	783	1,192	1,439
Democratic Republic of the Congo	Lubumbashi	96	194	325	482	647	960	1,486	2,242	2,689
Democratic Republic of the Congo	Mbuji-Mayi	70	136	262	407	573	891	1,433	2,172	2,606
Eastern Africa										
Ethiopia	Addis Ababa	392	519	729	1,175	1,791	2,377	2,919	3,881	4,705
Kenya	Mombasa	94	159	254	350	476	683	940	1,411	1,775
Kenya	Nairobi	137	290	531	862	1,380	2,214	3,237	4,939	6,143
Madagascar	Antananarivo	177	252	363	580	948	1,361	1,900	3,091	3,898
Malawi	Lilongwe	2	8	34	124	266	477	738	1,195	1,538
Rwanda	Kigali	17	33	59	128	219	497	961	1,499	1,835
Somalia	Muqdisho (Mogadishu)	69	94	272	551	1,035	1,201	1,426	2,693	3,309
Uganda	Kampala	95	137	340	469	755	1,097	1,594	2,669	3,540
United Republic of Tanzania	Dar es Salaam	67	162	357	836	1,316	2,116	3,415	5,677	7,276
Southern Africa										
Mozambique	Maputo	92	181	371	550	776	1,019	1,132	1,507	1,823
Mozambique	Matola	52	81	128	203	319	498	759	1,120	1,360
South Africa	Cape Town	618	803	1,114	1,609	2,155	2,715	3,492	4,096	4,388
South Africa	Durban	484	677	856	1,214	1,723	2,370	2,954	3,471	3,724
South Africa	Ekurhuleni (East Rand)	546	682	898	1,107	1,531	2,326	3,284	3,872	4,150
South Africa	Johannesburg	900	1,147	1,444	1,656	1,898	2,732	3,763	4,421	4,732
South Africa	Port Elizabeth	192	289	477	590	828	958	1,097	1,309	1,418
South Africa	Pretoria	275	419	565	688	911	1,084	1,468	1,753	1,894
South Africa	Vereeniging	117	187	306	451	743	897	1,174	1,406	1,522
Zambia	Lusaka	31	91	278	533	757	1,073	1,719	2,764	3,496
Zimbabwe	Harare	143	248	417	616	1,047	1,379	1,526	1,990	2,337

*Projections

TABLE 6: **AVERAGE ANNUAL RATE OF CHANGE OF URBAN AGGLOMERATIONS WITH 750,000 INHABITANTS OR MORE IN 2011, BY COUNTRY, 1950-2025 (PER CENT)**

Country	Urban agglomeration	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2010	2010-2020*	2020-2025*
Northern Africa									
Algeria	El Djazaïr (Algiers)	5.23	3.85	2.36	1.15	2.25	2.25	2.35	1.95
Algeria	Wahran (Oran)	1.26	2.34	3.31	1.86	0.88	0.94	1.71	2.17
Egypt	Al-Iskandariyah (Alexandria)	3.71	2.79	2.37	1.96	1.59	2.03	2.26	2.30
Egypt	Al-Qahirah (Cairo)	3.89	4.17	2.75	2.09	1.15	0.81	1.84	2.13
Libya	Tarabulus (Tripoli)	4.98	8.27	5.08	2.64	1.70	0.84	1.75	1.90
Morocco	Agadir	4.51	11.71	12.42	7.66	4.14	2.54	2.26	2.02
Morocco	Dar-el-Beida (Casablanca)	4.36	4.43	3.37	2.40	0.91	0.24	1.74	1.77
Morocco	Fès	5.32	2.75	3.24	2.95	2.37	2.04	2.15	1.97
Morocco	Marrakech	1.53	2.83	2.54	3.28	2.62	2.02	2.17	1.99
Morocco	Rabat	4.73	7.51	4.93	3.74	2.49	1.81	2.03	1.86
Morocco	Tanger	3.54	2.54	4.35	4.03	3.35	2.89	2.31	2.02
Sudan	Al-Khartum (Khartoum)	6.40	6.40	5.72	7.07	3.96	2.53	2.89	3.25
Tunisia	Tunis	1.23	1.50	1.33	1.10	1.00	0.89	1.85	1.71
Western Africa									
Benin	Cotonou	12.87	8.04	7.24	4.01	2.43	3.17	3.82	3.21
Burkina Faso	Ouagadougou	5.82	6.69	8.32	7.06	5.38	7.30	6.50	5.39
Côte d'Ivoire	Abidjan	10.82	10.50	9.26	4.18	3.65	3.16	3.51	3.35
Côte d'Ivoire	Yamoussoukro	15.65	15.65	11.91	8.63	9.37	9.34	6.12	3.65
Guinea	Conakry	12.75	12.40	5.29	3.07	3.11	3.40	4.28	3.88
Liberia	Monrovia	16.00	7.82	6.83	11.66	-2.21	-0.29	-2.68	3.80
Mali	Bamako	3.83	5.33	7.91	4.23	4.25	5.26	4.39	3.83
Mauritania	Nouakchott	8.51	19.71	16.25	7.82	2.78	3.16	3.57	3.16
Niger	Niamey	8.59	8.09	7.51	4.56	4.55	5.86	5.80	5.85
Nigeria	Aba	7.40	6.39	5.80	3.40	2.65	2.82	4.04	4.00
Nigeria	Abuja	2.07	7.13	9.69	9.69	9.24	8.82	4.97	3.81
Nigeria	Benin City	5.23	6.74	7.22	7.22	3.47	2.97	3.99	3.91
Nigeria	Enugu	5.97	4.10	5.41	3.40	3.27	3.50	4.17	4.01
Nigeria	Ibadan	2.35	3.51	3.83	3.83	2.51	2.44	3.78	3.76
Nigeria	Ilorin	4.55	4.02	3.75	2.79	2.07	2.20	3.94	4.01
Nigeria	Jos	7.90	7.82	7.79	4.01	2.02	2.14	3.94	4.02
Nigeria	Kaduna	10.44	9.91	8.60	4.25	2.09	2.21	3.84	3.89
Nigeria	Kano	6.22	8.61	9.12	4.40	2.17	2.29	3.73	3.74
Nigeria	Lagos	8.52	6.17	5.99	6.16	4.24	3.93	3.83	3.51
Nigeria	Maiduguri	7.43	7.27	6.54	3.62	1.57	1.66	3.83	4.00
Nigeria	Ogbomosho	6.28	4.23	2.49	2.49	2.49	2.64	3.97	3.96
Nigeria	Onitsha	5.51	4.14	2.73	2.73	4.58	4.86	4.40	3.99

Nigeria	Port Harcourt	8.16	6.79	5.93	3.44	4.72	5.05	4.32	3.84
Senegal	Dakar	5.53	5.59	4.50	3.83	3.67	3.66	3.68	3.61
Sierra Leone	Freetown	2.62	5.50	5.60	3.82	2.62	2.79	3.53	3.47
Togo	Lomé	10.50	7.03	5.85	4.91	4.75	4.75	3.92	2.78
Central Africa									
Angola	Huambo	8.85	4.91	9.25	7.59	5.71	5.87	4.72	3.62
Angola	Luanda	4.61	7.39	7.39	4.89	5.02	6.14	4.56	3.33
Cameroon	Douala	4.76	6.68	6.51	4.99	4.60	4.55	3.72	3.12
Cameroon	Yaoundé	8.69	8.88	8.17	6.27	5.53	5.41	3.88	3.12
Chad	N'Djaména	11.46	7.91	7.33	3.88	3.89	3.89	3.83	4.12
Congo	Brazzaville	3.94	6.57	6.27	4.55	3.73	4.21	2.86	2.62
Congo	Pointe-Noire	13.30	6.32	6.26	5.15	3.95	4.04	2.92	2.75
Democratic Republic of the Congo	Kananga	17.33	11.33	-2.50	0.54	4.24	4.63	4.24	3.74
Democratic Republic of the Congo	Kinshasa	7.85	8.82	6.52	5.39	4.31	4.41	3.81	3.30
Democratic Republic of the Congo	Kisangani	12.54	5.61	2.15	2.05	3.67	4.16	4.21	3.76
Democratic Republic of the Congo	Lubumbashi	7.02	5.16	3.95	2.94	3.95	4.36	4.12	3.64
Democratic Republic of the Congo	Mbuji-Mayi	6.63	6.52	4.42	3.41	4.42	4.75	4.16	3.64
Eastern Africa									
Ethiopia	Addis Ababa	2.81	3.40	4.77	4.21	2.83	2.05	2.85	3.85
Kenya	Mombasa	5.26	4.69	3.21	3.08	3.61	3.19	4.06	4.59
Kenya	Nairobi	7.47	6.04	4.85	4.71	4.73	3.80	4.23	4.36
Madagascar	Antananarivo	3.51	3.64	4.70	4.91	3.62	3.33	4.86	4.64
Malawi	Lilongwe	14.63	14.62	12.84	7.63	5.84	4.36	4.82	5.04
Rwanda	Kigali	6.67	5.74	7.70	5.36	8.20	6.58	4.45	4.05
Somalia	Muqdisho (Mogadishu)	3.09	10.65	7.04	6.31	1.48	1.72	6.36	4.12
Uganda	Kampala	3.66	9.05	3.21	4.77	3.74	3.74	5.16	5.65
United Republic of Tanzania	Dar es Salaam	8.79	7.89	8.51	4.53	4.75	4.79	5.08	4.96
Southern Africa									
Mozambique	Maputo	6.80	7.17	3.93	3.44	2.73	1.05	2.86	3.81
Mozambique	Matola	4.55	4.55	4.55	4.55	4.45	4.20	3.89	3.88
South Africa	Cape Town	2.62	3.27	3.68	2.92	2.31	2.52	1.60	1.38
South Africa	Durban	3.36	2.34	3.50	3.50	3.19	2.20	1.61	1.41
South Africa	Ekurhuleni (East Rand)	2.23	2.76	2.09	3.24	4.19	3.45	1.65	1.39
South Africa	Johannesburg	2.43	2.30	1.37	1.37	3.64	3.20	1.61	1.36
South Africa	Port Elizabeth	4.05	5.04	2.12	3.38	1.46	1.36	1.76	1.60
South Africa	Pretoria	4.21	2.98	1.97	2.81	1.73	3.03	1.78	1.54
South Africa	Vereeniging	4.71	4.94	3.87	4.99	1.89	2.69	1.81	1.59
Zambia	Lusaka	10.71	11.16	6.52	3.52	3.49	4.71	4.75	4.69
Zimbabwe	Harare	5.53	5.19	3.92	5.30	2.75	1.01	2.66	3.21

*Projections

The African continent is currently in the midst of simultaneously unfolding and highly significant demographic, economic, technological, environmental, urban and socio-political transitions. Africa's economic performance is promising, with booming cities supporting growing middle classes and creating sizable consumer markets. But despite significant overall growth, not all of Africa performs well. The continent continues to suffer under very rapid urban growth accompanied by massive urban poverty and many other social problems. These seem to indicate that the development trajectories followed by African nations since post-independence may not be able to deliver on the aspirations of broad based human development and prosperity for all.

This report, therefore, argues for a bold re-imagining of prevailing models in order to steer the ongoing transitions towards greater sustainability based on a thorough review of all available options. That is especially the case since the already daunting urban challenges in Africa are now being exacerbated by the new vulnerabilities and threats associated with climate and environmental change.

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