



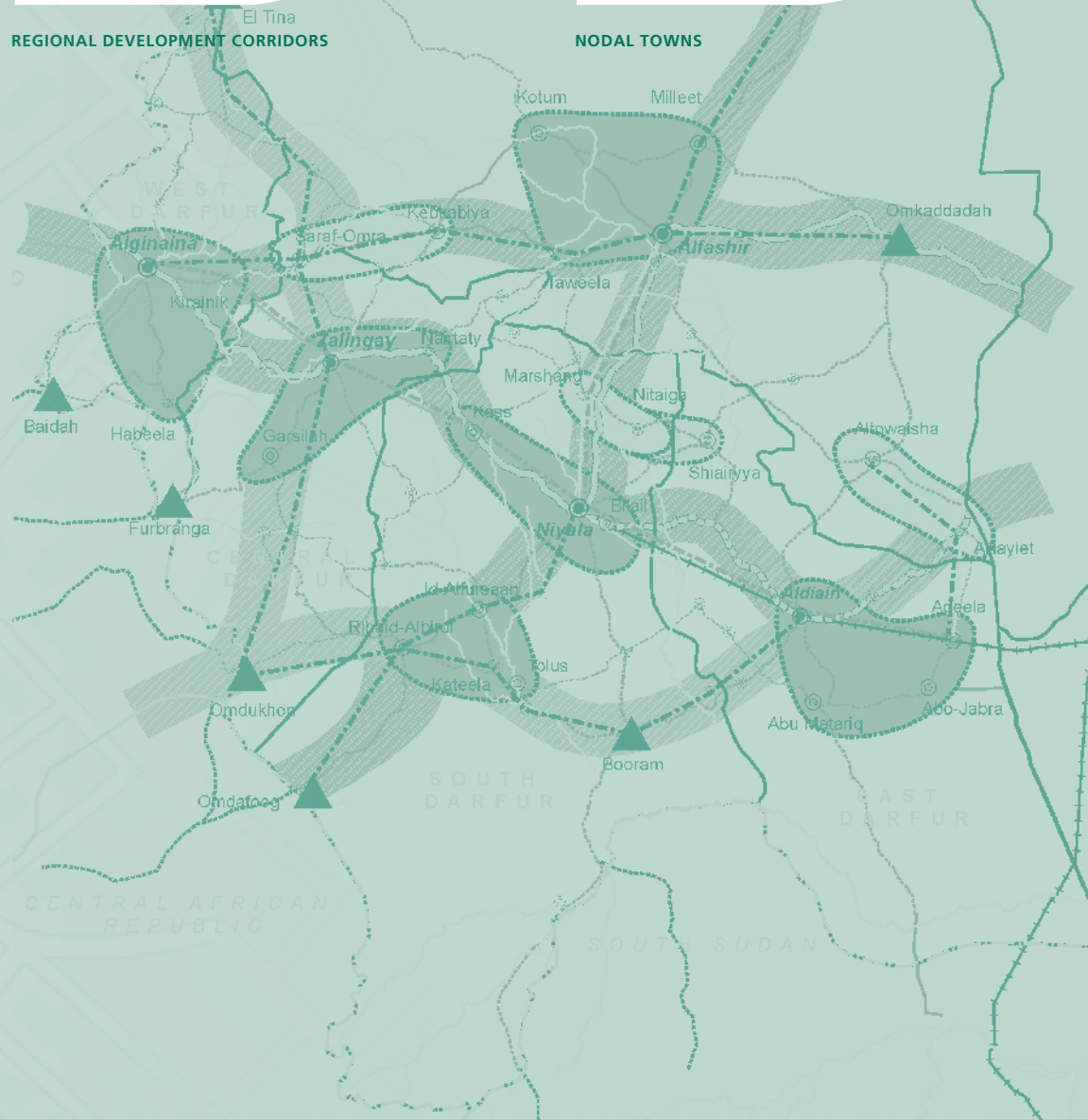
STATE ECONOMIC DEVELOPMENT AREAS



REGIONAL DEVELOPMENT CORRIDORS



NODAL TOWNS



REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR

Peace Building, Recovery and Development of Darfur: The Urban Factor

REGIONAL :
SPATIAL PLANNING : Peace Building, Recovery
STRATEGY OF DARFUR : and Development of Darfur:
: The Urban Factor

Regional Spatial Planning Strategy of Darfur

Peace Building, Recovery and Development of Darfur: The Urban Factor

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Foreword

The Darfur region in Sudan stands out as a good example of the socioeconomic consequences a conflict can have on a territory and its basic resources, including the natural environment, human settlements at large and urban areas in particular. How best to identify and entrench the fresh spatial patterns that can underpin socioeconomic stabilization and future development of a huge area is the purport of this report.

The protracted conflict since 2003 has caused massive displacements of people to or around the main urban centres, causing a complex, rapid, unplanned and uncontrolled urbanisation process. This is resulting in severe environmental degradation and social stress. In an attempt to bring peace to Darfur, the Government of Sudan and the Liberation Justice Movement signed the Doha Document for Peace in Darfur in July 2011. The latter led to the establishment of the Darfur Regional Authority by Presidential Decree. Subsequently, the Darfur Development Strategy was delineated in 2013, focusing on three priorities, namely: (i) Governance, Justice and Reconciliation; (ii) Reconstruction; and (iii) Economic Recovery.

The Regional Spatial Planning Strategy of Darfur (RSPSD) is a functional methodology that has been designed to facilitate a smooth transition from humanitarian relief to early recovery, reconstruction and economic development in that region of Sudan. The practical strategic solutions outlined here from a spatial perspective address the critical issue of reintegration and return of internally displaced persons, while taking into account the on-going urbanisation process and the existing territorial development dynamics of the region. The RSPSD aims to maximise the benefits of infrastructural investment, identifying priorities against a background of scarce resources and capacities, in an effort to bring about a more

balanced spatial development, ultimately contributing to peace, stabilisation and economic growth.

The Strategy advocates for the establishment of a network of urban settlements in Darfur, which can support each other and work as productive and interconnected nodes benefiting their surrounding rural areas. This network can efficiently integrate a broad range of socioeconomic, basic services and infrastructure dimensions that will benefit the population of Darfur as a whole, while at the same time laying the foundations of its future development. This document is based on an innovative analytical methodology whereby regional planning is closely adapted to existing conditions.

The guiding principles of this Strategy were adopted to ensure ownership by relevant government institutions throughout the formulation process, with participatory planning approaches mainstreamed at the various levels for the sake of gradual consensus-building, along with conflict-sensitive planning (the "Do-No-Harm" approach). This is why we can proudly call this document Darfur's Self-defined Spatial Planning Strategy.

This work was technically supported by the United Nations Human Settlements Programme (UN-Habitat) in close and constant coordination with the Government of Sudan and the Darfur States, and sponsored by the US Agency for International Development (USAID). A similar approach could be used in other countries or regions to devise the Spatial Development Frameworks which, in turn, set out and implement National Urban Policies, a critical activity which UN-Habitat is supporting in several countries around the world. It is fundamental to provide a geographical dimension to such policy instruments, as it can only facilitate implementation in a variety of specific local conditions.

The report was validated in a consultative workshop held in Khartoum on 21 January 2015; its opening session was attended by Dr. Joan Clos Executive Director of UN-Habitat and H.E. Mr. Hassan Hilal, Minister for Environment, Forestry and Physical Development.

It is our sincere hope that this work will contribute to build peace in Darfur, and provide concrete orientations and roadmap for its future development.



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The Regional Spatial Planning Strategy of Darfur would not have been completed without the dedicated work of a great team of professionals specialised in urban and regional planning led by Dr. Mathias Spaliviero, Senior Human Settlements Officer at UN-Habitat, including: Abdel Rahman Mustafa, Project Manager, UN-Habitat; Montserrat Gibert, Human Settlements Officer, UN-Habitat; Dr. Ir. Luc Boerboom, Spatial Planning Assistant Professor at the Faculty of Geo-Information Science and Earth Observation (ITC) at the University of Twente, the Netherlands; Giovanni Spaliviero, Regional Planning Expert, ITC; Dr. Mohyeddin El Tohami, Land Specialist, UN-Habitat; Mohamed Ibrahim Shatta, Urban Planning Specialist,

UN-Habitat; Mr. Joshua Mulandi Maviti, UN-Habitat, Mapping Specialist, and Wael Al-Ashhab, Head of the Programme in Sudan, UN-Habitat.

Special thanks go to the US Government which, through its USAID Office of Foreign Disaster Assistance (OFDA) had confidence in this initiative and provided the generous financial support that allowed the finalisation of this report.

List of Acronyms

AMIS	African Union in Sudan	PWC	Public Water Corporation
CBS Sudan	Central Bureau of Statistics Sudan	PWSN	Public Water Supply Network
CBoS	Central Bank of Sudan	RSPSD	Regional Spatial Planning Strategy of Darfur
CSOs	Civil Society Organisations	SHHS	Sudan Household Health Survey
DDPD	Doha Document for Peace in Darfur	SMCE	Spatial Multi-Criteria Evaluation
DDS	Darfur Reconstruction and Development Strategy	SMoH	State Ministry of Health
DJAM	Darfur Joint Assessment Mission	SMPPPU	State Ministries of Physical Planning and Public Utilities
DLC	Darfur Land Commission	SRC	Sudan Railways Corporation
DRA	Darfur Regional Authority	SUPCs	State Urban Planning Committees
GER	Gross enrolment rates	ULA	Unregistered Land Act
GoS	Government of Sudan	UNAMID	The United Nations and African Union Hybrid Mission
HeRams	Health Resources Availability Mapping System	UNCSSO	United Nations Coordination Support Office in Sudan
IASC	UN Inter-Agency Standing Committee	UNDP	United Nations Development Programme
IDP	Internally displaced person	UNEP	United Nations Environment Programme
IOM	International Organization for Migration	UNICEF	United Nations Children's Fund
MoF	Matrix of Functions	UNIDO	United Nations Industrial Development Organisation
LJM	Liberation Justice Movement	UN-Habitat	United Nations Human Settlements Programme
Mol	Ministry of Industry	UNHCR	United Nations High Commissioner for Refugees
NGOs	International/National Non-governmental organizations	UNOCHA	UN Office for the Coordination of Humanitarian Affairs
NHA	National Highway Authority	USAID	U.S. Agency for International Development
NHDF	National Fund for Housing and Development	WES	Water and Environmental Sanitation
NBHS	National Baseline Household Survey	WFP	World Food Programme
NLC	National Land Commission		
OFDA	Office of U.S. Foreign Disaster Assistance		

Definition of Terms

Durable Solution: Internally Displaced Persons (IDPs) who have achieved a durable solution will, without discrimination, be entitled to: (i) long-term safety, security and freedom of movement; (ii) an adequate standard of living, including minimum access to adequate food, water, housing, healthcare and basic education; (iii) access to employment and livelihoods; (iv) access to effective mechanisms for restoration of housing, land and property, or for rightful compensation.¹

Return Option: Construction of basic service centres to encourage voluntary IDP return to areas of origin - and preferably to those settlements which are already "functional" (in terms of access to land, resources and services) where livelihoods can be sustained and stable security conditions maintained (support to rural urbanisation).

Resettlement Option: Government provides planned and demarcated land free of charge to those IDPs who voluntarily decide to resettle on the outskirts of the main urban centres, on condition they give up IDP status and build a permanent home within two years.

Reintegration Option: Urbanising some "consolidated" or "mature" IDP camps, when agreed with relevant authorities and there is a consensus among occupiers.

Regional Spatial Planning Strategy: Sets out a 'spatial' vision and strategy specific to a particular region with a view to maximising the benefits from investments and bringing about more balanced territorial development patterns, ultimately contributing to peace stabilisation and economic growth.

Sustainable Urbanisation: The overall redistribution of individuals and groups, a process characterised by changes in the roles and profiles of urban settings, and pursued without exacerbated social, economic and environmental impacts, in line with the principles of sustainable development.

Urbanising: A development process which brings about an adequate degree of spatial density to provide better access to shelter, basic and social services and infrastructure, local governance, security and economic opportunities.

Matrix of Functions (MoF): A matrix of ordered functions based on data collected on a specific territory, with a systematic listing of the main services, equipment, activities and facilities playing economic or social functions in individual human settlements. In the matrix individual human settlements are listed in the rows, with the columns showing which functions are available there, black squares denoting the presence of a function (if only one instance), total lack of which is reflected in white squares. With the matrix, each human settlement is characterised by all the functions it performs in a given territory, and its centrality increases with its ability to supply goods and services to people living in other areas. The analysis of the functional hierarchy among cities and towns provides planners, at one and the same time, a unitary, synthetic and comprehensive view of a large number of elements in a given territory. This is particularly relevant for the sake of sound regional planning analysis in data-scarce areas.

Spatial Multi-Criteria Evaluation (SMCE): This methodology helps planners and decision-makers to evaluate, compare and prioritise spatial alternatives. Depending on the availability and quality of data, a criteria tree is elaborated to assess the suitability of a given area.

Economic Development Area (EDA)
A priority area recognised as suitable for investment in economic, social and basic services, composed of a network of cities which support and complement each other in terms of socio-economic functions and road connectivity.

Development Corridor (DC): Main (existing and proposed) routes of multimodal transport networks which enable connectivity among urban centres, nodal towns and/or EDAs, adjoining countries, regions and States.

Nodal Towns (NT): Existing urban settlements which are designated as future centres of economic activity, located strategically at border crossings (international/national gateways) or as nodes between EDAs to improve the socio-economic performance of a development corridor.

¹ Framework on durable solutions for internally displaced persons (2009). UN Inter-Agency Standing Committee (IASC)



Part: One

01. Introduction

Darfur was first established as an independent region around the mid-17th century and for two to three hundred years remained independent under the Keyra Fur sultanate. By mid-19th century, the Darfur sultan was defeated by Zubayr Rahma, who was in turn vanquished by the Ottoman Empire. At that time, the latter was controlling Egypt and northern Sudan. The collapse of the Keyra dynasty plunged Darfur into anarchy.

The Islamic 'Mahdist' forces fought against British colonial control over the region and sought to incorporate Darfur into a much larger Islamic republic. A period of almost constant war followed, until 1899 when the Egyptians – by then under British rule – recognised Ali Dinar, grandson of one of the Keyra sultans, as the new Sultan of Darfur. This marked a *de facto* return to independence, and Darfur lived in peace for a few years until Dinar was ambushed and killed, together with his two sons, in November 1916. This brought the end of the Sultanate regime. In January 1917 Darfur was absorbed into the British Empire and became part of the Sudan, making the latter country the largest in Africa until the secession of South Sudan in 2011.

The conflict in Darfur has passed through many phases. In the 1970s and 1980s it had a predominantly tribal character. During that period most parts of North Darfur were hit by drought and desertification, leading to massive migration by some tribes to either South or West Darfur, especially to the Jebel Marra area which is relatively richer in natural resources. This massive movement of populations and cattle intensified the competition over resources (land, water and pastures) in those areas. During that phase Hakora and tribal Dar issues came up (Takana Peace and Conflict) and conflict subsequently spread across most tribal groups. Between 1976 and 2002 more than 35 tribal conflicts over resources were recorded.

The Darfur region has suffered from a protracted armed conflict since 2003, which has caused a huge influx of refugees to camps located close to main urban centres. It is estimated that around 1.4 million internally displaced persons (IDPs) are now living in camps, in addition to

approximately 300,000 refugees² who fled to neighbouring countries, especially Chad. The IDP camps put enormous pressure on State governments and the urban fabric when it comes to delivering essential services to both the host communities and the new settlers — in some urban settlements this influx even doubles the existing population.

The population of Darfur is an estimated 7.5 million³, which is distributed as follows: 2.1 million in North Darfur State, 4.1 million in South and East Darfur States combined, and 1.3 million in West and Central Darfur States combined. It should be noted that the subdivision of Darfur from three to five States under an early 2012 Presidential Decree, has much influenced this population distribution. The average annual population growth rate is slightly over 3%, which is significant.

At present, approximately 40%⁴ of the Darfur population live in urban areas (and over 50% within, or in to the vicinity of, the triangle formed by the three main cities of Al Fashir, Alginaina and Niyala) while 20% are nomads or pastoralists. The bulk of the balance (approximately 40%) either are IDPs or live in rural settlements. The currently intense urbanisation process observed in Darfur is strongly associated with the massive displacement resulting from protracted conflict. According to Laze (2012), the changing living and livelihood conditions of displaced families are a defining feature of urbanisation in the region, to the point that one could speak of "an urbanisation of displacement".⁵ For instance Niyala, the capital of South Darfur State, is booming with a population of around one million and is considered to be the second largest city in Sudan after Khartoum.

Moreover, IDP camps and mass migration to urban areas pose huge environmental threats, particularly as increased use of wood (to make fired bricks) accelerates deforestation in an already fragile ecosystem. The camps have also added to the social stress resulting from overcrowding and challenging living

conditions, triggering recurrent conflicts both between factions and with host communities. In 2012 and 2013, the region has seen fresh inflows of IDPs due to armed tribal conflict over gold in Jabal Amir (Northern Darfur), as well as between rebel groups and the Sudan Armed Forces (SAF) in Southern Darfur. It is estimated that more than 100,000 IDPs have left their villages and relocated to various neighbouring towns and IDP camps.

Darfur is dominated by the majestic volcanic peaks of Jebel Marra, one of the most profitable agricultural regions in Sudan, with an economy mainly resting on cattle/animal farming, gum arabic, groundnuts and other natural resources. However, because of the 10-year conflict the majority of the rural population has not been able to engage in its main livelihood options such as rainfed agriculture and animal husbandry⁶, in the process deteriorating the markets, disrupting trade and employment and eroding confidence for investment.

Furthermore, a practice has developed whereby the Darfur States would receive less than 50% of their planned fiscal budget allocations from the federal government; these have further declined after the secession of South Sudan in July 2011 which caused a fall of some 75% in national revenues from oil. On top of conflict-induced mass displacement, this sharp decline is the other reason that more than three million people in Darfur have been relying on food aid during the past decade.

After many years of negotiations and dialogue facilitated by the United Nations and the African Union Hybrid Mission (UNAMID), and thanks to the contribution of a number of countries – mainly Qatar –, the Government of Sudan and the Liberation Justice Movement (LJM) signed the Doha Document for Peace in Darfur (DDPD) in July 2011. The latter led to the establishment of the Darfur Regional Authority (DRA) through a Presidential Decree. Dr. Eltigani Seisi was appointed as DRA Chairman in September 2011, and the DRA became fully operational by February 2012. The DRA was mandated to implement the DDPD and to oversee the peace-building process and reconstruction of Darfur.

² Humanitarian Snapshot, 8 May 2013, OCHA.

³ Official census data, 2008. Central Bureau of Statistics Sudan.

⁴ Estimated by UN-Habitat

⁵ Urbanisation Aspects of Durable Solutions in Darfur. A background paper for the United Nations Coordination Support Office in Sudan. Alban Laze. September 2012.

⁶ An Independent Assessment of the State of Early Recovery Programming in Darfur. OFDA/USAID, Partners in Development Services Team, June 2012

MAP 01: DARFUR LOCATION MAP



UN-Habitat, 2013

The DRA launched the Darfur Joint Assessment Mission (DJAM) in August 2012 with support from UNAMID, UN agencies, the World Bank and the African Development Bank. This new assessment was based on a 2006 desktop review and included a consultative and participatory process in the five States. The DJAM identified the following issues to be addressed if durable peace was to be secured: (i) scarce qualified human resources across the whole spectrum of technical and administrative urban management functions; (ii) a vacuum in terms of legal, regulatory and institutional mechanisms to guide urban development and management; (iii) impaired productive and social infrastructures; (iv) scarce job opportunities; (v) unreliable basic services and infrastructure; and (vi) depressed if at all available revenue bases due to lack of updated fiscal mechanisms and poor financial and asset management.⁷

On this basis, the Darfur Development Strategy (DDS) was set out, focusing on three priority areas, namely:

- **Governance, Justice and Reconciliation** – improve governance at regional, State and locality

levels; streamline budget and fiscal management structures; review and enhance rule-of-law institutions and mechanisms; enhance peace and security in the region; establish a culture of transparency and accountability.

- **Reconstruction** – improve access to basic social services, including health, nutrition, water and education; meet immediate infrastructure requirements and assess future needs; properly address return, reintegration and/or urbanisation issues.
- **Economic Recovery** – facilitate improvement of agriculture, livestock and rural-based livelihoods; supervision and management of natural resources; development of the private sector.⁸

In order to foster greater participation in the DDS finalisation process, a Conference on Voluntary Return of IDPs and refugees was held in Niyala, Southern Darfur, in March 2013. The most important recommendations from the meeting were: (i) the need to form a higher committee and mechanism to implement voluntary return;

(ii) the need for the government to ensure security, by all means, to enable a peaceful and safe return; and (iii) the need to hold a joint conference with farmers and nomads to solve issues related to grazing areas, nomadic routes and access to natural resources.⁹ These are crucial recommendations for effective recovery and reconstruction activities and programmes in Darfur.

Meanwhile, in January 2013 the DRA drew out a *Development Projects Road Map* for Darfur based on the following principles: (i) implementation of an economic strategy which reduces poverty; (ii) financial federation and fair sharing of financial resources across Sudan; and (iii) implementation of integrated development projects for pastoral settlements and maintenance of security between nomads and farmers.¹⁰

In April 2013 a Donor Conference was held in Doha, Qatar, the funding required for implementing the Darfur's Development Strategy (DDS) and, ultimately, in support of the Doha Document for Peace in Darfur (DDPD), was pledged to approximately US\$7.2 billion over a six-year period. At the conference about half of this amount was secured for short-term fast-track priority development projects thanks to Qatar (the main contributor) and other donors, including the Government of Sudan, development banks and international NGOs (including grants, loans, banking facilities and credit).

Building on these achievements, development of a rigorous and unbiased *Regional Spatial Planning Strategy of Darfur (RSPSD)* is an urgent priority in order to support central and local government decision-making with regard to essential investments for the purposes of a viable reconstruction process. This represents the first, fundamental step of what is sure to prove a lengthy, challenging recovery process in the region, in view of the complex conditions detailed above.

This regional spatial strategy should secure the consensus of the various stakeholders, starting with the governments of the five States of Darfur, and is meant to guide the subsequent development of more detailed spatial and reconstruction plans.

⁷ Darfur Joint Assessment Mission (DJAM): 2013 Darfur Recovery, Reconstruction and Development Strategy.

⁸ <http://www.darfurconference.com/DDS>

⁹ Voluntary Return Conference, 25-26 March 2013. Voluntary Return and Resettlement Commission, Niyala, Southern Darfur.

¹⁰ Development Projects Road Map, January 2013. Darfur Regional Authority (DRA).

02. Background

Although major efforts have been made to anticipate the medium to long-term dynamics of displaced populations in Darfur, on-going conflicts throughout the region suggest that a large majority will most probably opt to go to or remain in the urban centres. Three distinct dynamics should be considered in terms of durable solutions/options for IDPs in Darfur, which are complementary (i.e., they are not mutually exclusive):

Option 1: The government provides planned and demarcated land free of charge to those IDPs who voluntarily resettle on the outskirts of main urban centres. The government sets out two conditions for such land allocations: (i) losing IDP status (i.e., losing the benefit of humanitarian aid) and (ii) building a permanent home within two years.

Option 2: Construction of return villages or basic service centres in a bid to encourage voluntary return of IDPs to their areas of origin. Preferably, these IDPs should be established in settlements that are already “functioning” and where access to land and other fundamental resources/services is granted to sustain livelihoods.

Option 3: The potential for urbanising some “consolidated” or “mature” IDP camps, if agreed with public authorities and there is a consensus among the families living there. “Urbanising” here refers to spatial regularisation of the camps, making it possible to open straight access roads and to deploy basic infrastructure and social services. This is easier for those camps that are closer to the main settlements, such as Abu Shook (Al Fashir) and Dereig (Niyala).

Although the Government of Sudan (GoS) has focused on promoting voluntary return for IDPs, the *National Policy for Internally Displaced Persons* of 2009 also recognises alternatives like IDP integration in the host community and resettlement to productive areas.¹¹

One of the most important aspects at this stage is to anticipate the estimated percentage of IDPs who will opt one of the three alternatives above. Of course, the choice will depend on a number of factors such as: IDP willingness to move; availability of land; ethnicity; capacity to live in an urban vs. a rural area; access to services and job opportunities; sense of security; geographical distribution of family members, etc. To compound the challenge, it is likely that many IDPs will remain in both urban and rural areas, i.e., part of the family will stay close or around the city or town where they settled years ago (options 1 or 3) and where they have access to services and job opportunities, with the balance moving back and forth to secure rural land for farming if it is not available close by (option 2).

Whichever option IDPs choose will put pressure on government authorities. Therefore, a policy shift is required to address urban and rural development simultaneously. Promoting the return to villages of origin must go hand in hand with development incentives and improved livelihood conditions. Meanwhile, integrating IDP camps into urban structures requires improved delivery of basic services and further infrastructure development.

NEED FOR A REGIONAL SPATIAL STRATEGY

In Darfur’s five main cities (Al Fashir, Alginaina, Aldiain, Niyala and Zalingay), the capacity to provide and maintain serviced land with infrastructure has been strained by massive migration of returnees as IDPs moved out of the camps and the conflict prompted rural people to migrate to urban areas. This rapid urbanisation process exacerbates the pressure on an already fragile environment. This has also led to a situation where urban areas have become places where the poor tend to concentrate regardless of scarce socioeconomic opportunities and where predatory uses of land and natural resources tend to prevail. Land issues – as is typical of post-conflict

conditions – are particularly complex to manage. Meanwhile, access to adequate shelter and basic services for the poor is among the most critical and urgent matters to be addressed.

Government authorities are currently making huge efforts to tackle accelerated urban growth in Darfur, trying to break the current dependency on humanitarian aid, and to engage seriously in early recovery. The urbanisation process, if properly addressed, also constitutes a real opportunity – thanks to the concentration of people and associated economies of scale – to boost a sustainable development in Darfur; this would reduce aid dependency, in the process building self-reliance and facilitating durable solutions for displaced populations.

At present, regional, State and local authorities in Darfur are ill-prepared to face the current rapid pace of urbanisation, especially in terms of urban planning tools and capacity. Despite the on-going decentralisation process whereby responsibilities for physical development are distributed across the three administrative levels of government (i.e. national or federal, State and locality), an absence of specific regulatory mechanisms between the States and localities is a source of continuous conflict. In addition, the transfer of these powers to the States has not been accompanied by a proportional allocation of resources. There is evidence that a large part of the related budget allocations are meant for routine operational costs only, leaving no room for increased State capacity to discharge devolved powers regarding physical planning and development. Meanwhile, most of the resources provided by the international community are still directed to humanitarian aid. Moreover, the splitting of Darfur into five States further complicates the administrative settings of the region, especially as low institutional capacities are dwarfed by huge needs. There is an urgent need to re-think the strategic importance of spatial planning in

¹¹ *National Policy for Internally Displaced Persons, 2009, Ministry of Humanitarian Affairs, Republic of Sudan.*

Sudan, and especially for Darfur, including both regional and urban planning, through improved budget allocations at the local level in an effort to boost physical development.

It should be noted that Darfur occupies a strategic location on the westernmost part of Sudan, close to the borders with the Central African Republic and South Sudan (south), Chad (west), Libya (north), and separated from the Nile River valley by the large province of Kordofan (east). This geographical location, far from isolating Darfur, has for many centuries encouraged the development of a network of trade routes channelling Sudan's major agricultural exports including groundnuts, gum arabic and livestock (NB: Darfur is part of long-distance livestock trade routes linking Libya and Chad to Omdurman and Egypt). These routes have also carried imports of electronic, household and other manufactured goods from Libya, as well as coffee, timber and foodstuffs from the Central African Republic. Nevertheless, after ten years of conflict, chronic under-investment, marginalisation and isolation from the rest of the Sudanese economy, most of these trading routes have suffered from worsening security conditions, which even led even to closure in some cases.¹²

Meanwhile, with the growing importance of Niyala, some trade flows have reversed, turning the town into a net importer of goods from Khartoum. Despite the reduction of exports from South Darfur, in Niyala the demand for construction materials such as cement, iron rods and foodstuffs has soared. This is also related to the presence of international agencies in this city, and their relatively higher purchasing capacity.

All of the above together called for the development of Regional Spatial Strategy of Darfur proposed in this document, the ultimate objective being to facilitate decision-making regarding the most appropriate and effective spatial implementation of recovery and

reconstruction programmes in this region of Sudan, especially by identifying the best locations for priority investments.

More specifically, based on the above-mentioned needs, **Regional Spatial Strategy of Darfur** must aim at the following achievements:

- **Facilitate a smooth transition from humanitarian relief to early recovery, sustainable reconstruction and economic development** in Darfur, with a set of spatial responses, in the process addressing IDP re-integration and return in a holistic manner.
- **Maximise the benefits of infrastructural investment**, through designation of suitable priority areas or "growth poles". Regional spatial analysis can help identify networks of urban settlements or growth poles connected by socioeconomic development corridors, which could provide suitable priority areas for investment.
- **Drive sustainable and balanced territorial development in the whole region**. The on-going conflicts across Darfur suggest that the bulk of IDPs will most probably "reintegrate" to existing larger urban centres or settle in medium-sized towns, as these are safer than rural settlements and typically offer a wider range of income generation opportunities. Therefore, if these intermediate urban centres are to contribute to more balanced territorial development in Darfur and alleviate the demographic pressure on larger urban centres, they must be strengthened in order to improve the supply of goods and services to incoming IDPs as well as rural populations in the vicinity. Moreover, such a regional spatial strategy must focus on strengthening the institutional capacities of these intermediate towns, as they have a greater interest in developing the potential of their respective territories and in building trust within their communities, in support of the overall decentralisation process.

- **Contribute to peace stabilisation and economic growth**. From a spatial perspective, the regional plan proposes a set of long-lasting alternatives for IDPs, such as: (i) long-term safety, security and freedom of movement; (ii) adequate standards of living, including access to food, water, housing, healthcare and basic education; (iii) access to employment and livelihoods; and (iv) access to effective mechanisms to restore their housing, land and property, or alternatively to provide them with compensation.¹³

A region wide spatial approach will put Darfur as a whole in a better position to achieve its full potential in terms of agricultural production and trade, enhancing opportunities for new spatial/economic relationships with Khartoum as well as neighbouring countries and regions. Improvements in the network of urban market-places as well as in the efficiency of the produce-processing chain will enhance internal and international trade flows, creating jobs along the way. This in turn will boost the peace-building process and sustainable development in Darfur.

¹² *City Limits: urbanisation and vulnerability in Sudan: Nyala case study (2011)*. Margie Buchanan-Smith. London: Humanitarian Policy Group, Overseas Development Institute.

¹³ *Framework on durable solutions for internally displaced persons (2009)*. UN Inter-Agency Standing Committee (IASC).

03. The Institutional and Policy Framework

THE GOVERNMENT SYSTEM IN SUDAN

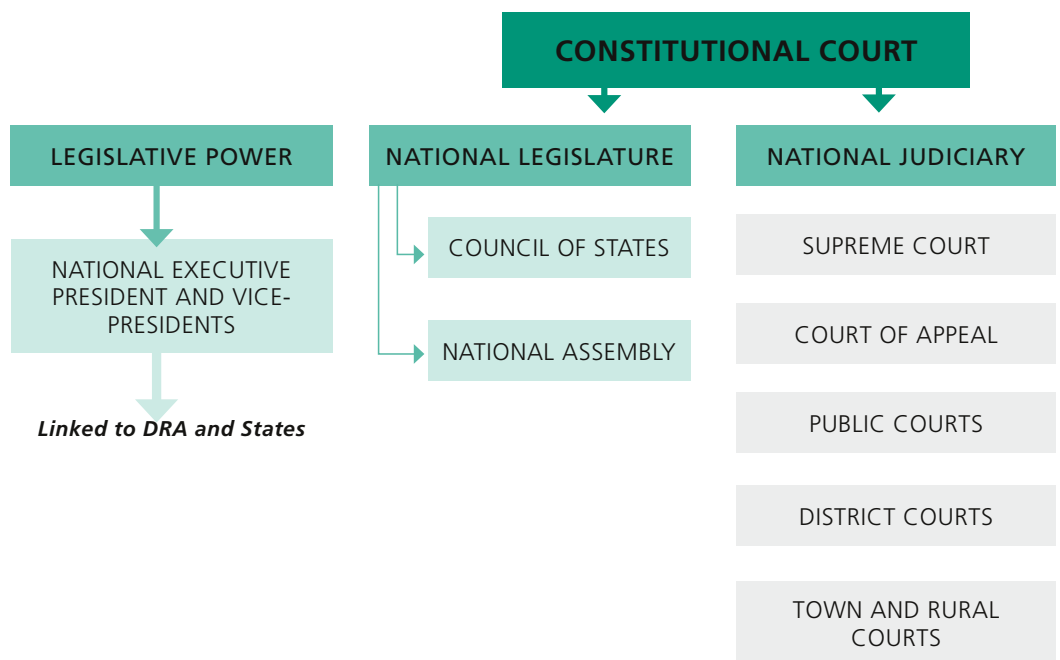
The government system in Sudan is composed of three distinct powers typical to democratic systems: Legislative, Executive and Judiciary.¹⁴ The Legislative includes the National Assembly and the Council of States. Their main function is law-making and approval of the country's budget as well as national strategies and plans. The Judiciary includes the Supreme Court, Appeal Court, Public Courts, District Courts and Town Courts; the administration of justice is based on a common legislative system. The Constitutional Court is superior to the judiciary as it decides on constitutional issues. Land registration is one of the functions and mandates of the judicial system in Sudan.

Executive Power includes the President, Vice Presidents, and the Council of Ministers (Federal and State Ministers); it carries out the day-to-day functions of the Government, including law implementation and enforcement.

THE GOVERNMENT SYSTEM AT STATE LEVEL

At State level, the governance system includes the *State Legislature*, *State Judiciary* and *State Executive* (the executive power is headed by the Governor or *Wali*). Localities are regulated by State authorities. Strengthening local governance is a priority for each State; at a lower level, localities, together with people's committees, are in charge of planning, implementing and managing policies in the education, health, agriculture and handicraft sectors and other public services. Localities are further subdivided into Administrative Units, which are not yet a formal part of the local government structure. Their main functions are close-range delivery of basic

FIGURE 1: MODEL OF GOVERNANCE SYSTEM



services to communities and facilitating the collection of local taxes (see Fig. 2).

THE INSTITUTIONAL SETUP FOR TERRITORIAL PLANNING

The Ministry of Environment, Forestry and Physical Development (MEFPD)

Urban and regional planning in Sudan involves three hierarchical levels. At the top level stands the National Council for Physical Development established under article 4 (1) of the Urban Planning and Land Management Act 1994. This Council is chaired by the Federal Minister of Environment, Forests and Physical Development; it brings together the five State Ministers of Physical Planning and Public Utilities (SMPPUs), five Under-Secretaries representing other relevant government departments and five other members designated by the federal government. The Ministry's mandate is as follows:

- with the consent of the Cabinet, set out national urban and regional planning strategies and related policies to ensure that land uses are both rational and consistent with national plans to promote a comprehensive and balanced territorial development;
- develop systems and methods to facilitate coordination among planning bodies at the various government levels;
- review draft plans for urban development as devised by individual States before submission to the Cabinet for approval;
- approve infrastructure development plans for settlements and residential areas pertaining to major projects, including any investment projects that involve more than one State; and
- draft legislation to facilitate implementation of approved urban planning policies and housing plans.

THE NATIONAL FUND FOR HOUSING AND DEVELOPMENT (NFHD)

As major housing policy designer, the NHDF was established in 2009¹⁵ to fund urban planning and development projects in cooperation with relevant authorities at the various government levels, as part of an effort in favour of more affordable housing.

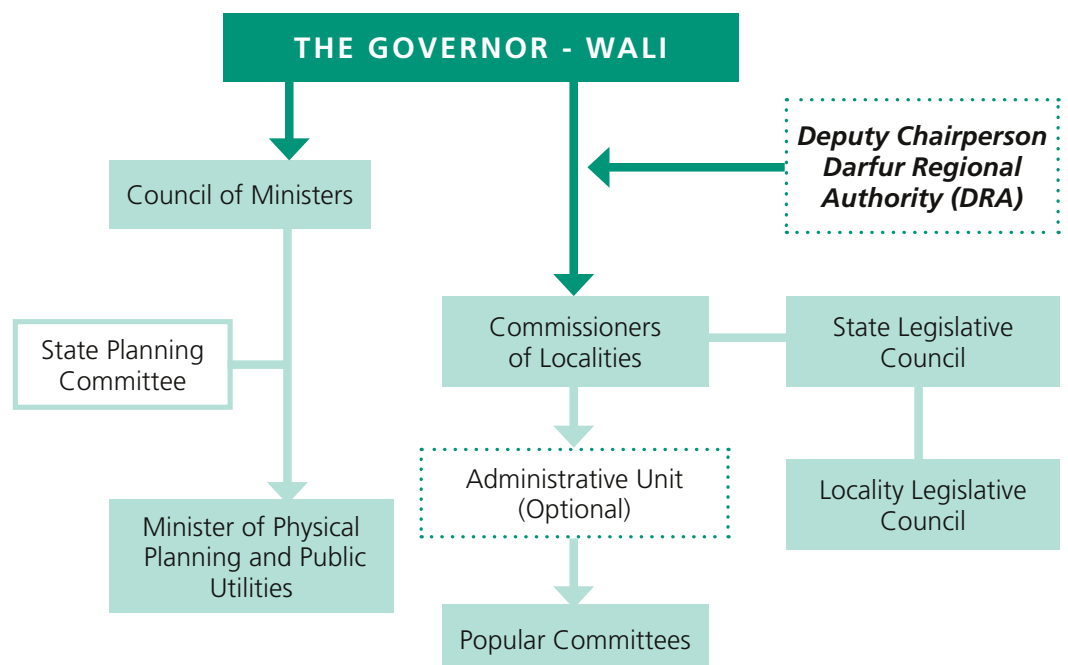
State Governments and State Ministries of Physical Planning and Public Utilities

The State Governments and State Ministries of Physical Planning and Public Utilities (SMPPUs) control land use and allocation; this includes sorting urban from rural areas in terms of density, as well as planning and delivering major infrastructures (roads, drainage, etc.)¹⁶, with the support of the State Urban Planning Committees (SUPCs, which were established under the 1994 Act). The main functions of SMPPUs are as follows:

- devise policies for urban planning and housing, including land allocations to, and use by, the State in line with national economic and social development plans;
- approve urban plans and infrastructure development plans at the State level, with the consent of the Minister; and
- allocate land and determine the way it is to be used in planned and unplanned areas, subject to the Minister's approval.

At the lower administrative level, localities (headed by Commissioners) are responsible for tax collection, provision of public services and regulating local infrastructure development, as well as building, construction and sanitation controls.

FIGURE 2: GOVERNMENT STRUCTURE AT STATE AND LOCAL LEVELS.



THE DARFUR REGIONAL AUTHORITY (DRA)

The DRA was established under Presidential Decree No. 46 of 2011 and was formally inaugurated in February 2012. It consists of 11 Ministers and five Commissioners, the DRA Chair and five Deputy-Chairs who are the governors of the five states of Darfur. Under this Decree, the DRA is considered the main organ for the implementation of the Doha Document for Peace in Darfur (DDPD) in cooperation with the Government of Sudan and with the support of international partners.¹⁷

As set out by the above-mentioned Presidential Decree, the DRA is responsible for:

- leading the post-conflict reconstruction and development process, including the coordination of international and regional partners participating in this process (NB: the DRA led the Darfur Joint Assessment Mission (DJAM));
- planning and establishment of, as well as compliance with, nomadic routes; and creating conducive and long-lasting conditions for the voluntary return and resettlement of refugees and displaced people, especially

through adequate land use planning and provision of secure land tenure.

It is important to note that the prerogatives of the DRA shall not contradict or affect the exclusive powers of the Darfur States nor those of the National Government, as provided for in the Constitution. However, the DRA is mandated for supervisory responsibility over all matters related to its areas of jurisdiction and competence as listed above. The DRA has the leeway needed to exercise concurrent powers with other government partners in areas such as: socio-economic development in the region, urban development and housing planning, policies on land ownership, use and rights, and development of Darfur's natural resources.

Traditional Land Tenure Systems

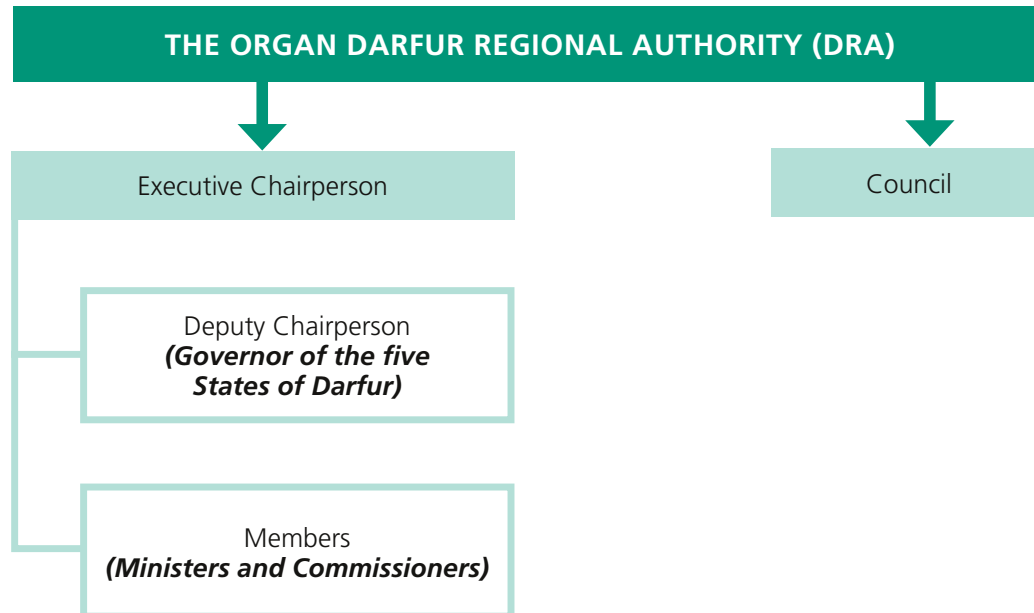
The concept of customary tribal homeland is the most important constituent of traditional land tenure in Sudan, and it is intimately related to the principle of native administration. The system derives from tribal territorial rights as they became recognised under the successive indigenous kingdoms of pre-colonial Sudan. Homelands provided tribes the collective security they needed and individual rights to land were recognised and could be inherited; but they did not include any power to alienate land from the ownership of the tribe. In northern

¹⁵ National Fund for Housing and Development Act of 2009

¹⁶ Fernando Murillo, Abdel Rahman Mustafa and Salah Osman, UN-Habitat Urban Planning and Development Project, Khartoum State, 2008

¹⁷ Doha Document for Peace in Darfur, 2011.

FIGURE 3: DRA ORGANISATION STRUCTURE



riverine regions, however, it was not before the 18th century that land started to become a commodity with a “price tag”, meaning it could be exchanged through sale, mortgage and marriage (Spaulding, 1979). By contrast, across the wetlands of Sudan, land is rarely, if at all, considered a commodity.

With the rise of Islamic kingdoms (Funj in northern, eastern and central Sudan and the Keyra Sultanate in Darfur), land rights were based on grants by both Funj and Darfur monarchs. Such grants were usually made to local administrators. In exceptional instances, however, the grants were made to individuals, usually reputed religious sheikhs. Many of the latter grants were authenticated by formal documents (the *Wathiga*, or ‘Charter’ of Funj monarchs, and *hakura*, or ‘concession/monopoly’ of Darfur sultans). Grants made to local administrators were considered ‘tribal’, in which cases they only pertained to usufruct rights. The grants to religious men and other notables were catered for and recognised as individual private land ownership. Under both Funj and Darfur kingdoms, the latter grants resulted in the creation of a class of landlords owning vast tracts and extracting dues and/or agricultural surpluses from their tenants and/or slaves. The system was further consolidated and relatively stabilised under Turco-Egyptian colonial governments through superimposed administrative

separation between sedentary and pastoral populations (Shazali, 2002). Reciprocity, as was made imperative by ecological variations among the various *dars* together with close symbiotic relations amounting to alliances forged through negotiations between tribal leaders, were important mechanisms ensuring entitlement to land and access to resources.

Tribal stabilisation on the rain lands of Sudan was, however, interrupted during the Mahdiya (1885-1898) when tribal leadership was abolished, with a form of religious-cum-national solidarity encouraged instead, and a new administration based on army leaders was instituted. Mass population movement and circulation within and across regions also characterised the Mahdist period. By the time of the reconquest (1898) tribal intermingling and administrative chaos tended to prevail across the country. Particularly affected were the clay plains of central and eastern Sudan, which saw considerable numbers of immigrants especially from Darfur and West Africa (Balamoan, 1981).

The *Unregistered Land Act 1970* and the subsequent *Civil Transactions Act 1983* provided the Government of Sudan with a legal mechanism to interfere with customary land management. This body of law was indiscriminately implemented all over the country, causing a major shift

in customary rights arrangements, in particular denying any formal legitimacy or legal status to customary property rights. As a consequence:

- customary rights became very unreliable and vulnerable under law;
- communities enjoyed use rights but without any genuine security of tenure;
- all community land became subject to restitution to the Government;
- financial compensation failed to make up for lost rights.

THE DAFUR LAND COMMISSION (DLC)

The *Sudan Interim Constitution of 2005* has established a *National Land Commission* with the mandate to arbitrate and enhance law compliance, assess appropriate land compensation, and advise relevant levels of government regarding land reform policies, making recommendations and taking in customary land rights.

The establishment of the Darfur Land Commission (DLC) under the Darfur Peace Agreement (DPA) of May 2006 has come with enormous potential challenges. While the DPA recognises the rights associated with *hawakir*, it does not address the conflicts that arise between those with a *hakura* and those without (camel-herding tribes in Northern Darfur, for example). The DLC has been established, but its work cannot start in earnest until the National Land Commission (NLC) has been established in turn. It is anticipated that the NLC will lay down a number of nationwide principles on land policy under which regional Land Commissions such as the DLC will operate. It cannot be stressed strongly enough here that if there is to be any chance of sustainable peace, there must be a substantial change in the legal, judicial and political frameworks governing land administration. The respective roles of the State, the native administration system and the newly-emerging political forces must be clarified so that comprehensive and integrated systems and structures can be rendered more democratic and

inclusive, and a resource management system introduced that suits the complex realities of the Sudan's overall conditions.

Civil Society

In Darfur, civil society organisations (CSOs) have a long history, especially since the drought and famine disaster of the mid-1980s. With the conflict that started in 2003, a dramatic expansion in size and scope of CSO operations in Darfur was observed. Approximately 65% of the CSOs present today in Darfur have emerged as a direct consequence of that conflict. At present there are 241 CSOs in the five States of Darfur.¹⁸ In general, they are concentrated in urban areas, especially in major towns. CSOs could play a significant role in the Darfur recovery process, based on experience gained during the post-conflict humanitarian support period.

Exiting Policies and Legal Framework for Land, Housing and Town Planning

Land use planning and management in Sudan started during the colonial era with a 1905 Land Law which is still in force today. This legislation regulates the procedures for land surveying and demarcation of land plots into various classes. Subsequently came the Land Settlement and Registration Act 1925, also still in force today, including amendments introduced at various stages. The 1925 Act addresses issues related to land settlement, registration and property rights.

Under the Unregistered Land Act (ULA) 1970, the government became sole legal owner of any unregistered land across Sudan. This affected particularly some regions such as Darfur, adding another layer of complexity to the land tenure system, which is influenced by several informal customary rules as explained above. This Act was followed by the abolition of upper-level native administration in 1971 and then of the native courts in 1973. The former was replaced by People's Local Councils and the latter by People's Local Courts. The new structures lacked capacity for managing access to land and resolving

related conflicts.¹⁹ In a bid to mitigate the consequences of the 1970 Act, the Government in 1984 issued the Civil Transactions Act.

This law abolished a number of previous statutes, and although the Unregistered Land Act 1970 was among them the situation it had created remained, i.e., freehold ownership could be obtained only for land registered on or before 6 April 1970, while land ownership contracted after that date still came under the "public utility" (effectively, long lease) regime.

Urban planning started to be institutionalised in 1946 when a Central Town Planning Committee was established, followed by the Town and Village Planning Act 1956. In 1971 a local governance system was established to decentralise urban planning responsibilities at the provincial level. In 1986 the Urban Planning and Land Management Act reformed urban planning practice in Sudan, with a clear allocation of responsibilities across three echelons of government local, regional and central.²⁰ This Act was enforced from 1994 onwards.

For all these institutional and legislative arrangements, whatever planning policies were implemented under them failed to prevent rural exodus to urban areas; more specifically, lack of a comprehensive national vision for urbanisation, and of the necessary pro-poor approaches, resulted in the emergence of informal settlements. Systematic deployment of the "site and service" concept in several parts of Sudan is behind some of the problems observed in urban settlements; this is especially the case in low-density areas where building extended networks of basic and social services is hardly affordable. Currently a shift is being observed in favour of urban and regional policies, which also take in the development aspects of villages and small towns; this is part of a strengthened regional development framework which benefits from the political determination and support of various States in Sudan. However, a clear strategy is still missing

on the best way of implementing this new approach.

The Five-Year Strategies (2012-2016) of the Darfur States

The current Five-year Strategic Plan (2012-2016) was devised as part of the Quarter-century Strategic Plan for Sudan (2007-2031). This plan, the second in a series of five, coincided with the secession of South Sudan and the ensuing overnight loss of most of Sudan's oil revenues. The split had a significant impact on the financial resources available to the federal government and, as a result, on government budget allocations to individual States. The current strategic plan is guided by the objectives of the three-year recovery programme (2012-2014) to restore balance and sustain political stability.

The strategy document dealt with each State of Darfur individually, but the respective missions, visions, goals and policies thus defined are all consistent with the overall national objectives, and all five States benefit from the support of the General Secretariat of the National Council for Strategic Planning. Since each individual State plan is an integral part of the national plan, the success of national planning is largely dependent on the achievements of regional/State planning.

The link between peace, recovery, reconstruction and the Regional Spatial Plan

As mentioned in the introduction, in the Doha Document for Peace in Darfur (DDPD) all parties agreed to encourage the participation of the people of Darfur in the planning, design and implementation of early recovery, reconstruction and rehabilitation programmes in the region. Three priority areas – reconstruction; governance, justice and reconciliation; and economic recovery – have emerged from the DJAM assessment.²¹ Accordingly, the Darfur Development Strategy (DDS) has made a number of preliminary suggestions regarding the selection of the most appropriate locations for the construction and rehabilitation of critical facilities to

¹⁸ Mapping and capacity assessment of CSOs in Darfur, 2009. UNDP

¹⁹ Land tenure issues: problems and implications, 2006. Musa & Gert.

²⁰ Proposal for a Physical Development Strategy, 2009 MEFPD

²¹ Darfur Development Strategy (DDS), 2012.

service the population, including easier access. As was mentioned earlier, these are crucial aspects which are for the Regional Spatial Planning Strategy to address.

UN-Habitat as facilitator and neutral UN Body

As a development agency, the United Nations Human Settlements Programme (UN-Habitat) since 2007 has promoted sustainable urbanisation in Darfur for the sake of recovery and socioeconomic development. The role of UN-Habitat is to assist governments, local authorities and communities in their efforts to achieve sustainable urban development through a wide range of normative and technical advisory services, addressing issues such as: urban planning, rehabilitation/construction and infrastructure development, provision

of basic and social services and adequate shelter, security of land tenure, and development of institutional capacities. UN-Habitat has adopted and applied a participatory, integrated and inclusive planning approach to solve urbanisation challenges. The rationale behind enhanced stakeholder involvement is to enable them collectively to identify their strategic needs, using these as entry points for sustainable recovery and development, while promoting local and national ownership. In this respect, UN-Habitat has extensive experience gained in more than 120 countries (including a number of post-conflict conditions) focusing on urban sector studies, land, shelter, post-disaster rehabilitation, urban management, participatory processes, training and capacity-building.

In a bid to enhance and complement its action in Sudan to date, UN-Habitat intends to intensify its partnership with the States of Darfur, the DRA and Central Government, taking advantage of lessons learned and accumulated experience to contribute to peace-building and accelerate the economic development of the Darfur region. This is to be achieved through improved spatial strategies and policies to deal with pressing issues such as affordable housing, return, reintegration and resettlement of IDPs and provision of basic services (such as schools, clinics, police stations, community centres, etc.).



Part: Two

04. Methodology

A rigorous and unbiased methodology is in order for the following, related purposes: an adequate analysis of the spatial complexity of the Darfur territory, based on the various themes highlighted in the chapter *Challenges and Opportunities*; and development of a set of feasible regional planning proposals for the future. Several methods are available for regional planning, which all involve geographic information systems (GIS). However, these methods have proved to be difficult to use in developing countries, for two main reasons:

- They require regional planning expertise which is difficult to find, even at the international level;
- If they are to yield meaningful results, such methods involve processing of large numbers and different types of data some of which are often unavailable, or difficult to collect.

Given these circumstances, a methodology was designed that could fit the specific circumstances of the Darfur territory. The latter is characterised by data scarcity, lack of institutional capacity and on-going conflict. For the purposes of this strategy report, it was decided to combine three main approaches:

- Carrying out a strategic analysis of the pattern of urban settlements, using the Matrix of Functions (MoF); this matrix is the most appropriate method for data-scarce areas, allowing for the synthetic display of results which regional planning typically requires; the MoF analysis is based on the mere availability, or non-availability, of key functions in each locality;
- Understanding the spatial suitability of key sectors for which nearly complete data sets are available (namely health, education, water and sanitation, infrastructure and the economy) through a Spatial Multi Criteria Evaluation

(SMCE) method, the aim being to refine the MoF results;

Conducting consultations at regional and State level in an effort better to apprehend, and subsequently plan, the territory through a participatory approach; this will help build consensus on the preliminary results obtained through the MoF and the SMCE, adding the necessary socio-economic perspective to the analysis and reflecting the views of the majority of the stakeholders.

Each of these individual approaches or methods has its own strengths and weaknesses when related to the ultimate purpose of obtaining an accurate, unbiased and clearly defined regional spatial planning strategy for Darfur. Where adequately combined, these approaches can help overcome the limitations of each when taken individually, resulting in a sound regional planning analysis as the basis for subsequent recommendations for spatial development.

The *guiding principles* under which the Regional Spatial Planning Strategy of Darfur (RSPSD) was developed are the following:

- Ensure ownership by all governmental institutions involved all along the process, providing “on-the-job” technical assistance when needed, and working to enhance the legitimacy of the exercise;
- Mainstream participatory planning approaches at the various levels, including through involvement of local groups in Darfur, and building consensus in a gradual sort of way;
- Apply conflict-sensitive planning throughout the process (the “Do-No-Harm” approach);
- Avoid socio-political bias, instead focusing on technical aspects as much as possible;

- Make maximum use of existing (and verified) information, in the process avoiding time-consuming, challenging and expensive data collection operations.

After several internal consultations within the technical team drafting the RSPSD, it was proposed to base this spatial strategy on the identification of priority Economic Development Areas (EDAs). Each EDA is composed of a group of urban settlements which, as the main towns in a locality or State, can support each other in terms of socio-economic functions and road connectivity. If, from a spatial point of view, these areas are well organized, with adequate capacities and resources, they will be in a position to boost their own economic recovery process and future development. This can only have positive ripple effects on the more broadly defined economy of Darfur, particularly as regards the hinterland of respective settlements thanks to effective rural-urban linkages. The EDAs should ideally be interlinked through Development Corridors (DCs), with Nodal Towns intermediating between two or more EDAs as well as with surrounding areas. In fact, Darfur should be further integrated into a greater, functional spatial development network.

The methodology behind the RSPSD can be synthesised in the following four phases:

FIRST PHASE: Stakeholder mobilisation and data collection/organisation

- Arranging an initial regional consultative workshop with representatives from the five Darfur States and from the federal government to discuss and agree on the objectives and the expected outcomes of the RSPSD. This workshop was also the occasion to present the methodology proposed for development of the RSPSD (in particular using the MoF and the SMCE) and the respective roles of the various stakeholders.

- Preparing baseline information through collection and organisation of existing data for the application of the MoF and the SMCE as well as for the preparation of key reference maps. Additional data is collected at the locality level through involvement (and appropriate training) of officers at the relevant State Ministries of Physical Planning and Public Utilities (SMPPUs).

SECOND PHASE: Preliminary spatial analysis and key consultative workshops

- Producing preliminary regional planning results through the MoF analysis, first at State then at regional level, together with an early definition of a spatial structure for the regional economic development of Darfur based on hypothetical EDAs, DCs and Nodal Towns.
- Arranging consultative workshops in every relevant State, involving all the stakeholders including local groups, with the aim of further expounding the proposed analytical methods and presenting, further discussion and validation of, preliminary results. These consultations also give an opportunity to carry out a locality-by-locality socio-economic analysis through group discussions, which is particularly important in the identification of priority EDAs.
- Organising a second regional consultative workshop with Darfur States and federal government representatives to carry out a mid-term review of the RSPSD preparation. Preliminary results

are further validated, gaps are identified and the institutional ownership of the process is enhanced.

THIRD PHASE: RSPSD drafting, finalisation of the spatial analysis and preliminary spatial planning

- Finalising the RSPSD outline, including the identification of the thematic challenges and opportunities of the Darfur region. Completing the MoF analysis and final designation of priority EDAs (primary and secondary) taking into account the outcomes of the State consultative workshops. This process extends to delineation of primary and secondary development corridors linking prospective EDAs, and to designation of nodal towns. Significantly, no cross-State Economic Development Areas are proposed. This makes it easier to map out (and subsequently implement) recommended strategic action plans in each State of Darfur. In the final step at this stage the prospective profile of each individual EDA is refined based on the multi-criteria evaluation of basic services and infrastructure.
- Outlining strategic action plans, including recommendations that take into account the outcomes of the MoF, the SMCE, the State-specific consultative workshops and on-going/planned main infrastructural and economic interventions in Darfur. These strategic action plans involve the type of capital expenditure needed to improve conditions in the proposed Economic Development Areas, Development Corridors and nodal towns. Special

emphasis is placed on basic services/ infrastructure and socio-economic aspects.

FOURTH PHASE: Technical revision of the RSPSD draft and political validation

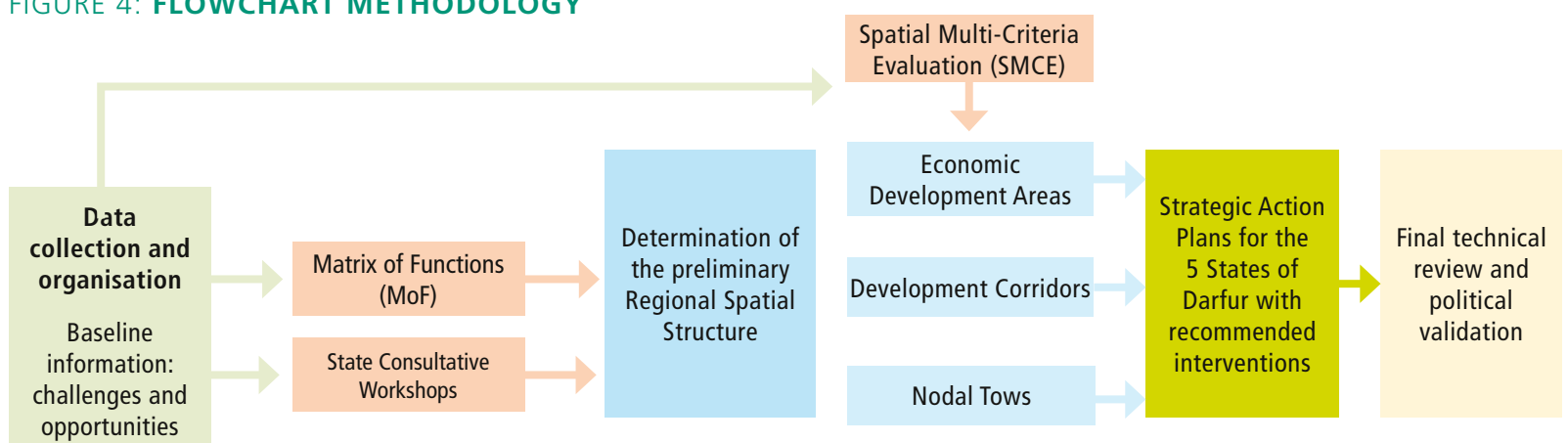
- Discussion of the analytical results and proposed Strategic Action Plans at the technical level. Representatives from the five States of Darfur and the drafting team meet to revise and finalise the draft RSPSD, and include recommendations for the way forward.
- Political validation of the RSPSD during a final consultative workshop, bringing together high-level representatives from the federal government and the five States of Darfur, as well as bi-lateral and multilateral partners such as donors, UN agencies, international NGOs, etc. This is followed by a final revision and completion of the document for publication and dissemination purposes.

Main constraints encountered

Data quality (piecemeal data sets, mismatches across different sources, data quality variations across States, etc.)

Difficulty of access, time and resource limitations, staff dissemination across different locations, etc.

FIGURE 4: FLOWCHART METHODOLOGY



THE MATRIX OF FUNCTIONS (MOF)

The matrix of ordered functions is based on data collected through a questionnaire. This survey enables SMPPPU officers to document the main services, equipment, activities and facilities which play an economic or social function in every locality in Darfur. The data collected is arranged in a matrix, with localities in the rows and functions (if only a single one) in the columns. In this display, black squares denote the availability of a particular function while blank squares denote its absence in the relevant locality.

Rows and columns are re-arranged to reach an overall, well-ordered pattern of white and black squares, based on which functions can be ranked and human settlements sorted. Importantly, each human settlement is characterised by all the functions it performs in a given territory. The centrality of a human settlement increases with its ability to supply goods and services to people living in other areas.

An analysis of the functional hierarchy among a number of cities and towns gives the planner, at one and at the same time, a homogenous, synthetic and comprehensive view of a large number of elements in a given territory. This is particularly relevant if any sound regional planning analysis is to be conducted in data-scarce areas.

The first three rows of each matrix of functions show respectively, from top to bottom:

- the serial number and denomination of the function;
- the “value” or “weight” of the function, calculated dividing 100 by the number of times that the function is present;
- the “frequency” of the function, i.e., the number of times it occurs.

The first three columns of the table show respectively, from left to right:

- the population of a settlement as estimated in the latest census;
- the number of functions available in each area
- the centrality index, calculated by summing up the values or weights of the functions present in the row of the settlement concerned;

Based on the centrality index, a functional hierarchy of human settlements was established, taking every significant gap identified between one and the next index value as a change of ranking or level.

Specific constraints encountered while using the MoF:

- choice of functions and their effective availability (e.g., where a well is destroyed the function is not available);
- proper design of questionnaire;
- accuracy in data collection.

THE SPATIAL MULTI-CRITERIA EVALUATION (SMCE)

Multi-Criteria Evaluation (MCE) has been used for about 50 years and still new approaches are being developed. Spatial MCE (SMCE) came up in the 1990s with the advent of GIS and, since a couple of years, can even be performed on the Internet. The SMCE methodology assists planning professionals and decision-makers looking to assess, compare and prioritise spatial alternatives.

In the particular case of Darfur, it assists in the evaluation of individual localities in the following ways:

- treating all alternatives in the same way, for fairness in decision-making;
- configuring decisions in terms of prioritised objectives and criteria applied to indicators. These indicators measure

the performance of each alternative in terms of the objectives. This brings normative transparency, highlighting the “utility” of available alternatives with respect to the objectives; and

- aggregating a large volume of information, which secures the resources needed to make decisions in complex situations.

Description of the evaluation method

A diversity of indicator maps are configured into criteria trees according to the specific objectives pertaining to each individual indicator. For example, to know which locality has the best healthcare system the SMCE methodology requires us to configure a so-called “criteria tree”. The trunk of the tree is the overall objective of the evaluation. Sub-branches are sub-objectives which together define what our overall objective is about. Each sub-objective may in turn come with secondary sub-objectives. Ultimately, each sub-objective carries a number of indicator branches in the form of maps.

These could be a map of “distance to healthcare centres” or a map of “number of medical officers per locality”. Since these two different maps (1) come with their own physical measurement units (respectively “metres” and “number of medical officers”), and (2) are subject to different norms or standards, for each indicator apply a criterion equation which converts the data into a “utility” value. This utility value encapsulates the way we interpret the data, and ranges from value “zero” (i.e., no utility) to “one” (i.e., full utility). For example, if a healthcare centre is further away than 5 km walking distance, its utility will be “zero” for the hinterland communities; conversely, where a health facility is available in a locality, its utility value will be “one”. Similarly, all localities that meet the standard ratio of medical officers per number of population carry a utility value of “one”. If this ratio drops below the standard (i.e. too few medical officers for the population) it is possible to opt for a gradual or a steep reduction in the utility value. In this methodology, such

standards, norms, or interpretations of the data are referred to as “criteria”, hence the name “criteria tree”.

Once all indicator maps have been converted to utility maps, all featuring the same scale of utility values (from “zero” to “one”), locations can be compared in terms of respective utility. For each location (on a map), the utility values of the different indicators can be summed up, which have previously been weighed for the relative importance. In this way an aggregate utility map for each objective is created. For instance, when all brought together, indicators of health facilities result in a utility map showing the extent to which localities meet the required number of health facilities. In turn, all objectives can be prioritised, weighted and aggregated by summation to produce an overall utility map on, e.g., the healthcare theme. Finally, the overall utility map is aggregated for each of the themes by calculating for each locality the average utility across the area of the locality. This allows comparing the localities with a single spatial statistic.

This strategy for Darfur, uses the Spatial Multi-Criteria Evaluation function available in the open-source ILWIS²² Geographic Information System software.

Application of the evaluation method

Four specific themes (healthcare, infrastructure, education, and water and sanitation) were identified, for which SMCE was applied. For each theme a chapter is presented which, complete with maps, discusses the rationale of the evaluation, the results per locality as far as they are clustered in an Economic Development Area, the data source and quality, together with a self-explanatory criteria tree.

A large map shows the overall utility value of localities for the theme; smaller maps show utility values per major objective across the Darfur localities and area as a whole.

This evaluation is a so-called “ex-post evaluation”, because the Economic Development Areas (EDAs) were defined in the first place on the basis of an analysis of challenges, the Matrix of Functions, and the consultative workshops. Each EDA is evaluated with respect to each of the themes.

Specific constraints encountered while using the SMCE

Data has been of variable availability and accuracy. For healthcare, detailed, reliable, systematic quarterly data is available, while for other themes it is not. While it is possible to undertake a sensitivity analysis of data uncertainty, this was considered beyond the scope of the study.

For some indicators, distance maps were available, for instance distance to health centres. To match such maps with statistics for a locality as a whole, the average distance utility across the locality was taken. This means that an area-weighted average of performance is calculated, against which one can make rough comparisons for availability (of healthcare centres, for example). A more precise network analysis could have been performed but, again, was considered beyond the scope of the study.

Although staff in spatial planning agencies in Darfur and at national level have been trained in the principles and software behind SMCE, so far they have not had hands-on opportunities to build on the overall outcomes of SMCE analysis. It would be prudent to take advantage of these capacities, disseminate both compiled data and the free and open-source ILWIS software and give these planning professionals the required training to use the data and analysis that have been generated.

THE STATE CONSULTATIVE WORKSHOPS

The main objective of the workshops was to promote a participatory approach at the various levels to build consensus on the Regional Spatial Planning Strategy among all stakeholders in Darfur.

For each workshop, three presentations were prepared:

- *Urban and Regional Planning*, including concepts of regional planning and an introduction to the main methods and tools used to develop the RSPSD
- *Participatory planning* and related concepts
- *Land and social peace*: mainstreaming participatory approaches as an effective mechanism for handling land disputes

After the presentations, discussions were held to identify the main problems to be addressed at the State level and recommendations were laid out.

Participants were next split into working groups for the purposes of participatory decision-making, with a mandate to identify the specific potential of each locality. The twin objectives were always the same: to bring about well-balanced socio-economic development and to encourage IDP integration. The outcome took the form of a ranking of localities in each State, with recommendations on potential activities to be developed.

²² <http://52north.org/communities/ilwis/ilwis-open>.



Part: Three

05. The Spatial Challenges and Opportunities of Darfur

CONFLICT

The Darfur region has experienced persistent tribal conflicts over the past 80 years. Between 1932 and 1982, 15 instances were recorded, while between 1983 and the year 2000 the number rose to 26. The severe drought that hit the Sahel region in the 1970s and 1980s affected the lives of millions of people in Darfur, causing massive migration of people and cattle from North to either South or West Darfur. This phenomenon exacerbated competition over already limited natural resources, particularly land, water and pastures. As a consequence, tribal conflicts spread among nearly all groups²³. The situation became alarming from 2003 onwards, when major fighting between government forces and rebel groups erupted. The rebels claimed that

the Darfur region had suffered decades of political marginalisation and economic neglect from the central government in Khartoum. Government forces responded and the fighting escalated, causing huge displacements of people up to this day.

Currently, tribal rebel groups have splintered into numerous factions and the situation is becoming increasingly complex, with extensive proliferation and use of weapons in both rural and urban areas. Frequent attacks and hijackings keep interfering with the work of humanitarian organisations, and secure transportation of goods for either consumption or construction remains a challenge.

A more inclusive and durable peace solution is needed in Darfur, through wide-ranging governance reform and and

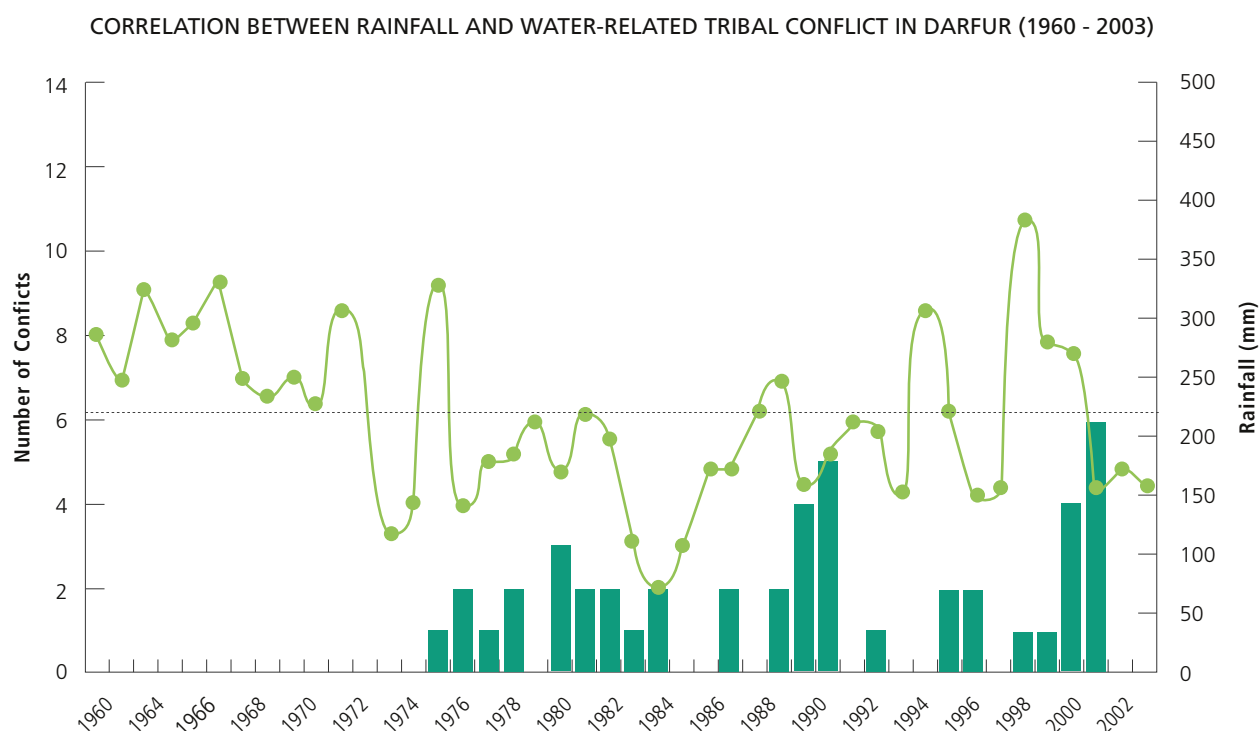
an effective, nationwide dialogue between the government and all armed groups.

A multi-faceted conflict

Darfur has long been affected by desertification and competition over natural resources, and recurrent droughts and shortage of grazing lands have repeatedly led to violent conflict between nomads and farmers, increasing inter-tribal tension along ethnic lines. From an empirical point of view, a correlation is observed between the amount of rainfall and the number of conflicts: when the region enjoys high rainfall, fewer conflicts are occurring, and vice versa (see Fig. 1).

Together with socio-economic under-development, the dismantling of the native administration has combined with the spread of small arms and weak local

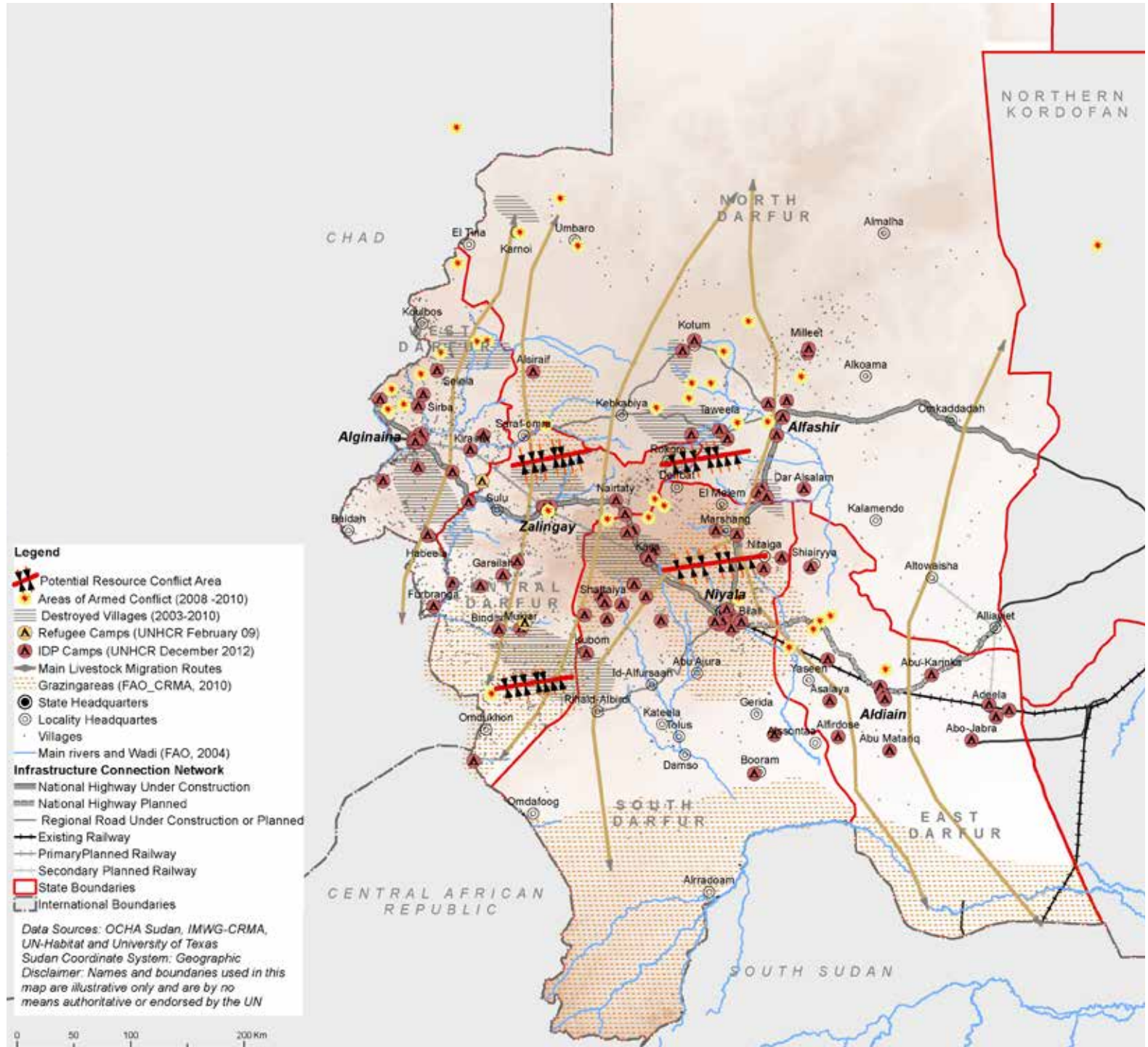
FIGURE 5.1: WATER-RELATED CONFLICTS



²³ Musa Abdel Galil, 2006, *Situation analysis of the land tenure issue*.

MAP SCO01: CONFLICT

REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



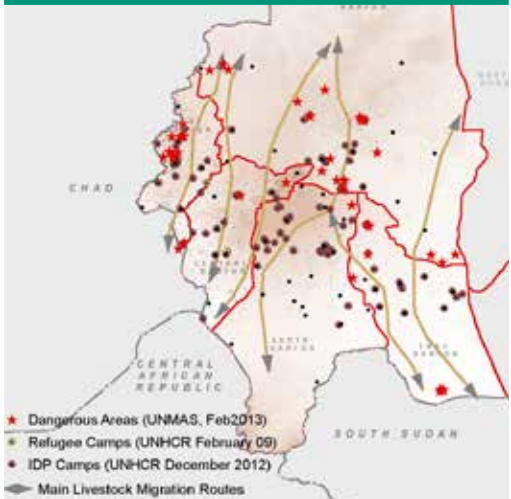
DISPLACEMENT AND TRIBAL CONFLICTS (2012 - 2013)



DARFUR ETHNIC DISTRIBUTION



DANGEROUS AREAS (UNMAS, FEBRUARY 2013)



governance and law enforcement to exacerbate social tension and contribute to the conflict. Though essentially rooted in fierce competition over natural resources among pastoralists and farmers, the conflict has gradually assumed an ethnic and cultural dimension. This is clearly illustrated by the re-demarcation of local administrative boundaries along ethnic or tribal lines as well as a tendency among tribal leaders to make claims of a more political nature. Darfur has also seen growing numbers of disputes over customary and statutory laws governing land tenure and access to land, and more recently over minerals in Jabal Amir in North Darfur.

With the establishment of a regional government system of Darfur in the 1980s, conflict patterns changed and took on a more pronounced ethnic dimension, as shown by the Arab-Fur (1982-1989) and Arab-Masalit (1996-1999) conflicts, with more than 30 distinct Arab groups reported to have forged alliances during these conflicts²⁴. In recent years in West Darfur (Kulbus, Sirba and the Masteri administrative unit) fighting flared around nomadic corridors overlapping grazing areas used by farmers.²⁵

This persistent crisis has deeply upset the social stability of the Darfur region, with weapons and violence becoming the defining feature of relationships between groups and communities, ushering in a highly militarised environment with scant regard for the rule of law. Altogether, this has led to increasingly ineffective formal or informal conflict resolution mechanisms.

Conflict typology

Three types of conflict can be distinguished in Darfur, which are often inter-related:

i. Inter-tribal conflict, typically derived from competition between nomads and farmers over resources, subsequently developing into conflicts among herders themselves (Brosché and Rothbart, 2013, pp. 51-53).

ii. Centre-periphery conflict: the domination of the central elite in Khartoum has had devastating effects on most Sudanese regions, especially isolated Darfur, resulting in substantial deprivation in terms of healthcare, housing, education and critical agricultural supplies (de Waal, 2007).

iii. Power/wealth-sharing conflict, as specifically addressed in the Doha Document for Peace in Darfur (DDPD, art. 3): "Power sharing in Sudan, and in Darfur in particular, shall respect the principle of proportionality, and Darfur shall fully participate in all forms of political power in Sudan's National Government".

Displacement and urban land issues

Due to the conflict, internally displaced persons (IDPs) and other migrants have fled their homelands and settled close to urban areas along two main patterns:

i. Occupation of the urban fringes: new settlers generally prefer to live just outside urban areas in a bid to benefit both from customary laws regulating access to rural land and from the basic services made available in cities and towns. Once conditions stabilise, these IDPs or migrants can either be resettled within urban boundaries, or these boundaries can be changed to absorb peripheral areas once compensation with land owners is agreed upon.

ii. Urban densification: this phenomenon occurs when urban land owners allow IDPs/migrants (with relatives or others) temporarily or permanently to settle on their plots, which are effectively subdivided. This is often at odds with urban planning schemes and typically results in unhealthy overcrowding and increased pressure on already scarce basic services. In this case, the solution is mostly of an administrative nature and rarely ends up in civil courts²⁶.

The challenges of establishing solid peace agreements

In May 2006, a Darfur Peace Agreement was signed. However, being the outcome of botched negotiations which cut out the main rebel groups, the deal was flawed from the beginning. Fresh consultations were held, ending up in 2011 with the signature of the Doha Document for Peace in Darfur (DDPD) between the Government of Sudan and the Liberation and Justice Movement. Although the document addresses the root causes of the conflict and provides a clear roadmap to achieve durable peace (including power-sharing, wealth-sharing, human rights, justice and reconciliation, compensation and return, and internal dialogue), implementation is rather slow. This is causing disappointment and frustration among the Darfur population.

Furthermore, in May 2011 a tripartite consultative mechanism was set up between Sudan, Chad and the Central African Republic to discuss border security issues. As a result, enhanced stability along the borders allowed over 95,000 refugees to return to their home country between 2011 and 2012.

Unfortunately, the recent tribal conflicts which started in 2013 have reduced the number of returnees, making implementation of the DDPD even more challenging.

Recent tribal conflicts

It is apparent from the graphs in Figure 2 that the number of violent deaths in 2008 was higher than in 2009, while during the first half of 2010 it was much greater than during the whole of 2009. After the signature of the DDPD in 2011, conditions in Darfur remained stable until the end of 2012.

The eruption of unprecedented tribal conflicts in early 2013, particularly in the States of North and South Darfur, has caused significant loss of lives and displacement. The UN estimates that in Darfur as a whole over 300,000 people fled the fighting in the first five months of 2013, passing the total number of people displaced in the previous two years put together.

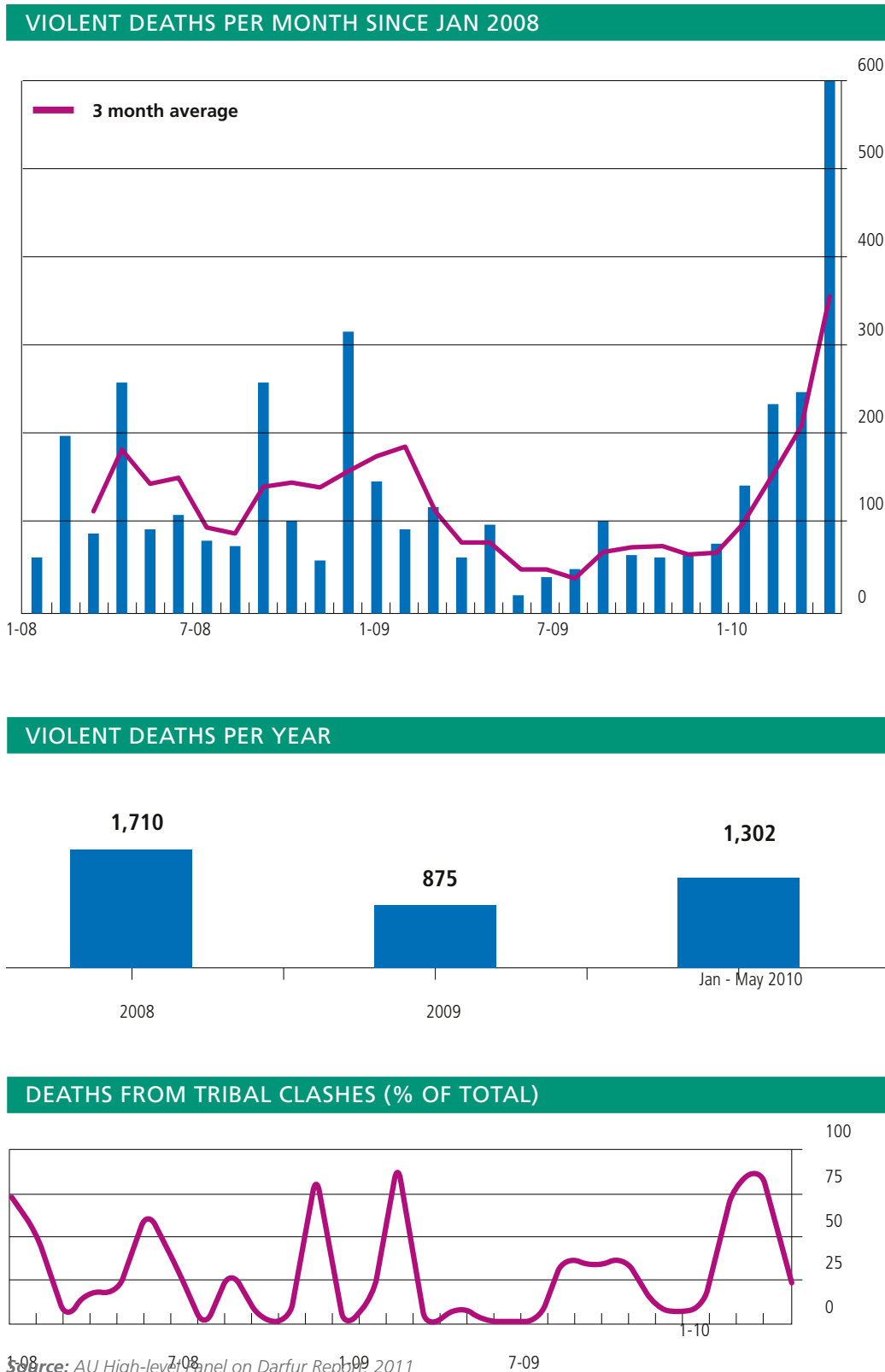
²⁴ Ayyub (1992); Rabbah (1998).

²⁵ UNDP-CRMA, 2011 - West Darfur Analysis.

²⁶ UNDP, 2007 - Situation analysis on future recovery.

FIGURE 5.2: RECENT CONFLICT EVOLUTION IN DARFUR

NUMBER OF VIOLENT DEATHS LOW IN 2009, VERY VOLATILE IN 2010



Source: AU High-level Panel on Darfur Report, 2011

The causes of the conflict are land disputes (South Darfur), control of gold mines in the Jebel Amir area (El Sereaf locality, North Darfur), and tension between farmers and pastoralists in Masteri (Baidah, West Darfur). The situation worsened further in 2014, causing more displacement.

The dependency syndrome and donor fatigue

Although in 2012 UNOCHA alerted the international community to the needs – food and basic services – of over 40% of the Darfur population (UNOCHA, 2012), the amount of funding available for

humanitarian assistance has been steadily decreasing over the past 2-3 years. The UN and African Union Hybrid Mission in Darfur (UNAMID), has long been one of the largest peace-keeping missions worldwide, is shrinking both in terms of resources and staff numbers. The main reasons behind this are: (i) general donor fatigue towards a protracted conflict which started in 2003, with a huge and expensive dependency on humanitarian relief; (ii) conflicts in other regions (e.g. Syria) competing for attention; and (iii) the effects of the global economic crisis.

As a result, in the coming years meeting the basic needs of camp-confined IDPs may become a challenge given the decreasing availability of funds, uncertain donor commitment and lack of tangible steps towards recovery and development, except for fragmented interventions here and there.

The environmental impact of the conflict

Over the past decade, the large-scale conflict has caused significant environmental degradation as well as permanent damage to pre-conflict livelihood and adaptation patterns. In general, severe tree felling and removal of vegetation are occur as a matter of routine around IDP camps, resulting in quasi-desert areas of 3 to 10 km of radius (depending on camp size). Acacia woodlands have been stripped down by IDPs when not destroyed by wildfires, and after reforestation it may take five to 10 years before they can produce fuel wood or building poles again (Abdel Nour 2006). Competition over scarce natural resources among pastoralists, among farmers or between pastoralists and farmers, also has a large-scale environmental impact.

The conflict has caused major displacement, with massive needs for reconstruction. Use of inappropriate building techniques – like fire bricks, widespread in Darfur for many centuries – is only adding to pressures on an already very fragile ecosystem.

THE ENVIRONMENT

Darfur is located on the edge of the Sahara desert, which covers 28% of its surface, mostly in Northern Darfur. Sandy and Qoz soils (mainly lime) spread over 65% of the northern part and 10 to 15% of the southern part of Darfur. The central part of the region is characterised by the mountainous and hilly lands of Jebel Marra plateau and the Meidob Hills to the north. Clay and Gardud soils occupy the western and south-western parts of the region, and some pockets in the North²⁷.

Darfur, like the rest of Sudan, is an arid region characterised by a fragile ecosystem and low rates of precipitation (under 700 mm per year), which follow an erratic and very variable regime. Drought is chronic in Darfur, and over the last decades some severe events have had disastrous effects on livelihoods and environmental conditions.

Desertification, deforestation and land degradation

A pronounced desertification process is observed in Darfur²⁸, with millions of hectares of grazing land turning into desert. The impact of climate change is adding to pressures on traditional livelihoods for both sedentary and pastoralist communities, which are highly dependent on environmental resources. Environmental degradation in Darfur is also the result of the loss of traditional governance systems due to massive population displacement and the fighting behind it²⁹. In fact, protracted population displacement was accompanied by an unprecedented exploitation of water, forest, grazing land and other environmental resources.

Unresolved land issues have further aggravated land degradation. The 1925 *Land Resettlement and Registration Ordinance* deals with both urban and rural

land and continues to regulate how the latter is allocated and registered. Under the *Unregistered Land Act 1970*, though, the Ordinance exclusively applies to northern and central riparian Sudan, since individual land rights away from the Nile River valley, such as in Darfur, Blue Nile, East Sudan and Kordofan, are not recognised.

Lack of registered land in Darfur effectively denies access to public credit institutions, such as the Agricultural Bank of Sudan, as people cannot use land as collateral. Therefore, the capacity of Darfur farmers to improve land management and invest to prevent degradation processes has been reduced, forcing them into informal credit mechanisms.

As mentioned above, since the early 1970s severe and recurrent drought spells have affected Northern and Western Darfur, leading to the decline of agricultural productivity and famines in 1983-1985. Declining rainfall trends were associated with changes in global and sea level temperature patterns, as well as in land-atmosphere feedback mechanisms as mediated by vegetation. The effects of these drought spells were compounded by three further factors: dust from the Sahara, intensive use of land (also due to poor economic diversification) and higher population and livestock counts, causing severe land degradation in Darfur and triggering desertification³⁰.

Exacerbating the desertification process, which has been particularly severe in the northern part of Darfur for the last decades, the region is experiencing extensive deforestation (in excess of 1% per annum³¹) due mainly to the conflict. Population displacement and urbanisation have combined to put pressure on natural resources. The environmental impact of IDP camps has included the destruction of shelter belts, forestry and farmland on the outskirts of major towns. Consequently, use of wood –for housing construction, charcoal-making and, especially, for

production of fired clay bricks – has increased alarmingly in response to the needs of urban areas and IDP camps. These pressures have added to those caused by nomads, who traditionally cut trees for camel grazing.

Considering the limited availability of forest resources and high demand for wood resulting from the reconstruction process (NB: it is estimated that 12–16 million mature trees are needed if all IDPs use fire bricks to build their own homes³²), the adoption of environment-friendly building practices and energy sources is a must.

In rural settings like Darfur, forestry is of particular economic significance, providing a significant source of livelihoods for many. However, forestry also plays a crucial role in land conservation, retaining water among other essential environmental functions. Reversing the trend of forest-cover loss is one of the major environmental challenges Darfur must face in the coming decades.

Rangelands are open forests featuring scarce tree and scrub cover, which allows grass to grow and provides for livestock grazing. Prior to the conflict, land classification studies and surveys assessed South and West Darfur as amongst the wealthiest States in Northern Sudan in terms of forest resources, on equal footing with Southern Sudan. The current extent of forests in Darfur is unknown; according to estimates in the 1998 National Forest Inventory, the surface area of exploitable growing forests amounts to 24.25 million feddan (or 10,200 km²), equivalent to half of all forest areas in Northern Sudan³³. Using satellite imagery, the Africover mapping study estimated that tree cover in Darfur had fallen to 22.85 million feddan (or 9,600km²) in 2004, or a 0.54% decline on an annual average basis. The forest cover is now probably even more depleted due to increased use of firewood and charcoal production.

27 *Environmental Degradation as a Cause of Conflict in Darfur: Conference Proceedings, December 2004*. University for Peace, Khartoum.

28 Desertification, as defined in the UN Convention to Combat Desertification, is the degradation of land in arid, semi-arid and dry sub-humid areas caused by climatic change and human activities.

29 *Environmental degradation and conflict in Darfur: implications for peace and recovery*, Brendan Bromwich, June 2008. Humanitarian Practice Network n. 39.

30 *Environmental and livelihoods vulnerability mapping in North and South Darfur, Sudan, July 2010*. IOM and ProAct Network.

31 *Sudan. Post-Conflict environmental assessment*. UNEP, June 2007.

32 *Ibid n. 31*

33 This includes forest species ranging from acacia desert scrub in North Darfur to woodland savanna in South Darfur, and special areas of woodland savanna in South and West Darfur.

MAP SCO02: ENVIRONMENT

REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR

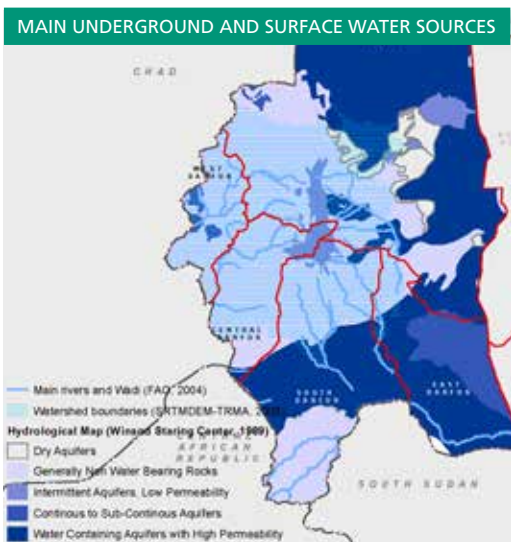
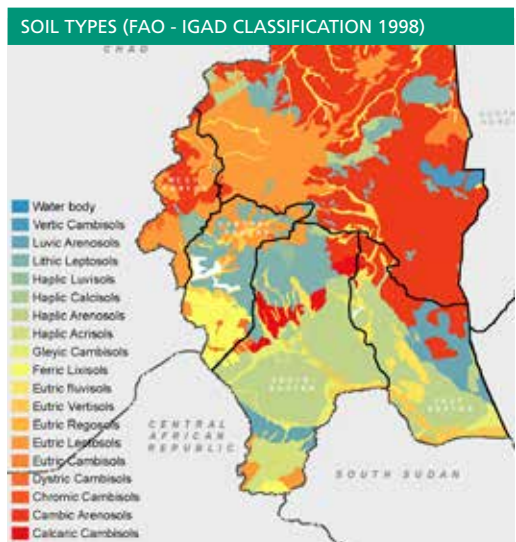
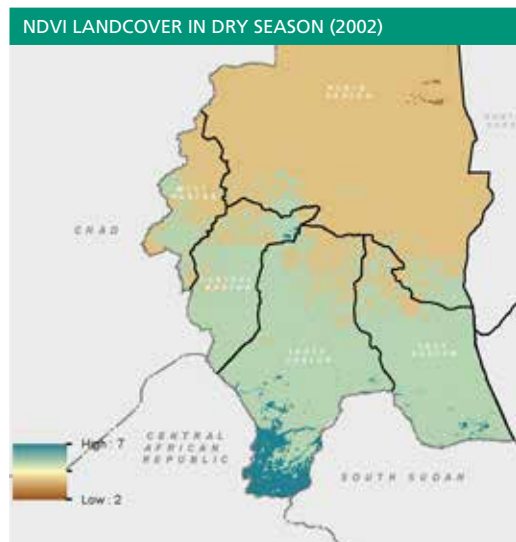
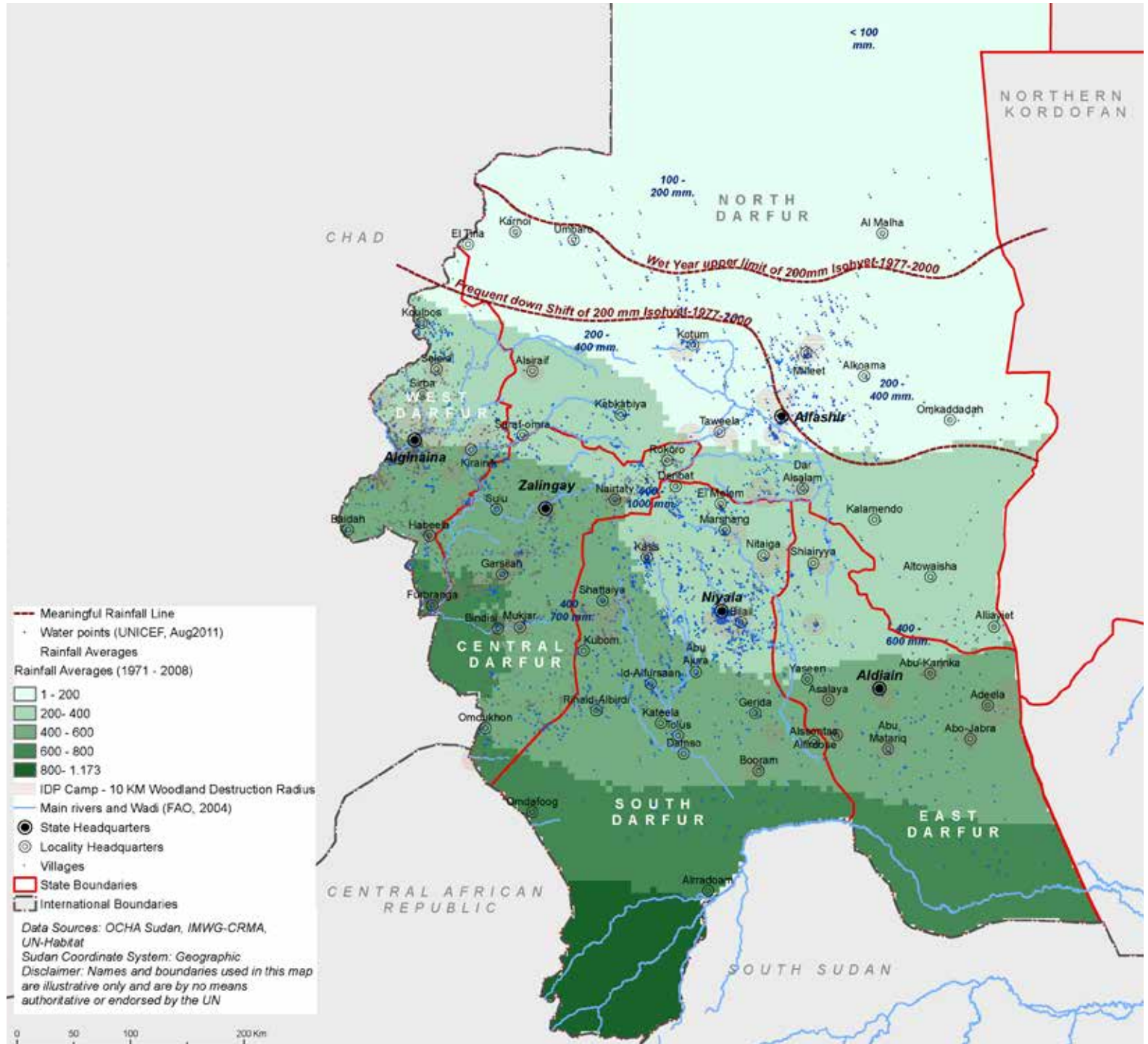


TABLE E01: MAIN LAND USE IN DAFUR AND NORTHERN SUDAN - 1998^a

Region	Area ('000 feddan*)					Total
	Cultivated	Grazing	Forestry	Populated ^b	Unclassified	
Darfur	9,639	4,570	24,252	643	4,498	43,602
Northern Sudan	49,909	30,226	48,504	4,189	16,398	149,226
Darfur / N. Sudan (%)	19.3	15.1	50.0	15.3	27.4	29.2

Source: National Forest Inventory, 1998.

* One feddan = 4,200m²; 1,000 feddan = 42ha. ^a This data includes only areas north of latitude 10°N, except insecure areas. ^b Urban and peri-urban areas.

With the conflict, massive deforestation occurred as IDPs went looking for firewood, charcoal-making and building materials, and the phenomenon was further compounded as urbanisation gathered pace, adding to the damage caused by nomads' needs for camel grazing. In West Darfur, substantial tree felling by nomadic groups and armed forces is common, as reported by the Forest Department in Alginaina (2006) around Mukjar town and in forest reserves in Garsilah area. The degree of forest depletion in Jebel Marra area is also very serious.

Scarce water resources

Darfur consists of mainly four climatic zones, namely: (i) the rich savannah in the South, with average rainfall between 400 to 800 mm per year; (ii) the poor savannah in the central part, with average annual rainfall between 200 to 400 mm; (iii) the arid zone stretching from the central to the northern part, with highly fluctuating rainfall between 100 to 300 mm; and (iv) the desert zone in the northern part, characterised by lack of rainfall³⁴.

There are large variations in the availability of water between the wet and dry seasons in Darfur. The rainy season typically starts in April with sporadic showers which gradually intensify towards June. They are followed by the main rains in July and August, with a period of declining intensity come September. The Jebel Marra range plays a pivotal role in weather changes in terms of temperature, clouds and rainfall³⁵.

As far as aquifers are concerned, Darfur features four basic types³⁶:

- i. *Sandstone aquifers* combine significant storage capacities with high borehole yields. However, water is typically to be found at greater depths than in other aquifers. The towns of Geneina and Gereida are both located on sandstone aquifers.
- ii. *Wadi sand aquifers* vary in saturated depth between the wet and dry seasons, but provide significant storage capacities where the wadi area is large and the sand is sufficiently deep. Water can be stored in the wadi sands upstream of camps and can recharge basement complex aquifers if there is a connecting groundwater flow.
- iii. *Volcanic rock aquifers*, of reasonable quality, in high rainfall areas like Jebel Marra.
- iv. *Basement complex aquifers* typically feature low borehole yields and low storage capacities since they are composed of hard rock. Basement complex rocks are a prevalent geological feature in Darfur, therefore this type of aquifer is the most commonly found around IDP camps. Since these aquifers show the highest degree of vulnerability to groundwater depletion, they do not constitute an adequate water source for settlements with populations over 30,000.

Against this background, the most sizeable water source in Darfur is found in the *wadi alluvium*, but the storage capacity may not always meet the needs. Alluvial sources rely on annual recharge, which implies that yields may diminish in the dry season³⁷. The Jebel Marra plateau acts as a watershed divide from which most of the seasonal streams and wadis flow, such as *Wadi Barei* and *Wadi Azoom* in a westward and southwestward direction respectively. In turn, *Wadi Al Ku*, *Wadi Taweela*, *Wadi Kuttum* and *Wadi Al Kaj* flow towards the eastern and south-eastern parts of Darfur. Meanwhile, *Wadi Kas*, *Wadi Bulbul* and other streams in southward and southeastward directions respectively³⁸.

In addition, a 25,000 km² ground lake was discovered in the northern desert. The basins already covered 323,083 km² which is about 62% of the whole region area, and the annual abstraction rate is about 2.4 %.

Urban settlements in Darfur rely on seasonal rains and groundwater resources for water supply, experiencing shortages due to inadequate use and management practices. Wastewater is largely untreated and discharged in water bodies, dry beds and seasonal watercourses, polluting soil and water resources. In the absence of sewerage, effluents often run in open channels, creating public health hazards. The current situation, which sees the majority of IDP camps located around main urban settlements, adds to the pressure on the already limited availability of water resources. More than 75% of the water facilities, especially water-yards,

34 Ibid n. 27

35 Ibid n. 30

36 Darfur: Water supply in a vulnerable environment. November 2007. Tearfund

37 Ibid. n. 29

38 Ibid. n. 27

TABLE E02: MAIN AQUIFERS IN DARFUR

Basin	Area (km ²)	Total storage (km ³)	Recharge (Mm ³ /year)	Abstraction (Mm ³ /year)	Present /future uses
Baggara Basin	60,000	300,000	250	7	Domestic and livestock supply
Sahara Basin	150,000	4,000,000	50	0	Suitable for windmills/nomadic settlements
Um Kadada asin	5,500	30,000	21	2	Domestic and livestock uses
Sag El Naam Basin	2,250	100,000	20	0.5	27 BHs are present/irrigation/domestic uses
Shagra	1,250	20,000	15	5	Al Fashir Supply
Dasia	1,750	20,000	10	0.4	Town water supply
Alluvium basin	2,000	5000	2,000	20	Domestic, livestock, irrigation uses
Basement	65,333	1,5	3	22	village water supply by HPs
Total	288,083	5,975,000	2369	56.9	-

Source: North Darfur Underground Water and Wadis Administration.

hafirs (underground rainwater storage) and dams, were constructed as early as the 1970s (during the 1969-1976 anti-thirst campaign), and are now past their useful lifespan; they are in need of wholesale replacement and/or major rehabilitation works³⁹.

Addressing increased water demand, especially in urban areas, and developing affordable water management policies, are two further environmental challenges to be met if development of the Darfur region is to happen in any sustainable way. Moreover, drought preparedness is an urgent priority, given the unprecedented concentration of people relying on poor aquifers and erratic rainfall⁴⁰. It is important to understand that the spatial relationship between rainfall versus groundwater potential determines the "livelihoods geography" of Darfur⁴¹ and, therefore, the carrying capacity of urban growth in the region.

Competition over natural resources

Rainfed agriculture based on smallholders' traditional methods has dominated the agrarian economy of Darfur. Agricultural products such as millet, sorghum, groundnuts and sesame represent the staple and most widely cultivated crops. As for the pastoralists, trade in livestock is

a key component of Darfur's livelihoods, whether as a productive asset for meat and milk, or as a form of capital⁴². Traditionally, livestock production in Darfur was based on communal grazing and free use of crop residues. The link between animal manure and crop production is complementary, since animal manure improves land fertility while, conversely, cattle can feed off crop residues⁴³.

However, the tension between groups with competing livelihood strategies has led to extensive firing of fields by farmers to keep nomads away, or even by camel herders to keep cattle herders away. This has destroyed the seedbed and diminished the quality of the rangeland. Environmental resources such as crops and water points are being destroyed as a feature of the conflict⁴⁴.

Darfur is crossed by a number of livestock routes, which are designated areas for nomads to pass through as they move from south to north during the rainy season, and the other way round during the dry season. A wide range of traditional rules and regulations have governed the management of these routes, including access to water at wadis, the timing of shepherding rules and dispute resolution mechanisms.

The current deterioration in both rainfall and land fertility, together with the massive displacement of populations looking for better livelihood opportunities, have exacerbated the conflicts among rural communities over natural resources. In fact, the competition between farmers and nomads for the control of these resources has profoundly changed the traditional livestock/agricultural production pattern described above. Feeling under pressure to expand cultivated areas and maintain overall productivity, more and more farmers take to planting in the wadis. Meanwhile, insecure access to traditional grazing pastures has pushed pastoralists to sell off livestock and to become sedentary⁴⁵. As a result land degradation has much worsened in Darfur over the last few decades.

In addition, the conflict has blocked migration routes, leading to overgrazing in areas where livestock are concentrated. These areas should have been grazed only intermittently, but with more sedentary livestock grass regeneration cannot happen, causing further depletion of rangelands.

39 Water as source of peace-building, 2011. Hamid Omer (in Arabic)

40 Ibid. n. 29

41 Ibid n. 30

42 On the hoof: Livestock trade in Darfur. September 2012. UNEP

43 Ibid. n. 27

44 Darfur: Relief in a vulnerable environment. Tearfund, 2007.

45 Ibid n.25

DEMOGRAPHY AND URBANISATION

Darfur ranks first for population among the six regions that make up Sudan (Northern Region, Khartoum, Eastern Region, Central Region, Kordofan and Darfur). According to the 2008 *Sudan Fifth Population Census*, the five States of the Darfur Region together concentrate 24.3% of the total population of the country, or 7.57 million people. Based on census data, the distribution across the five States created in 2012 is as follows: North Darfur: 2,113,626; West: 764,193; Central: 604,148 people; South: 2,876,875; and East: 1,216,719 people.

The Darfur population: main features

The population of Darfur is composed of over 75 tribes, 25 of which are classified as Arabs and the rest as non-Arab. Some of the tribes that consider themselves Arab include *Rizeyyqat, Beni Halba, Ta'aisha, Habbaniya, Ziyaddiya, Misseriya, Jawama'a, Meidob Habania, Beni Hussein, Ateefat, Beni Jarrar, Batahin, Ma'aliyah*, among others. Non-Arab tribes include the *Fur, Masalit, Zaghawa, Bideyat, Tama, Mima, Bert, Bargo, Birgid, Dajo, Tunjur, Kuraan, Erenga, Barno, Mararit, Fellata, Hadahid, Gimir*, among others.

The predominantly nomadic tribes (pastoralists) are found in the larger part of Northern Darfur, while the predominantly sedentary groups, mainly composed of farmers, occupy the western and southern regions of Darfur. Nomadic communities are known as *baggara* (cattle keepers) mainly in the South, and as *abbala* (camel owners) mainly in the northern part of Darfur. Historical records suggest that the various ethnic groups in Darfur have generally lived peacefully together and that intermarriage was common. Nomadic tribes were less concerned with power struggles over regional leadership in the past, but this has changed with increased education, the movements of some groups and a more settled lifestyle. The political consciousness of the nomadic groups started to emerge in 1974 in southern Darfur where they formed a sizable part of the population and became interested in occupying leadership positions.⁴⁶

In 2008, Darfur contributed as many as 58.2% of the country's total nomadic population. Only 16% were found to be literate, with a ratio of 1:2 between males and females. The maternal mortality rate ranged between 633 and 727 per 100,000, the infant mortality rate was 64 per 1,000 while the child mortality rate was 57.3 per 1,000. A comprehensive overview of

Darfur's main demographic patterns is presented in the following table.

An analysis of the distribution of the population by age groups for each locality (based on 2008 Census data⁴⁷) shows the population geography of Darfur, highlighting the general character and existing disparities across localities. Four different groups emerge:

Group 1:

This group brings together those localities with the highest numbers of children aged "15 years and under" and the lowest numbers of people "over 16" (i.e., the working-age population and the elderly) compared with the State average. Presumably these localities lie in the desert or in economically depressed areas, where a scarcity of income-earning opportunities has encouraged the working-age population to emigrate to urban or to more profitable rural areas.

Group 2:

In the second group we find the localities where the distribution by age groups approximates the State average. These localities can be expected to feature good agricultural potential.

TABLE 1D: THE DARFUR POPULATION

Indicator	North Darfur	West Darfur	Central Darfur	South Darfur	East Darfur	Total Darfur	Sudan
Population	2,113,626	764,193	604,148	2,876,875	1,216,719	7,575,561	30,894,000
% of the Total Population of Sudan	6.8	2.5	2.0	9.3	3.9	24.5	100
Sex Ratio (%)*	102.5	93	93	107.9	107.9	105	105
Population Annual Growth Rate	3.4	2.4	2.4	4.0	4.0	3.5	2.8
Crude Birth Rate**	32	36	36	26.5	26.5	31.5	26.3
Crude Death Rate***	15.7	17.2	17.2	16.3	16.3	16.4	17.5
Dependency Ratio (%)****	96.2	106	106	100.4	100.4	106	86
% Population under 15 years	48	48	48	47.4	47.4	48.78	42.6
Total Fertility Rate*****	4.5	4.8	4.8	3.7	3.7	4.2	3.9

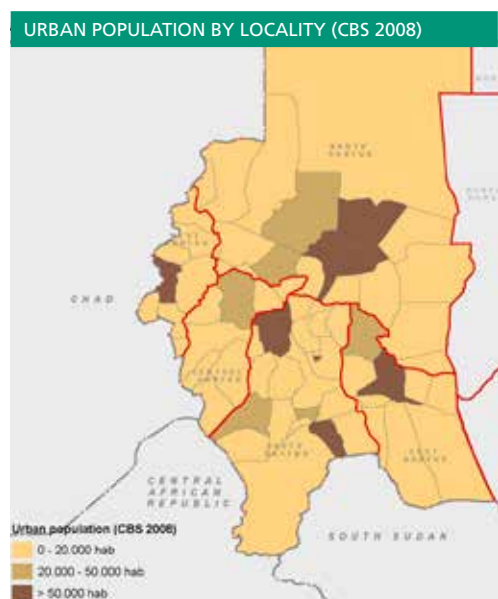
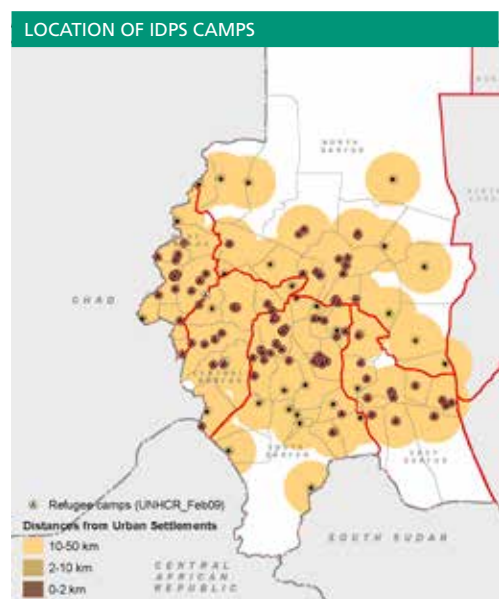
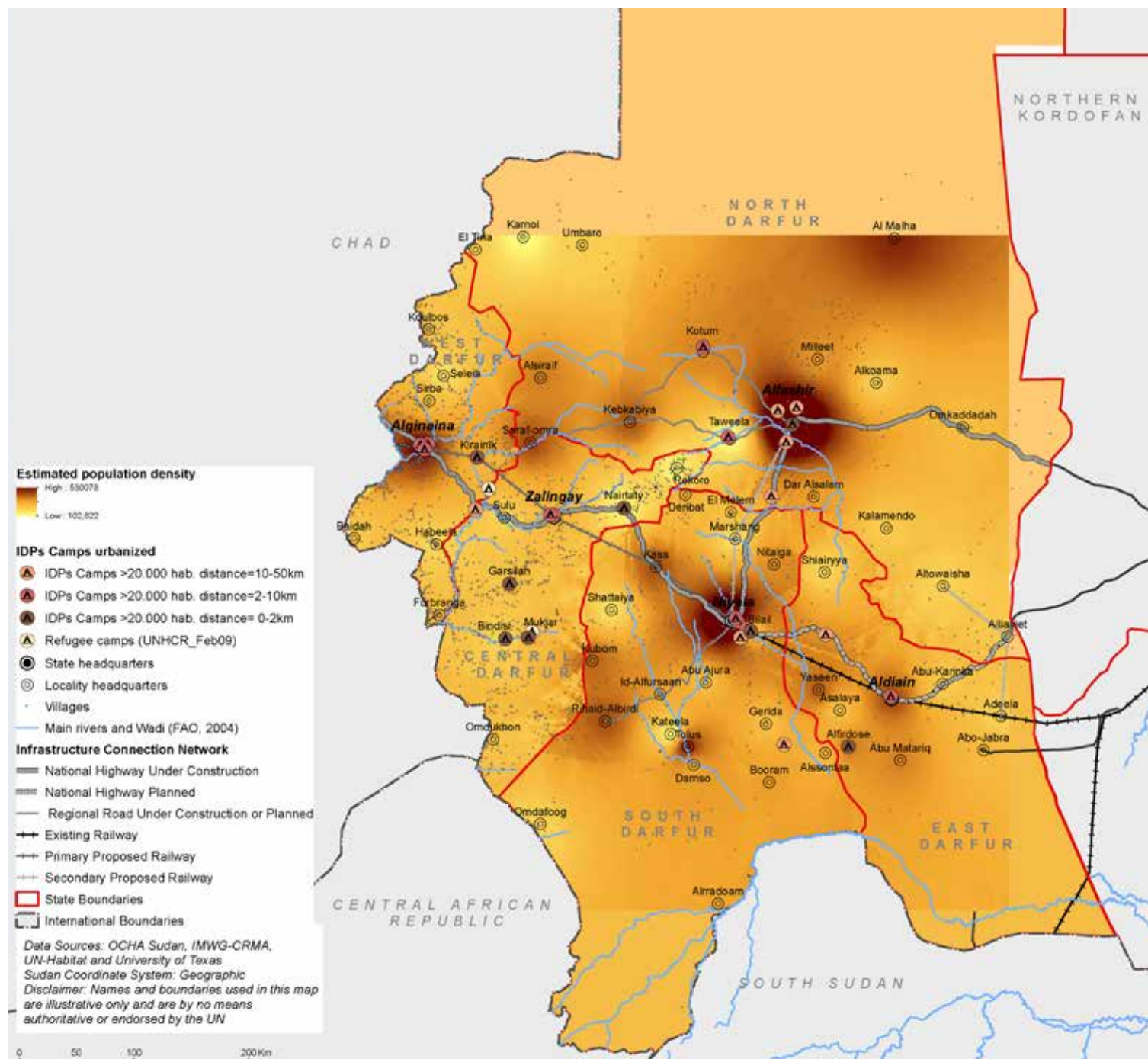
Source: Sudan Central Bureau of Statistics (CBS), 2008. * Number of males for every 100 females, i.e., the male/female ratio. ** Number of live births of both sexes within a year for every thousand (1,000) persons. *** Number of deaths within a year for every 1,000 persons. **** This is the ratio of those under 15 and those aged 60 and over, to those aged 15 to 60 (i.e., the working population). This means that in a "young" population, the dependency ratio will increase, causing an increase burdens and a significant increase on expenditure on social services such as education, health, etc. ***** Total number of children an average woman is likely to bear throughout her life.

46 Darfur Joint Assessment Mission (DJAM) Track 1: Peace and Security – Draft Interim Cluster Report (Dec 2006)

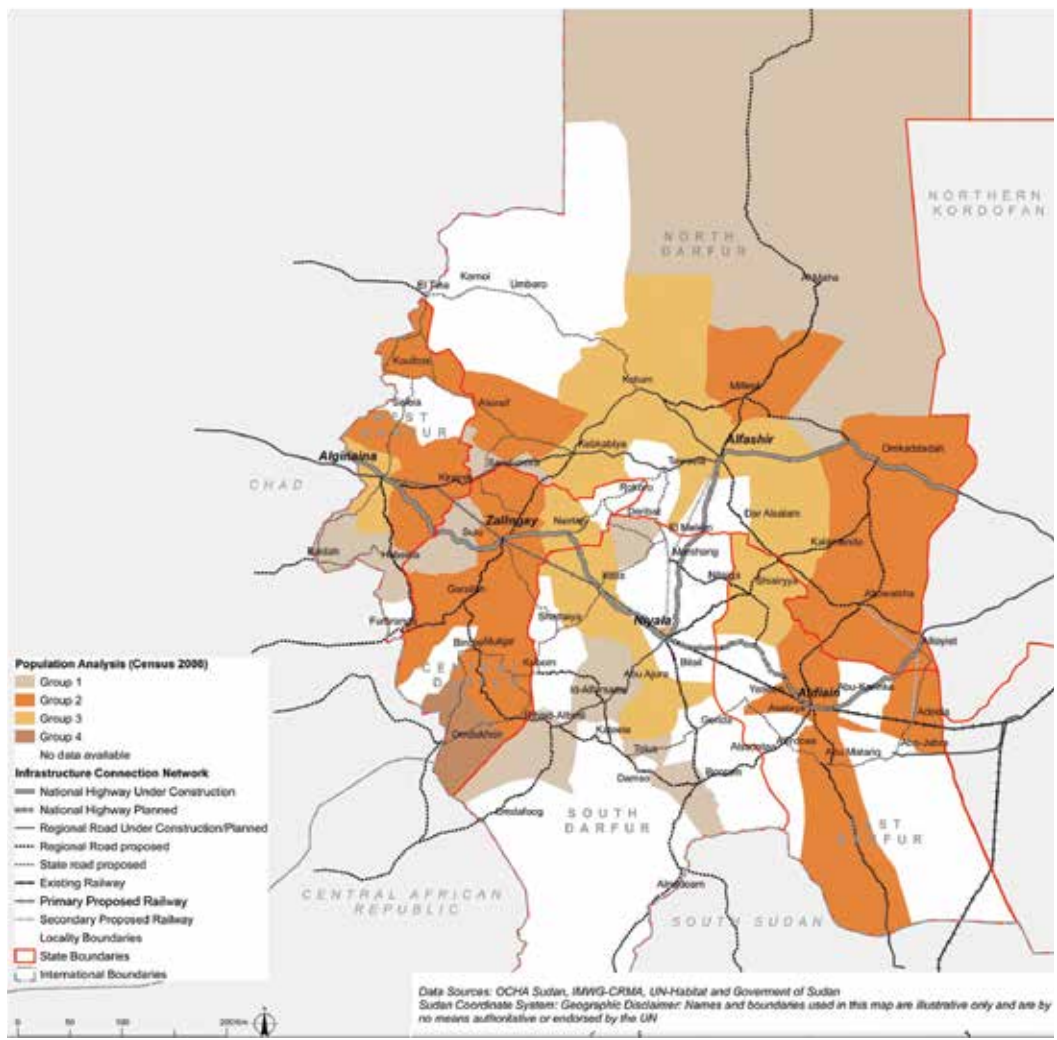
47 NB: (i) Source Census General 2008; (ii) Administrative Division in States and in Localities 2008; (iii) Two age-groups: "15 and under" and "16 and over"

MAP SCO03: DEMOGRAPHY AND URBANISATION

REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



MAP02: POPULATION GEOGRAPHY OF DARFUR



Source: UN-Habitat, 2013

Group 3:

These are the localities with the lowest numbers of children adolescents “15 and under” and the largest presence of people aged “16 and over” (i.e., the working-age population and elderly people). These localities are comprised both of the most important urban areas of Darfur (Al Fashir (Kotum); Niyala (El Salam,

Alqunayna) and of the fertile slopes and valleys around the Jebel Marra.

Group 4:

This last group is made up of a single locality, Omdukhon, which features the lowest number of people aged “16 and over” in the whole of Darfur. This peculiar demographic condition calls for a category of its own.

Group 5:

This group brings together all the localities for which the Census does not provide any data.

The Sudan Central Bureau of Statistics (CBS) has estimated the prospective population of Darfur up to the year 2037, when it is projected to double in size to reach 15.1 million. However, the results obtained remain debateable since it is difficult to derive projected figures, given persistently fragile security conditions and the large numbers of displaced persons.

In 2012 the population of Darfur was estimated at 8,266,096, of which 51% male and 49% female. Approximately 45% of the total were aged up to 14 years, reflecting a high dependency ratio (around 100), and 22% were of school age⁴⁸.

Displacement and migration boost urbanisation

Until the early 1980s, the distribution of Darfur’s population would largely mirror the spatial pattern of rainfall, with higher densities in wetter areas as well as along main seasonal streams (wadis) or water pools in and around Jebel Marra plateau. For the subsequent 30 year or so, Darfur has been affected by natural hazards and conflict. The famine due to the 1985 drought triggered mass migration to Omdurman and other cities in the States of Kordofan and White Nile. This event was followed by tribal wars until 1990. The major conflict which erupted in 2003 displaced about two million people to major cities in Darfur and other State, and was compounded by immigration from neighbouring countries like Lybia and

TABLE 2D: DARFUR’S POPULATION DISTRIBUTION (%) PER MAIN GEOGRAPHICAL AREA

	NORTHERN DARFUR	WESTERN DARFUR	SOUTHERN DARFUR
Nomads	19.2	18.4	24.2
Urban population	64	64.5	54.5
Rural population	16.8	17	21.3

Source: Central Bureau of Statistics (CBS), 2008 Sudan 5th Population Census.

⁴⁸ The Projected Population of States, 2008 Sudan 5th Population Census. Central Bureau of Statistics

Chad. This situation led to a dramatic shift in population patterns, from rural to urban settlements, which came hand in hand with social upheaval and transformation, as well as environmental degradation⁴⁹ (see Table 2).

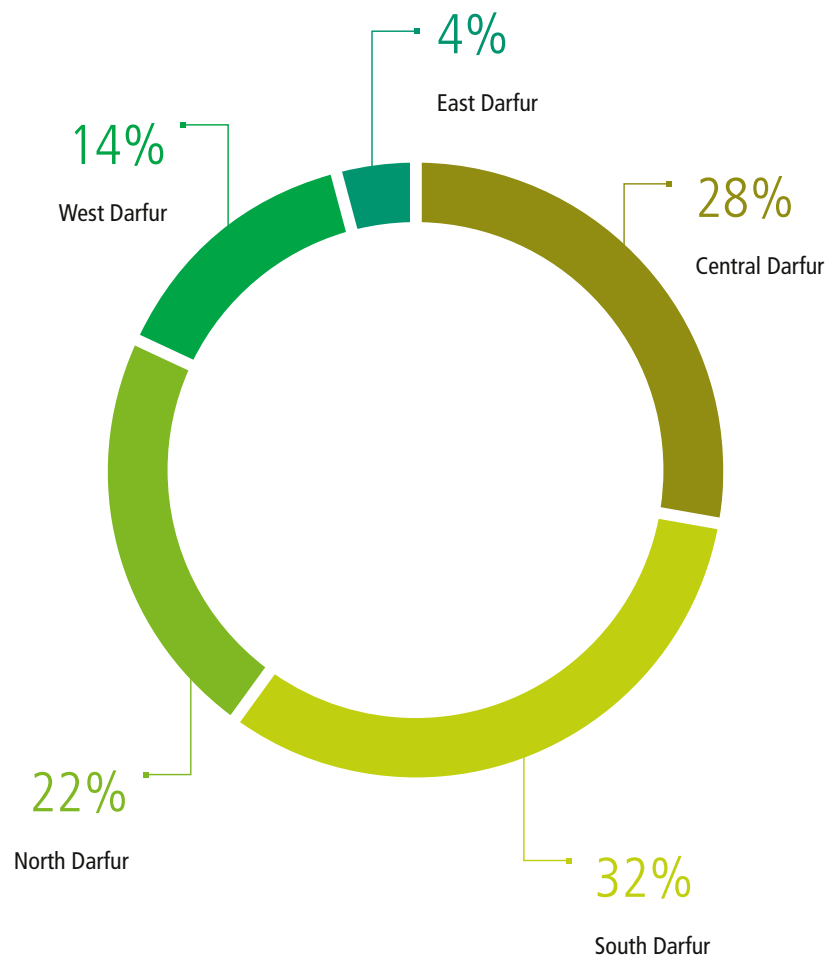
Table 2D shows that intense conflict and the related displacement have led to a rapid urbanisation process in Darfur, with well over half the population now living in cities, towns, peri-urban areas, IDP camps or settlements hosting over 20,000⁵⁰. Urban areas are perceived as safer, with access to some basic services as well as livelihood opportunities. This fresh population pattern has major implications, which must be taken into account in this regional spatial strategy.

It is estimated that the urban population of Darfur has increased from 20% of the total in 2002 to more than 50% nowadays, or over one million people in absolute terms. Niyala, for instance, from a small town in the 1970s, has reached today an estimated population of 1.3 million people. The latter goes up to 1.6 million people if surrounding IDP camps are included, corresponding to approximately a fifth of the total population of Darfur. IDPs make up over 80% of the Kebkabiya population, or nearly 60,000. After over a decade from the start of the conflict, IDP camps look more like medium- or small-size towns than sites of temporary occupation.

Internally displaced persons

According to WFP, which coordinated the verification work with IOM, the total number of internally displaced persons (IDPs) living in camps in Darfur in 2011/2012 was 1,184,817, in addition to 124,906 in larger urban settlements and another 161,413 in smaller, remote camps⁵¹. Altogether, the total population of IDPs in Darfur during the verification exercise amounted to 1,471,136. Based on these numbers, South, Central and

FIGURE 5: DISTRIBUTION OF IDPS BY DARFUR STATE



North Darfur States accommodate around 82% of total IDPs living in camps, while West Darfur State hosts 14% and East Darfur State 4% of the total (see Fig. 1). Darfur is host to no fewer than 99 IDP camps, which are distributed as follows: 17 in North Darfur, 21 in West Darfur, 13 in Central Darfur, 34 in South Darfur and 14 in East Darfur.

The sex ratio of IDPs living in Darfur camps for the age group 18-59 was one male for two females. This is because more men have been engaged in fighting and probably been killed in attacks than women. In addition, a significant number of Darfur men migrated to areas in central Sudan to flee attacks and try to find jobs. Meanwhile, up to 60% of the IDPs population is under 18 years old. This challenging fact calls for provision of services and jobs to an ever-younger Darfur population.

Those IDPs located in cities and towns, such as Kass, Niyala, Alginaina and Al Fashir, are

typically staying in informal settlements or with relatives. They face problems of congestion, access to basic services such as water, sanitation and waste management, and settlement sprawl leads to further urban environmental degradation. In Niyala and Alginaina, informal IDP settlements are generally located in peri-urban areas, while in Kass they are inside the town, occupying public and open spaces. They are not integrated in urban settings, despite sharing the same scarce urban services⁵². About 67% of IDPs are found in or around the capitals of the five states of Darfur.

Return trends in Darfur have been varying over time, across locations, and in terms of form. They are strongly related with aspects such as land tenure, tribal issues, potential for early economic recovery and livelihood opportunities. To date, returnees have primarily been migrating according to seasonal trends, with women

49 Sudan: Post-Conflict Environmental Assessment, 2007. UNEP

50 NB: The population criteria used to define an urban settlement (over 20,000 inhabitants) are found in Sudan's official Physical Planning Guide. This is at odds with the CBS Population Census as well as with the provisions made in the Land Disposition Act 1994, which authorises individual States to upgrade rural settlements to towns.

51 WFP, IOM, IDP Verification Results, 2013.

52 Background for Future Early Recovery, 2007. UN

TABLE 3D: RANKING OF THE 15 MAJOR URBAN CENTRES IN SUDAN BY POPULATION SIZE

Town	Population			
	1973 Census	1983 Census	1993 Census	2008 Census
Khartoum	784,294 (1)	1,340,646 (1)	2,919,773 (1)	4,272,728 (1)
Niyala	59,583 (9)	111,693 (7)	227,183 (4)	492,984 (2)
Port Sudan	132,632 (2)	206,038 (2)	308,195 (2)	394,561 (3)
El Obeid	90,073	137,582	229,425	345,126 (4)
Kassala	99,652	141,429	234,622	298,529 (5)
Wad Medani	106,715	145,015	211,362	289,492 (6)
Gedarif	66,465	116,876	191,164	269,395 (7)
Al Fashir	51,932 (10)	84,298 (8)	141,884 (9)	217,827 (8)
Kosti	65,404	89,135	173,599	213,080 (9)
Aldiain	18,437 (13)	21,666 (15)	73,335 (12)	197,103 (10)
Ed Damazine	12,233	27,591	71,821	136,787 (11)
Alginaina	35,424 (11)	55,480 (11)	92,831 (10)	134,264 (12)
Rabak	18,399	26,693	59,261	123,890 (13)
Sennar	28,546	42,803	72,187	123,158 (14)
Atbara	66,116	72,836	87,878	112,021 (15)

and children remaining in IDP camps, with other household members returning to their areas of origin for several months to cultivate crops or seek temporary employment. In some cases, this seasonal migration reflects alternative livelihood strategies, rather than intentions to return permanently.

Although during 2012 security has improved in some areas, particularly in West and Central Darfur, and over 100,000 people have returned to their areas of origin, the conflict situation has worsened in 2013 especially in South and East Darfur, causing more displacement. Massive return will not occur so long as access to basic and social services, livelihoods

opportunities, land tenure and security has not improved. In addition, large portions of the IDP population have found decent living conditions in neighbouring urban areas and are not expected to return.

Main trends in urbanisation

Predominance of a single, fast-growing major city in Sudan, Khartoum, causes spatial imbalances and a distorted hierarchy of cities and towns nationwide. The second largest city (which now is Niyala, followed by Port Sudan) lags far behind in terms of services and economic potential. A similar situation prevails on a lower scale in North Darfur, where a relatively isolated Al Fashir concentrates most of the urban functions at the State level.

In terms of functional importance, significant gaps can also be found between Al Fashir and Niyala on the one hand, and the capitals of the new States, Aldiain and Zalingay, on the other hand.

The four major towns in Darfur are Niyala, Al Fashir, Alginaina and Aldiain. Since the 1970s, they are ranked among the 15 most populated urban settlements in Sudan. According to *Table 3D*, these towns, except Alginaina, have been ranked ever higher over the past 40 years. This goes to show that the pace of urbanisation in Darfur is relatively faster compared with other regions in Sudan.

GOVERNANCE AND INSTITUTIONS

Since independence, Sudan has featured a fairly centralised governance system. This has opened up an ever-wider development gap between Khartoum, the capital city, and other regions of the country, regardless of a move in favour of decentralisation in the early 1970s. In 1994 a Presidential Decree sub-divided the country into 26 States (10 of which were located in the South, now an independent country).

Subsequent decrees (XI and XII, in 1994 and 1995 respectively) set out a number of institutional features, including State legislatures, location, membership and functions of both federal and the State government. The rationale behind this broad reform was to promote development at State and local levels through transfer of powers and functions.

Since the Darfur Regional Authority (DRA) is a temporary or transitional structure with specific tasks and functions related to implementation of the DDPD, it shall not undertake actions that run contrary to, or affect, the powers of individual Darfur States or of the federal government, as set out in Sudan's 2005 Constitution. Meanwhile, as indicated in the Institutional and Policy Framework chapter in this report, the DRA, under Presidential Decree N° 46, is mandated to oversee all matters related to post-conflict reconstruction and the development process in Darfur, dealing with nomadic routes as well as creating a favourable environment for

voluntary return and resettlement of refugees and displaced people. This set-up tends to result in lack of both strong coordination mechanisms and a clear allocation of responsibilities among the various institutions, which is liable to affect implementation of the peace document across the five States, with attendant risks for the sustainability of any intervention.

A fragmented local administration

The 2005 Constitution affirms Sudan as a decentralised State with three tiers of governance: (i) the National Government, with a mandate to protect the territorial integrity and the national sovereignty of Sudan and promote the welfare of its people; (ii) State government, which exercises authority at State level and provides public services through a decentralised level closer to the people; and (iii) local government, which is composed of Localities, Administrative Units (optional) and People's Committees (please refer to Figure 2 in the Institutional and Policy Framework chapter in this report). Regarding the latter, the Constitution allows States to enact their own Constitution and legislation (as shown in Table 1), which puts local government under the control of individual States. In addition, under the Local Government Act 1995, where a its population reaches 35,000, a locality can be established by right, even when objective reasons to do so are less than compelling.

This situation has encouraged the States in Darfur to institute formal localities which combine inadequate standards, with a

tendency to replicate ethnic patterns. As shown in Table 1, the number of localities in Darfur has increased from 10 in 1994 to 39 in 2007 and 64 in 2010. Consequently, these new local administrations are now facing a number of challenges, such as lack of adequate human resources, inadequate revenue and financial shortfalls at the expense of quality services and development. Furthermore, this situation has fuelled inter-ethnic and inter-tribal conflicts in Darfur, adding to the competition over scarce resources⁵³.

The recent occurrences in South and East Darfur States are a good example of that. In these two States, every tribe has its own locality within its own tribal dar (land) namely, from East to South Darfur: Adila locality occupied by the Maalia tribe; Aldiain (Reziegat tribe); Buram (Habbania); Tulus (Felaala tribe); Idel Fursan (Beni Helba); and Reheid El Berdi (Taasha).

A locality can be further subdivided into Administrative Units (in urban neighbourhoods) and People's Committees (in villages), which operate at the lowest hierarchical echelons of the current set-up in Sudan. People's Committee members are elected by residents, and their duties involve provision of basic services (health, education and water).

The need for more harmonised legal and policy frameworks

To allow for a coherent urban and spatial development of Darfur, it is crucial to harmonise legal frameworks and policies at national, State and locality level. Currently,

TABLE G01: EVOLUTION OF THE DARFUR ADMINISTRATIVE STRUCTURE SINCE 1956

Year	Administrative Structure	Remarks
1956	1 Darfur Province subdivided in 6 Administrative Areas	After independence. Sudan was split into 9 Provinces
1977	1 Province split in 2 Regions (North and South), including a total of 10 Districts	
1980	2 Regions (North and South), including a total of 10 Administrative Areas	As per the Regional Government Act 1980
1994	3 States (North, South and West), including a total of 10 localities	Shift to a federal governance system (Presidential Decree N° 10)
2007	3 States (North, South and West), including a total of 39 localities	The 2005 Constitution authorises States to set out their own Constitution and laws regarding public services, local governance and native administration, among others. Consequently, the number of localities in Darfur has increased by 640% since 1994.
2010	3 States (North, South and West), including a total of 64 localities	
2012	5 States (North, South, West, Central and East), including a total of 64 localities	

53 Takana, 2006, Conflict Analysis

policies designed at the *national level* touch on privatisation, decentralisation, urbanisation, housing, main infrastructure development, etc. Meanwhile, at the *State level* government is in charge of urban planning and development strategies, land use and management, public works and social services (although with scarce funding). The specific role of DRA, as a transitional body, is to support and coordinate implementation of the peace document (DDPD) in collaboration with partners, donors, national government and banks. At the *locality level*, urban development-related policies are confined to building inspection and some basic services.

Regarding the implementation of the Regional Spatial Strategy detailed in this Report, it is important to note that the 2005 Constitution provides for two or more States to agree on mechanisms or arrangements for mutual coordination and cooperation. This opens up an enabling legal framework for cross-State action.

Cross-sector coordination issues

Although the ongoing urbanisation process in Darfur and Sudan as a whole involves by nature a variety of institutional and policy dimensions, cross-sector coordination among the various relevant government organs remains inadequate. The body established for this very purpose, the National Council for Physical Development, needs urgent strengthening.

Experience shows that in Darfur, State Ministries of Physical Planning and Public Utilities (MPPUs) are finding it a challenge to harmonize and coordinate actions, both horizontally across departments, and vertically through branches/teams in localities. Against this background, it would be of the utmost strategic importance to put in place stronger partnerships between SMPPU branches (in localities and administrative units) in order to deliver a number of specific tasks that have been historically neglected, such as urbanisation control and coordination of service delivery. The assumption that a more pro-active approach can pave the way to improved relationships between

central MPPUs HQ and local branches and localities is also explored.

Poor access to judiciary and security services

The judiciary system in Darfur is composed of three High Courts of Appeal (Al Fashir, Niyala and Alginaina), seven Public Courts, 15 District Courts and over 130 People's Courts which can be found in most localities. However, only 50 to 60% of these courts are actually functional due to security concerns.⁵⁴

Poor access to security services and judiciary institutions is a major challenge for the tension-riven people of Darfur. There is a severe lack of trust in existing legal and law-enforcement institutions. This is compounded by ineffective reconciliation mechanisms, which can only intensify disputes. Most of the latter arise from problems which could be solved locally, if only security and judiciary institutions could be reformed and revitalised, as spelled out in the Doha Document.

A weaker native administration

The native administration gained legitimacy with the *Sheikhs Act 1922*, which was followed by subsequent laws and regulations. The system greatly contributed to building the social fabric at community level in Darfur, achieving security and stability and bringing about peaceful tribal relations throughout successive regimes. During colonial times this traditional system was reinforced with judiciary powers to handle criminal and civil cases in accordance with the tribal tradition of precedence and "*urf*". For example, in 1943 there were 25,452 criminal cases and 4,049 civil cases sentenced by the government system, while the same year 49,327 criminal cases and 14,084 civil cases were sentenced through the native administration system in Sudan.

When martial law was imposed in 1953, traditional powers were acknowledged along with formal government power. However, the native administration system was abolished in 1971, leaving a vacuum

at the community level which could not be filled by the government-imposed new system. In an attempt to remedy the situation, the native administration system was reinstated in 1987, especially for the sake of rural areas. Unfortunately, it had already lost its strength and became less effective, lacking in empowerment and capacity.

Today, the best practice of the native administration could be mainstreamed as part of efforts to promote reconciliation and settle intra- and inter-community disputes in Darfur. The long history of locally administered justice in the region shows that the role of tribal leaders in maintaining social cohesion and security has been accepted by the communities. However, these local mechanisms have become politicised and ineffective, and protracted conflict has completely disrupted them. Moreover, the emergence of IDP leaders has come to challenge traditional authorities in Darfur.

A huge institutional capacity gap

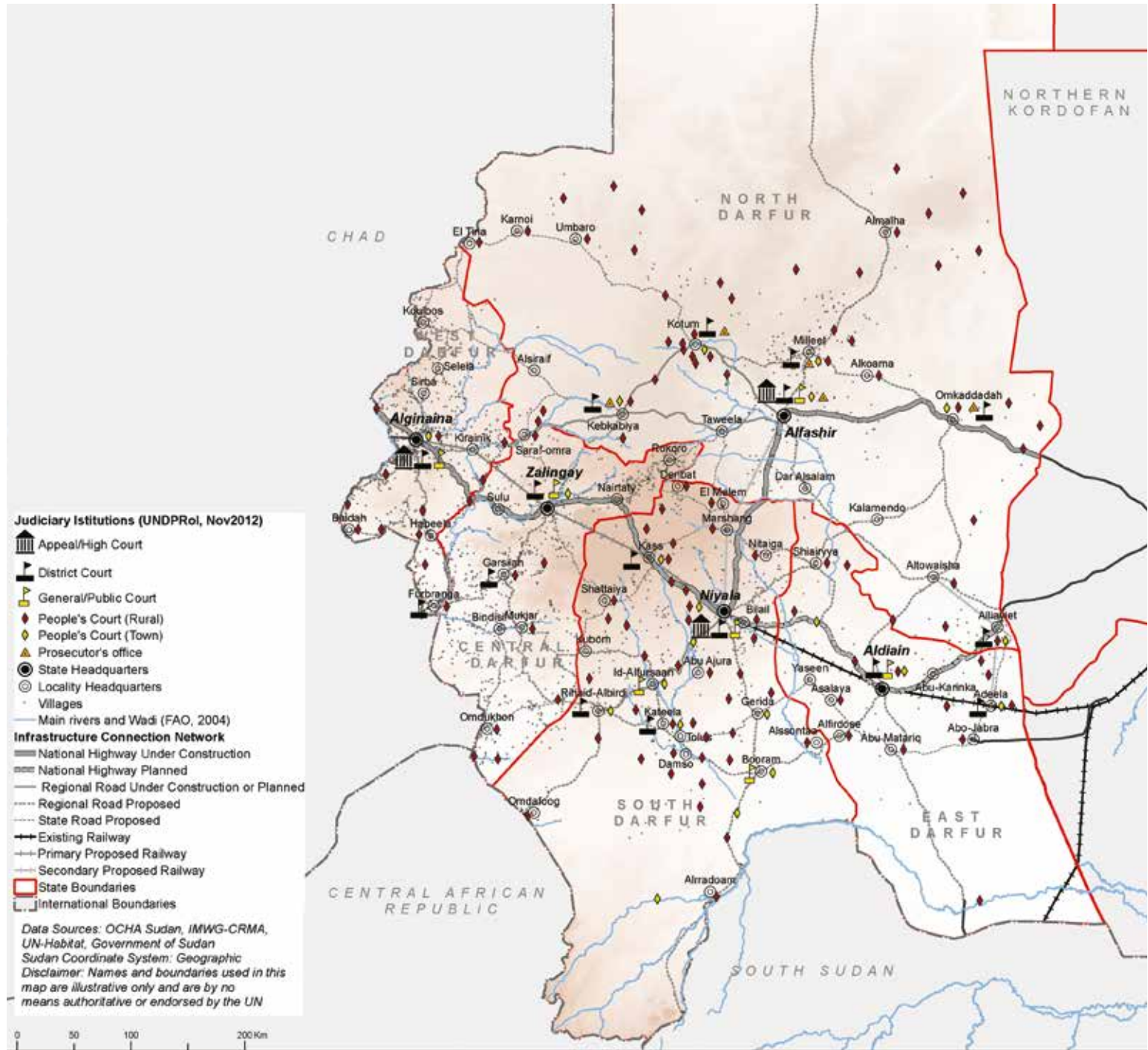
Good governance is about equal participation by all citizens – male and female, young and old – in public and political life. In Darfur, government, traditional authority and customary law mechanisms are generally dominated by men. Despite recent political reforms, women continue to be under-represented at almost all tiers of decision-making. This, in turn, deepens their social and political marginalisation. The exclusion of women, youth and the displaced from positions of leadership is particularly acute in rural areas.

In addition, the current top-down approach inherited from the colonial era implies loose involvement of communities during the planning and decision-making process. This situation leads the States to work in isolation, with administrative back-up from localities but certainly not counting with popular support. As a result, pro-active action is discouraged just when it should play an essential role if planning (both decision-making and implementation) and more generally social peace are to be effective.

⁵⁴ West Darfur State Situation Analysis, December 2011. UNDP

MAP SCO04: GOVERNANCE AND INSTITUTIONS

REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



GOVERNMENT INSTITUTIONS : REGIONS AND STATES



GOVERNMENT INSTITUTIONS : LOCAL AND RURAL COUNCILS



The overall institutional background of Darfur has changed significantly during the conflict. In rural areas, the operations of most government institutions, including line ministries, nearly all but stopped, as did tax collection (such as *zakat*). Lack of resources and personnel do not enable public institutions to perform their mandated functions. There is a critical absence of data, assessments and records especially with regard to urban and spatial planning and development functions, precluding any proper appraisal of existing conditions and the formulation of strategic plans. As already mentioned, this situation is compounded by the persistent inadequacy of existing institutional and regulatory frameworks for urban planning and service delivery, including a fragmented approach to urban infrastructure financing, poor cross-sector coordination and lack of participation in decision-making.

In addition to a weak National Council for Physical Development at the federal level, the State Ministries of Physical Planning and Public Utilities (SMPPUs) - just like

the State Physical Planning Committees - are currently incapable to perform their tasks to the full. In fact, the transfer of competencies to the States has not been accompanied by a proportional transfer of resources, while most of the resources provided by the international community are directed to humanitarian activities. The SMPPUs' small-sized departments and their branches/teams operating at the locality level all face severe constraints such as lack of adequate office space, equipment, transport and logistical support.⁵⁵ There are no economic incentives to motivate staff, and no proper monitoring and evaluation mechanisms either.

Over the years localities have confined themselves mainly to their role as tax collectors through the Administrative Units. Communities typically perceive these local administration units more as a burden than as service providers, and they are becoming unpopular. Meanwhile, the People's Committees, which are elected at grassroots level for two-year terms, persist

in many villages but their composition has changed in line with the evolution of the political background. The grain and livestock markets of pre-conflict days are barely functioning nowadays, while new institutions have emerged, such as camp markets, informal taxes and various agreements between opposing groups over access to land and markets. On top of this, many NGOs and CBOs have also stopped operations.

Massive IDP migration to urban areas requires integration of thousands of families, an issue which cannot be solved by the authorities under the present circumstances. Unless these authorities are better prepared and equipped, this situation will inevitably escalate to the formation of slums, in the process replicating what has occurred in Khartoum, for example. In addition, existing urban master plans must be updated to provide rational and cost-effective directions for new residential and commercial areas in the main urban centres.⁵⁶

⁵⁵ Situation analysis for future early recovery. 2007. UNDP

⁵⁶ The master plans were drafted by surveyors, not urban planners, and in many respects look more like land-use plans than rational urban development schemes.

INFRASTRUCTURE AND BASIC SERVICES

Protracted insecurity and conflict has led to the abandonment of many rural settlements and massive displacement towards the fringes of Darfur's main urban centres where access to basic services is easier. Local integration of many IDPs living in peri-urban or urban "camps" or "camp-like settings" is a reality, and experience shows that families will continue to integrate into local communities. It is clear that the provision of basic services to displaced populations represents one of the main challenges facing Darfur's public authorities.

Although demand-led approaches for water, sanitation and hygiene (WASH) services have been multiplying since 2008 – as opposed to the supply-driven policies of previous years⁵⁷ – any reduction in the current dependency on humanitarian assistance in this critical sector still has a long way to go. At the federal level, Sudan has devised a National Strategic Plan (2012-2016) for Water, Sanitation and Hygiene, including various strategies and statutes such as the *Water Resources Act 1995*, the *State Water Corporation Acts 1998* and the *Public Water Corporation Act 2008*. At the Darfur State level, Water,

Sanitation and Hygiene Sector Strategic Plans (2012-2016) were prepared by the Ministry of Irrigation and Water Resources.

In view of persistently volatile security conditions in Darfur, and the attendant scarcity of qualified professionals willing to move to certain areas, it is imperative to involve local communities in the delivery, maintenance and management of basic services. In addition, spatial planning can facilitate identification of priority areas for the provision of such services and infrastructure, with the double aim of reaching minimum coverage standards over the territory and maximising the use of scarce economic means.

Access to safe drinking water and sanitation

Access to safe drinking water is a fundamental human right and an indicator of human progress. Since the beginning of the conflict in Darfur, insecurity has restricted access to water sources in many locations. In fact, rather than water scarcity *per se*, the main problem is lack of access to this precious resource and the absence of water harvesting mechanisms.⁵⁸ There is also an urgent need to facilitate investment in water conservation, quality and monitoring. Major problems in this sector

are often due to the use of inappropriate technology type, location or design⁵⁹.

According to the 2009 National Baseline Household Survey, 26% of households in North Darfur have to walk 60 minutes or more to reach a water source, the worst situation in Sudan in terms of water access. As for sanitation, the same survey shows that 37% of Sudanese households have no access to toilet facilities, of which 12% in urban and 48% in rural areas.

Considering that water sources in Darfur mainly depend on rainfall as well as surface water (especially seasonal rivers or *wadis*) and groundwater, spatial planning has a significant role to play in the identification of the best areas for water availability in both urban and rural areas. In 2010, livestock water consumption in Darfur was an estimated 4,445 m³/day⁶⁰ using both untreated surface water and groundwater. During the dry season, pressure on groundwater sources is extremely high, affecting both human and livestock consumption. The annual growth rate of livestock is 3.5% (Land Commission, 2008), adding to the pressures on already scarce water resources, especially in East and South Darfur States where half of the region's livestock is located.

TABLE I01: ESTIMATED LIVESTOCK NUMBERS AND WATER CONSUMPTION RATES IN DARFUR (2010)

		Bovines	Sheep	Goats	Camels	Equines	Total
Northern Darfur	Numbers	171,697	966,847	782,943	41,732	246,508	2,209,727
	% of the Region	1.75	9.64	8.96	7.88	15.92	7.2
	Consumption (m ³ /day)	4,292	7,735	6,246	1,502	4,930	24,723
Southern Darfur	Numbers	5,495,946	4,707,775	3,940,500	128,863	714,926	14,988,010
	% of the Region	56.2	47.0	45.1	24.3	46.2	49.0
	Consumption (m ³ /day)	132,727	37,662	31,524	4,412	12,981	219,306
Western Darfur	Numbers	4,107,340	4,350,321	4,012,328	358,856	587,381	13,416,226
	% of the Region	42.0	43.4	45.9	67.8	37.9	43.8
	Consumption (m ³ /day)	102,684	34,803	32,099	12,919	11,748	194,253

⁵⁷ Sustainable WASH interventions as populations transition from relief to development - Darfur case study. Rebecca Scott, WEDC, Loughborough University, UK, December 2012.

⁵⁸ West Darfur State Situation Analysis, UNDP, December 2011.

⁵⁹ Sudan Millennium Development Goals Progress Report 2010, Ministry of Welfare & Social Security, National Population Council General Secretariat, Sudan.

⁶⁰ Based on a daily consumption averages for each type of head: bovines (244,350 m³/day); sheep (80,200 m³/day); goat (69,890 m³/day); camel (19,055 m³/day); equines (30,975 m³/day).

Darfur communities typically experience water shortages during the dry season and poor water quality throughout much of the year. According to the December 2012 Sudan Household Health Survey (Round 2), the estimated population with access to safe drinking water sources was 59.8% in North Darfur, 69.4% in South Darfur and 44.5% in West Darfur. According to the 2010 WASH sector evaluation ranking criteria⁶¹, Darfur is considered as having poor consumption rates, with West Darfur the lowest ranked.

Only six out of the 17 localities in North Darfur State have the benefit of a partial Public Water Supply Network (PWSN). In Al Fashir, the PWSN was installed in 1967 using asbestos pipes (now outdated) and serves only 10% of the current population. At the moment, water supply is scheduled once a week for subscribers (approximately 10,000 families) while the remaining population depends on water vendors. This mechanism does not meet current needs and the situation is worse during the dry season, when shortages can go up to 59% (North Darfur State Plan 2012-2016). In South Darfur State, only six local capitals have a partial PWSN in operation: Niyala, Buram, Kass, Gerida, Tulus and Rihaid-Albardi. The PWSN in Niyala dates from 1954 and serves only 40% of the town. In Buram, the network was built in 1999 and serves 80% of the town. In West

Darfur State, only Alginaina, Kreneik and Habila have a partial PWSN in operation.

The protracted displacement of populations in camps has dramatically worsened the situation since they mainly depend on groundwater. The main aquifers available to IDP areas are either weathered/fractured basement complex rocks or of an alluvial nature. They are generally characterised by a limited storage capacity and high surface/subsurface water recharge⁶². Signs of groundwater overuse have been observed in IDP camps, where high extraction rates combine with low aquifer storage and recharge capacities, as at Abu Shouk and El Salam (North Darfur), Kalma, Outach and Deraige (South Darfur), Kulbus, Seleia, Sirba, Abu Sorouge and Kuma (West Darfur)⁶³.

According to the 2006 Sudan Household Health Survey, the estimated proportion of the population with access to adequate sanitation was 32.2% in Northern Darfur, 20.1% in Southern Darfur and 29.8% in Western Darfur⁶⁴, mainly located in urban areas. In 2010, the proportion of the whole Darfur population with access to sanitation was an estimated 34%, rising to 47% in IDP camps alone. The best coverage for that year was registered in Western Darfur.

Thanks to the humanitarian and peace-keeping operations which started in 2004,

State capital cities benefited from improved sanitation facilities, such as a partial sewerage network in UNAMID “super camps” around Al Fashir. In addition, new buildings, especially those in 1st class plot areas, use septic tanks, both in Al Fashir and Niyala, serving 11% of households in 2004. In Alginaina, although the use of septic tanks has increased, the dominant sanitation system remains the pit latrine.

Poor healthcare coverage

Health indicators in Darfur always rank among the poorest in the whole of Sudan. Already underdeveloped in 2003, health services have further deteriorated after a decade of conflict and are heavily dependent on humanitarian assistance. Access to primary services is scarce, equipment is poor and essential goods are lacking⁶⁵. In general, local management of health facilities is inadequate due to high staff turnover, inadequate resources and limited community involvement. According to available data, which are inconsistent across sources (see Table I02), health facility coverage rates fail national standards in all of Darfur’s States, with East and Central Darfur the lowest ranked.

Health facilities in Darfur are managed by the State Ministry of Health (SMoH), communities and humanitarian NGOs. The latter manage most of the facilities in West and Central Darfur States (see Table I03).

TABLE I02: HEALTH FACILITY COVERAGE BY STATE (2012)

State	Number of Hospitals	Population / Hospitals	Number of functioning Primary Health Centres (PHC)	Population / PHC	Number Basic Health Units (BHUs)	Population / BHU
North Darfur	21* / 11	125,392	83* / 74	31,726	37* / 116	71,169
West Darfur	8* / 5	108,351	39* / 40	22,226	39* / 46	22,226
Central Darfur	5* / 5	133,009	29* / 30	22,933	28* / 27	23,752
South Darfur	12* / 9	263,905	52* / 54	60,901	165	19,193
East Darfur	7* / 5	191,338	10	133,937	28* / 81	16,954
Darfur	53* / 36	163,610		40,710		24,918

Source: *State Ministry of Health / Health Resources Availability Mapping System (HeRAMS) - 4th quarter 2012

61 Based on the following ranking: Critical (0.0 – 6.9 l/c/d); Poor (7.0 – 14.9 l/c/d); Fair (15.0 – 19.9 l/c/d); Good (> 20 l/c/d). Feedback from Field Visits to North, West and South Darfur, May 2013, WASH Cluster.

62 Darfur IDPs Ground water resources: capacity, depletion risks and contingency planning. June-December 2007. UNICEF, Public Water Corporation (PWC) & Water and Environmental Sanitation (WES) Sector Partners

63 Ibid n. 52.

64 Summary Table of Findings - Sudan Household Health Survey Indicators, 2006.

65 Darfur health. 2012. World Health Organization (WHO).

MAP SCO05: INFRASTRUCTURE AND BASIC SERVICES

REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR

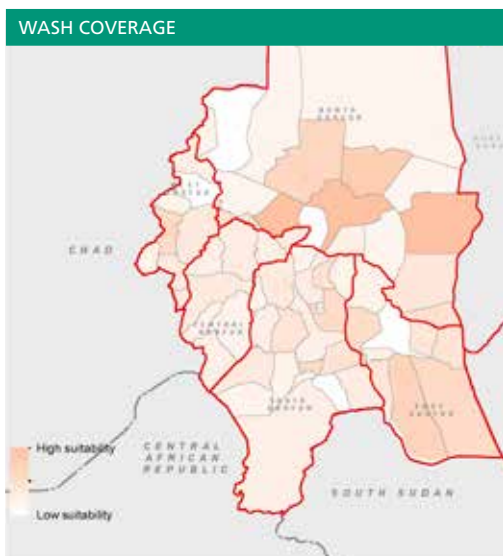
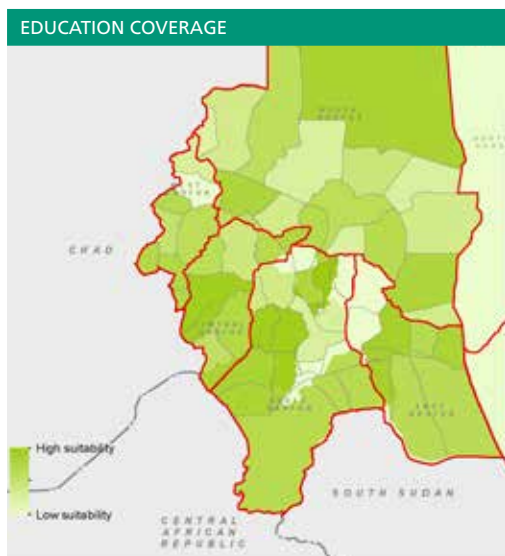
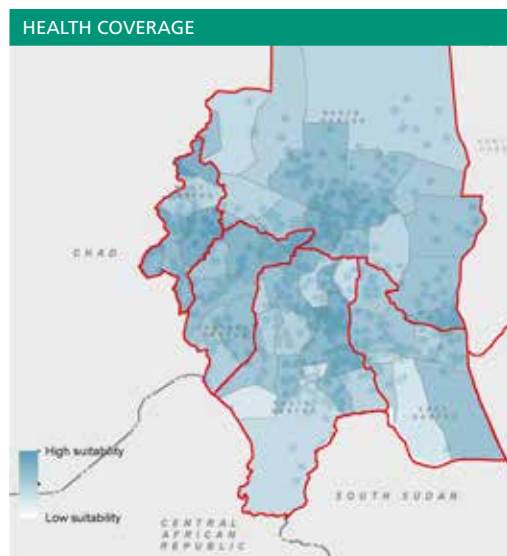
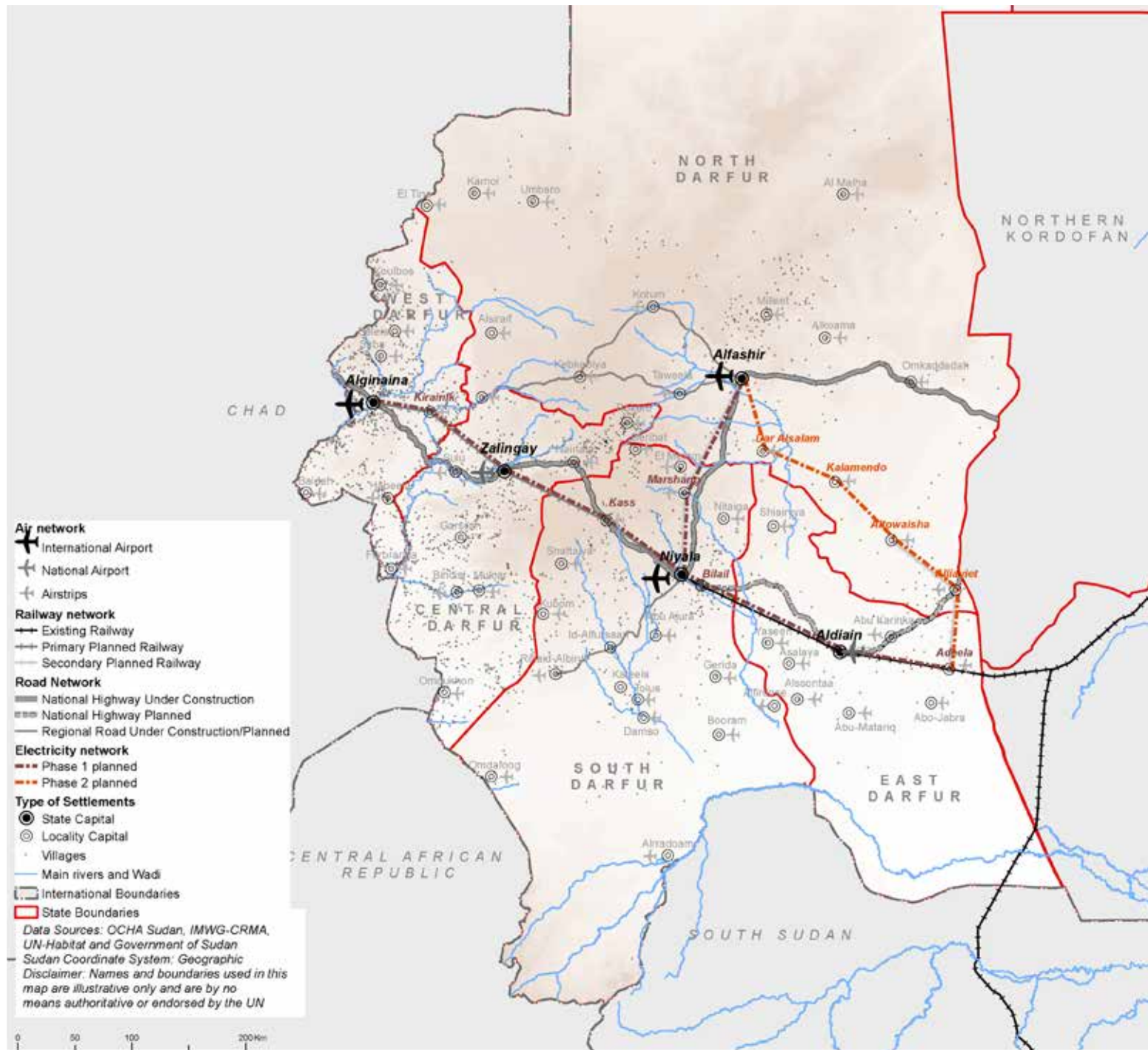


TABLE 103: MANAGEMENT DISTRIBUTION OF HEALTH FACILITIES IN DARFUR

State	SMoH	NGOs	Community
North Darfur	54%	33%	13%
West Darfur	30%	70%	-
Central Darfur	29%	71%	-
South Darfur	80%	20%	-
East Darfur	86%	14%	-
Darfur	55.8%	41.6%	2.6%

The need for expanded access to education facilities

Strengthening education is a key strategy if the human capital required to move Sudan out of crisis and toward longer-term peace and sustainability⁶⁶ is to be bolstered. In the current conditions in Darfur, providing educational services for nomads and IDPs remains a significant challenge as these populations are constantly on the move. Data on the size of these population groups are scarce, and available estimates vary greatly⁶⁷. In addition, estimated population projections (CBS, 2008) did not take into account the consequences of the on-going conflict.

According to the 2012 report on “The Status of the Education Sector in Sudan”, student enrolment has expanded since the year 2000. The highest growth rate occurred in pre-school (10% per year), followed by higher education (7% per year), secondary education (6% per year) and basic education (5% per year). Nevertheless, the report highlights Darfur as featuring the lowest gross enrolment rates. Detailed data on enrolment and dropout rates have been made available only by the State Ministry of Education of North Darfur. The data provided by the other States only refer to the number of residents served in each locality, making any detailed assessment of needs more difficult.

Infrastructure development after a decade of fighting

The construction and restoration of basic infrastructure and services constitutes a crucial component of any recovery process across Darfur. Constructing or improving main roads, railways and air transport facilities and connections would reinforce the links between communities and markets, in the process boosting the economic system of any given region. In Darfur, infrastructure development is particularly needed, considering that after a decade of fighting existing facilities have been severely damaged if not destroyed.

The management and development of the national highway network linking Sudan to neighbouring countries and connecting State capitals to other main towns fall under the responsibility of the National Highway Authority (NHA). At State level, the Ministry of Urban Planning and Public Utilities is responsible for intra-State roads, mainly unpaved, as well as the electricity and communication networks. There are international airports in Niyala and Al Fashir and one domestic airport in Alginaina. Two domestic airports are under construction in Zalingay and Aldiain. There is a cargo service from Niyala to Cairo for meat exports.

The Sudan Railways Corporation (SRC) operates weekly passenger services linking Khartoum to Adeela, Aldiain, Bilail and Niyala in Darfur. The SRC plans to extend the railway from Niyala to Alginaina up to Adri in Chad (336 km).⁶⁸

At the national level, two electric power grids are in operation, but Darfur has no access to either. Current power production in Darfur depends on thermal generators. Under the Electricity National Plan (2012), all the States of Darfur will be linked to the national grid by 2016. Darfur's first-ever power station was built in 1966 in Al Fashir and the network started operations in 1968. However, 19 neighbourhoods are still not connected to this day, but a new power station is under construction to serve them. The Niyala power station came on stream in 1985 and the grid was further extended in 2008, but it serves less than 30% of the needs. In West Darfur State, Alginaina is the only town with electricity, though only through outdated diesel generators serving a small area. In Central Darfur State, the only city with electricity is Zalingay, where a small thermal generator keeps experiencing fuel shortages. In East Darfur, the only settlement with electricity in is Aldiain through a thermal station. Solar energy is being introduced for street lighting and some private houses.

As for telecommunications, three cellular network companies operate in Darfur: MTN, SUDANI, and ZAIN. In West Darfur State, Kulbus, Jebalmoon and Baidah localities are not served yet, and the same holds for the Central Darfur localities of Um-Dukhun, Bendisi and Rokoro I.

66 United Nations Country Team (UNCT) Country Analysis, Sudan, February 2012

67 The Status of the Education Sector in Sudan 2012. Africa Human Development Series, the World Bank.

68 Sudan Vision, 14 September 2013.

ECONOMIC RECOVERY AND DEVELOPMENT

Darfur's population is essentially agrarian – nomads, farmers and sedentary agro-pastoralists, some with substantial physical and social capital. In particular, small-scale farming and semi-nomadic pastoralism constitute the backbone of the economy, supported by a multiplicity of secondary activities linked to seasonal rural-urban migration, petty trade in wild fruit and other produce, cross-border trade and handicrafts, etc. The latter provide additional household incomes and contribute to food security during shortage periods.

Part of Darfur's population also works in irrigation projects along the Nile river and in semi-mechanized farming areas in Gedarif and Blue Nile States, sometimes migrating permanently to these areas. Some move across the Sudanese border, particularly to the Gulf States and Libya, to which some Darfur tribes are culturally linked, especially Zaghawa and Fur. As a result, remittances play a significant economic role for thousands of households across Darfur⁶⁹.

The conflict that started a decade ago affected more than a million people across Darfur, mainly through its devastating effects on livelihood resources, massive human displacement, looting and

loss of financial and physical assets (houses, livestock, agricultural tools and infrastructure) and restrictions on livestock movement, access to agricultural farmland and wild food collection sites. The conflict also disrupted trade and markets, hindering both labour migration and remittance flows.

On the other hand, as mentioned in the introduction, the conflict has accelerated the urbanisation process in Darfur: 45% of Darfuris live in or near the main urban areas, causing a gradual shift away from agriculture and towards more urban-related economic activities (e.g. plumbers, electricians, carpenters, land surveyors, master builders, health/education workers, etc.). Still, reliance on agricultural and forestry products – including for common urban requirements like construction – suggests that the position of these sectors in Darfur's economy is likely to remain strong. As a result, efforts to revive rural livelihoods deserve significant attention⁷⁰.

Potential mining areas were identified in various localities across the five States of Darfur, namely Umbaro, Kebkabiya, Alsiraif, Saraf-Omra, Baidah, Omdukhom, Kass, El Salam, Alrradoam and Alliyiet (UN-Habitat State Consultative Workshops, 2012). Gold mining activities have been reported in Hashaba (about 50km east of Kotum) and Jebel 'Amer (Alsiraif). So far, mining almost entirely involves the

artisanal panning method rather than more efficient industrial processes⁷¹. But this situation can change rapidly as the *Central Bank of Sudan Policies* for the year 2012 has identified consolidation of government control over gold produced through traditional mining as a key objective⁷².

Currently, the Sudanese economy faces the shock caused by the loss of oil revenues due to the secession of South Sudan, which caused the country's gross domestic product to fall by 3.3% in 2011 and by a further 11.1% in 2012. In 2013, the oil-related financial shortfall stood at SDG10 billion (or US\$2.1 billion), a third of the country's overall budget. Against this background, Sudan's recovery depends on continued fiscal discipline and careful prioritisation of expenditures. These conditions are sure to restrict the Government's ability to support recovery and reconstruction in Darfur on its own resources.

Darfur is currently facing many economic and development challenges. Chronic under-investment, marginalisation and isolation from the rest of the Sudanese economy have prevented the region from reaching its full productive and trading potential. Low productivity has combined with desertification and inappropriate land use practices to entrench poverty and the risk of famine.

TABLE EC01: MAIN INCOME SOURCES BY COMMUNITY TYPE

Main sources of income (%)	North Darfur		South Darfur		West Darfur	
	IDPs	Residents	IDPs	Residents	IDPs	Residents
Crops	11	14	2	6	11	14
Livestock	2	3	1	4	2	3
Donations	3	4	5	4	3	4
Business	17	16	21	25	17	16
Wage labour	45	53	54	37	45	53
Food aid sale	0	3	3	1	0	3
Firewood	7	1	9	10	7	1

Source: WFP, Food Security Monitoring System - Round 7 (August 2010)

69 An independent assessment of state of early recovery programming in Darfur, OFDA/USAID. Partners in Development Services, June 2012.

70 Beyond emergency relief: Longer-term trends and priorities for UN agencies in Darfur. September 2010. UNDP

71 Darfur's Gold Rush. State-Sponsored Atrocities 10 Years after the Genocide. Omer Ismail and Akshaya Kumar. The Enough Project and Satellite Sentinel Project, May 2013
72 <http://www.cbos.gov.sd/en/node/3324>

Current socio-economic conditions in Darfur

Almost two thirds of the Darfur population live below the poverty line. The human development indicators of the region are among the worst in Africa. Delivery of basic services such as health, education and water is severely constrained not just by the conflict but also by lack of adequate human and financial resources available.

Prior to the conflict and over the last 10 years, the five Darfur States have received less than half of the fiscal transfers allocated to other Sudanese States with comparable population and administration. This fact, coupled with deficiencies of the federal administration in the security and judiciary sectors, has further contributed to the marginalisation of the region. Darfur is eminently dependent on federal transfers, as own State revenues contribute less than 20% of the fiscal resources available. This economic predicament was further compounded by the formation of two

additional Darfur States at the beginning of 2012.

Darfur shows amongst the highest unemployment rates in Sudan, especially among youth who have had to endure as many as eight years in displacement⁷³. Up-to-date labour surveys (the last official one dates from 1996) are not available to provide accurate, current information and help develop strategies for job creation; but 2010 data in the WFP Food Security Monitoring System can provide an overview of the main income sources by community type.

Agriculture

According to the Ministry of Agriculture, the total cultivated area in Darfur reached 11,500,000 feddans before the conflict. Of these, 66% grew cereals, half of which in Southern Darfur⁷⁴. During the first year of the conflict, FAO and WFP estimated that only 45% of the millet crop was harvested. Many villages were attacked during the

weeding period, shortly before or during harvest time. Standing crops were burnt, destroyed or grazed by livestock.

Most agriculture in Darfur involves traditional rainfed farming, and its large rangelands are where most of Sudan's livestock is located. In 2005, the traditional rainfed farming areas and livestock accounted for about two-thirds of the contribution of agriculture to Darfur's overall production of goods and services, with a predictably lower proportion in drought years (Table 2).

In the whole of Sudan, irrigated areas contribute some 26% of the share of agriculture in GDP and they are host to about 12% of the population. As occurs in other developing countries, the majority of the rural population live in traditional small-scale farming areas, a pattern that keeps them poorer than any other farming system. This points to the need to expand average farm sizes and to

TABLE EC02: GDP ESTIMATES FROM AGRICULTURE IN DARFUR, 2000 - 2005

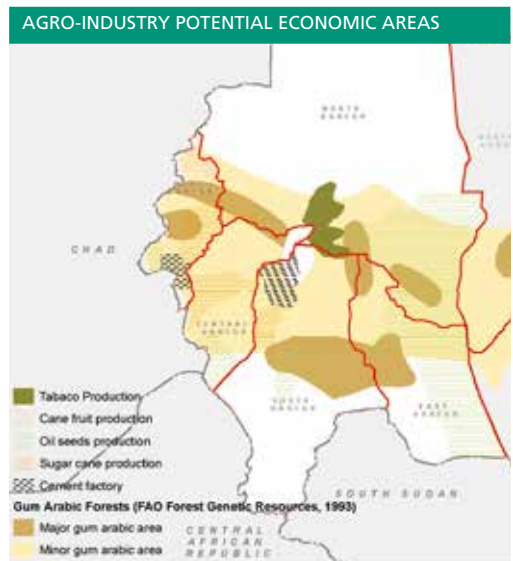
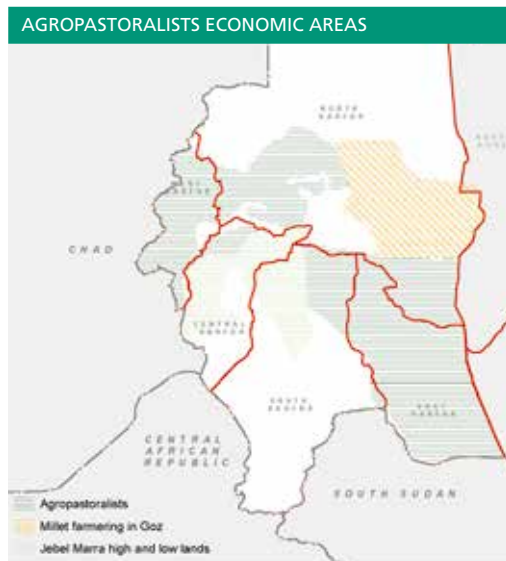
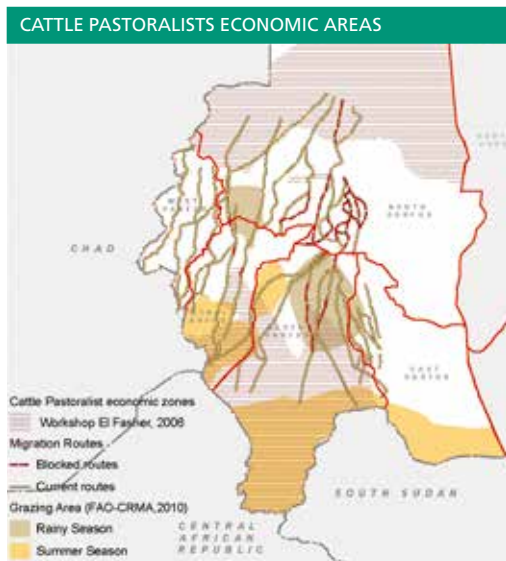
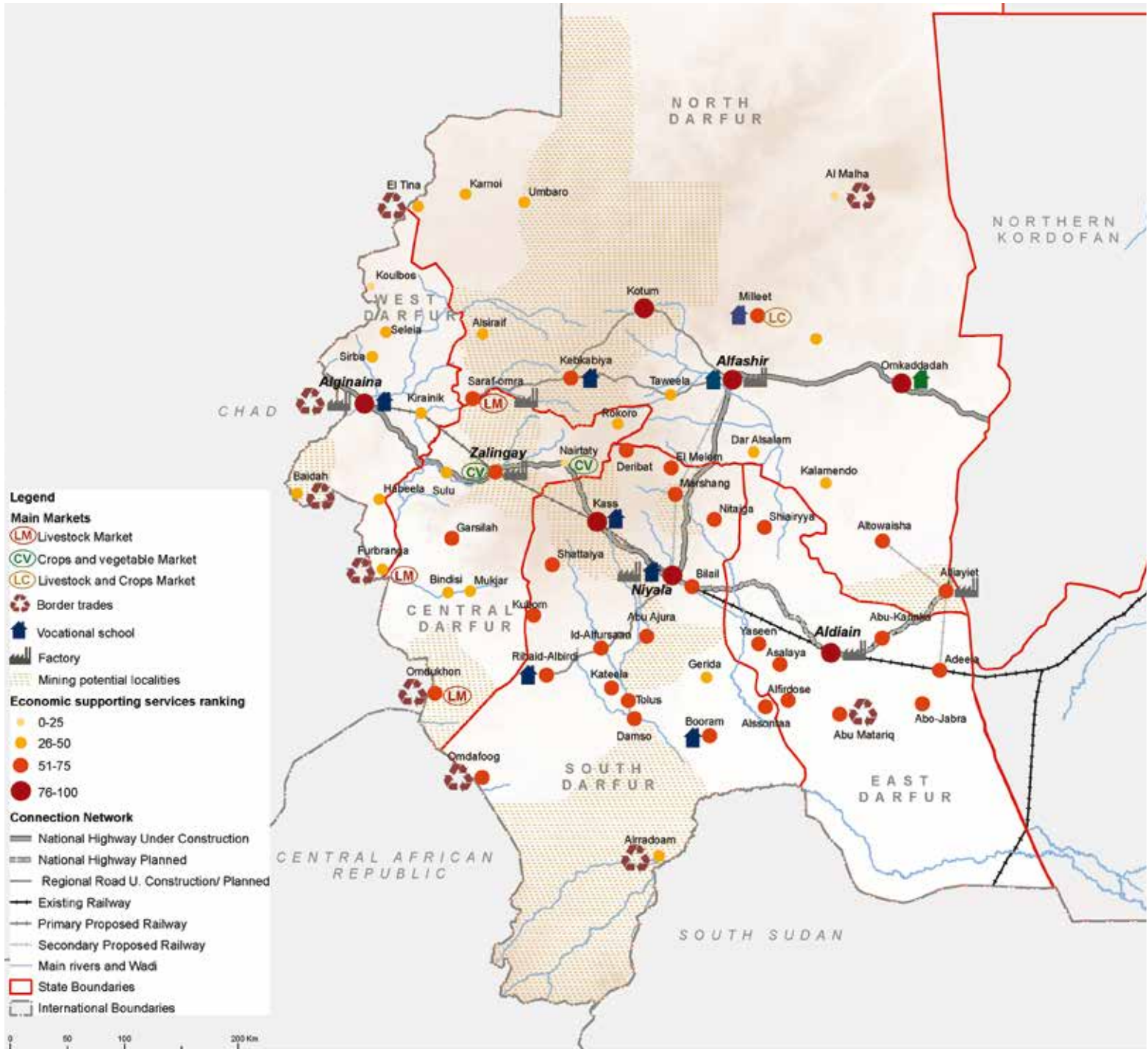
Sectors/Sub-sectors	Average - 2000 to 2005 (nominal prices)			
	Average GDP (SD million)	Growth Rate (% p.a.)	% of GDP (excl. firewood and charcoal)	% of GDP (incl. firewood and charcoal)
Irrigated crops	-	-	-	-
Rainfed semi-mechanized crops	NA	NA	-	-
Rainfed traditional crops	62,293	-1.5	63.4	23.7
Minor crops	NA	NA	-	-
By-products	NA	NA	-	-
Total Crops	-	-	-	-
Livestock	35,204	22.3	35.8	13.4
Forests (gum arabic)	812	38.0	0.8	0.3
Fisheries	-	-	-	-
Total (excl. Firewood & Charcoal)	98,309	7.9	100.0	37.4
Firewood	143,000	NA	-	54.4
Charcoal	21,552	NA	-	8.2
Total (incl. Firewood & Charcoal)	262,861	NA	100.0	100.0

Source: Darfur Development Challenge, World Bank Report, 2007

⁷³ Capacity assessment and development of economic actors in the three Darfur states. Partners in Development Services, Khartoum, UNDP, 2011.

⁷⁴ El Dukheri et al. Rationale for a possible market support program in Darfur, Sudan: A brief look at markets and food security, August-September 2004, CARE.

MAP SCO06: ECONOMIC RECOVERY AND DEVELOPMENT REGIONAL SPATIAL PLANNING STRATEGY OF D^{AR}FUR



improve productivity through substantial technological changes (FAO 2012).⁷⁵

The FAO's Vulnerability Analysis and Mapping report (FAOVAM, 2010) shows that only half of Southern Darfur farmers have access to land for cultivation. The situation is worse in Western Darfur since only limited areas around IDP camps are available to farmers. The Jebel Marra area has been badly affected by the conflict, and orange production went down by 50% (FAO 2012).⁷⁶ In Kotum and Kebkabiya, North Darfur, production in *wadi* gardens has declined due to displacement, the looting of water pumps and the destruction of irrigated fruit gardens. Only land around urban settlements seems to be safe for farming. In Kebkabiya, 25% of the population has access to *wadi* farms, while only 5% have access to rainfed farms.

The major crops grown across Darfur are millet and sorghum as food crops, and groundnuts, local watermelon, sesame, roselle or karhadeh and gum Arabic as cash crops. Fruit and vegetables are also potentially significant exports. There are numerous minor crops grown in Darfur such as maize, cowpeas and a range of vegetables. It is also noted that rainfed cotton farming, grown on large clay soil areas, could expand much more in the future. The annual variability of yields for crops such as millet, sorghum and sesame grown under rainfed conditions lies between 30 and 40%.⁷⁷

An average agricultural farm household in Darfur grows crops on 6-13 ha of land. Traditionally shifting agriculture is practiced through alternative production of gum arabic and field crops. In this system, the land is cleared of all trees and used for field crops, usually for seven to 10 years, until productivity declines and striga (weed which parasitizes sorghum roots and reduces yields) appears.

According to the Ministry of Agricultural Resources, Darfur is host to significant proportions of Sudan's total livestock: 39% of bovines, 36% of sheep, 23% of goat and 26% of camels. In absolute terms, the livestock population in Greater Darfur (three States: North, South and West Darfur) was estimated at 8.9 million bovines, 11.5 million sheep, 10.2 million goats and 4.3 million camels.⁷⁸ Most of the livestock in Darfur is owned by the *Abbala* (camel-raising) and the *Baggara* (bovine-raising) pastoralists.

However, a substantial proportion of livestock in Darfur is also raised by agro-pastoralists and investors. The growth in livestock numbers in the region, projected over the years at 3.2% per annum, is attributed to a host of inter-related factors: increasing numbers of farmers combining crop production with livestock-raising as complementary strategy to cope with recurrent droughts; growing private investment in the sector; some pastoral groups moving to commercial production; and the growth in domestic and foreign

livestock markets. The importance of livestock as a secondary source of livelihood for farmers and agro-pastoralists has been substantiated by a number of field studies (UNEP/OCHA, 2005; Young *et al.*, 2004/5).

Livestock exports accounted for 18% of the total value of Sudan's non-oil exports in 2005. Although specific data on Darfur's livestock exports are not available because of the informal nature of the business, it is clear that its overseas markets are now dominated by sheep exports to Saudi Arabia. Trade in sheep and camel to Libya had to stop following the closure of the border. Camels are still traded to Egypt via a long route that starts in Al Fashir.

There were 11 gazetted stock routes in Greater Darfur with a total length of some 4,860 km running north to south and southwest used by the *Abbala* and *Baggara* tribes. Restrictions on traditional migratory routes due to the recent demarcation of the border with South Sudan are cause for serious concern for the region, particularly for South and East Darfur. Areas inside South Sudan that used to be routine grazing sites for livestock from Darfur during the dry seasons are no longer accessible. The consequence is an alarming concentration of livestock, with inadequate water and pasture resources, in the Darfur localities bordering South Sudan. In 2006, Darfur contributed 20% of the country's overall livestock earnings⁷⁹, while in 2012 Darfur's livestock represented an estimated 1/3 of Sudan's

TABLE EC03: ESTIMATED LIVESTOCK POPULATIONS IN DARFUR AND SUDAN, 2010

State	Cattle	Sheep	Goats	Camels	Total
North Darfur	668,176	3,760,104	2,888,827	578,337	7,895,444
South Darfur	4,217,861	3,843,430	2,997,429	155,795	11,214,515
West Darfur	4,050,817	3,905,925	4,387,541	417,919	12,762,202
Darfur total	8,936,854	11,509,459	10,273,797	1,152,051	31,872,161
Darfur as % of Sudan	39.1	36.3	22.7	26.4	39.1
Sudan total	41,116,000	50,390,000	42,756,000	4,078,000	138,340,000

Source: Special Report: NQUASI CROP AND FOOD SUPPLY ASSESSMENT MISSION TO SUDAN, 2012. Ministry of Agriculture, FAO

⁷⁵ Special Report: NQUASI CROP AND FOOD SUPPLY ASSESSMENT MISSION TO SUDAN, 2012. Ministry of Agriculture, FAO

⁷⁶ *Ibid.* n. 75

⁷⁷ The coefficient of variation is the ratio of the standard deviation to the mean of a series.

⁷⁸ *Ibid.* n. 75

⁷⁹ Strategies for Economic Recovery and Peace in Darfur: Why a Wider Livelihoods Approach is Imperative and the Inclusion of the *Abbala* Arabs a Priority, July 2007. Helen Young, Abdalmonium Osman and Rebecca Dale.

livestock resources after the secession⁸⁰; according to the Sudan Central Bureau of Statistics (2010), the country's livestock exports (goats, sheep, and camels) in 2008 amounted to 0,8 million heads.

Food insecurity

Food insecurity has been a huge concern in Darfur over the past two decades, when the region gradually turned from a self-sufficient producer of major staple food crops to a situation where approximately half of the population depends on food aid. According to the State Ministries of Agriculture and a WFP comprehensive food security assessment carried out in November 2011, the highest percentage of food-insecure households is found in North and West Darfur (23% each), compared with 11% of households in South Darfur.

Currently, a combination of several factors continues to interfere with effective food security in Darfur. Overall rainfall was adequate in 2012, but it is its variability that has undermined overall agricultural production, keeping the region dependent on food imports even when conflict-related shortages abated. In addition, fluctuations in world prices for key imported food items have combined with currency instability and high inflation (which reached 42.1% in August 2012) to have a serious effect on Sudan. The 20% poorest part of the population has been spending up to 3/4 of their income on food.

The land issue

As mentioned in the sub-chapter on Governance and Institutional Challenges in this report, current land policies in Sudan do not provide Darfur farmers with long-term tenure security (either through long-term leases or as freehold), even where these policies leave the allocation of land rights to customary law. The latter, however, provide farmers with long-term use rights for as long as they continue to cultivate the land. Unfortunately, in North Darfur and some parts of South Darfur, this is a prescription for serious land degradation. Until legal mechanisms are

in place that transfer the wealth inherent to land from the State to the people on the basis of long-term leasing – be it through statutory or customary law – there will not be any effective agricultural investment programme in Darfur or other regions of Sudan, and the productivity and competitiveness of the agricultural sector will remain low.

Markets and trade

Historically, Darfur is organised in a three-tier structure where large markets, urban and regional, through traveling traders (“Um Dawerwer”) rotating on a weekly or bi-weekly basis, which in turn are served by smaller village markets. Goods are moved between these markets through the region's well-developed trucking industry⁸¹. Retailers in most cases are women while wholesalers are men.

El Dukheri *et al.* (2004) estimated the profit level at about 12% for the retail and around 5-8% for the wholesale trade. They found that grain markets are dominated by relatively small-scale wholesalers whose stock typically varies between 20 and 100 tonnes with a turnover range of 1-2 tonnes per week per trader. Prices usually drop following the harvest season (November to December), start climbing in the middle of the dry period (April or May) and peak during the rainy season as access becomes increasingly difficult, supply levels diminish and demand increases with returning migrant workers.

Markets and trade in Darfur were seriously impacted by the conflict. Access to markets for buyers and sellers has been severely restricted as a result of insecurity and restricted mobility. Additional constraints are associated with a range of phenomena: border closures, restrictions on moving goods in army-controlled areas, fuel embargoes, frequent checkpoints, random taxation and protection-related payments. This has resulted in a reduction in trade between primary and secondary markets, with more producers serving only local markets.

Consequently, urban markets have been expanding, particularly in larger cities with African Union in Sudan (AMIS) presence and IDP camps. However, they lack modern facilities such as cold storage, fumigation rooms, information systems, etc., as they consist mainly of uncovered stalls. Field visits have shown that horticultural products prone to post-harvest deterioration (such as tomatoes, oranges, onions, etc.) are sold by small individual traders in open markets.

The number of livestock traders operating in Darfur has declined sharply. Since 2003, in Niyala market the number of livestock traders has fallen more than 50%. In North Darfur, where there used to be around 20 traders engaged in sheep exports, in 2011 only three were remaining, of whom one was an agent for an exporter in Central Sudan. In Furbranga, the number of local livestock traders halved from around 150 pre-conflict to about 70 in 2008, and the number of agents more than halved from around 50 to only about 20. Since late 2010, however, the market has somewhat recovered and the number of traders and agents has started to rise again. In Aldiain, another pre-conflict major livestock market, the number of local livestock traders more than halved from around 170 to around 80 in 2011, and the number of agents also halved (UNEP, 2012).⁸²

Trade flows and the movement of trucks within Darfur have been substantially affected, especially by transportation costs, causing huge price differentials across individual markets. The Kulbus-Alginaina route, in West Darfur, features no less than 20 checkpoints along its 132 km length, each charging around SDG5.00 per truck. As fuel costs have risen, too, the cost of transporting a sack from Kulbus to Alginaina has increased from SDG15.00 in March 2012 to SDG20.00 in May 2012. Emergency regulations also mean that the trucking of fuel has been prohibited, further pushing up transportation costs. Another major trade route in West Darfur has been intermittently closed because of insecurity, between Alginaina to Niyala

80 *Ibidem* n. 75

81 *Rationale for a Possible Market Support Program in Darfur, Sudan, El-Dukheri et al., CARE, 2004.*

82 *On the hoof: Livestock trade in Darfur, September 2012. United Nations Environment Programme (UNEP).*

through Zalingay, with approximately 80 checkpoints. These factors inhibit trade flows and increase transportation costs (DRA 2012).⁸³

Transport has a critical role to play in Darfur's socioeconomic advancement, with the potential to revitalize trade and pave the way for a solid recovery. At the moment, Darfur's economy remains marginalised, lacking the benefits of proximity as well as good connectivity to markets, intermediaries, information and skills. The distance from Niyala to Khartoum is 1,305 km by rail, and 1,780 km to Port Sudan on the Red Sea. The distance by road from Al Fashir to Khartoum is 1,250 km, of which about 400 km are dust tracks which cannot be relied upon during and after the rainy season.

Trade in gum arabic

Sudan is the world's leading exporter of gum arabic, according to the Sudan Central Bureau of Statistics (2010): with 38,000 metric tons sold abroad in 2008. In Darfur, gum arabic represents a particularly important crop for poor farmers on marginal land, but trade remains under government control and farmers' prices have been kept low. In 2009, the trade was liberalised and taxes removed; but, unfortunately, this happened after a price slump during which many acacia trees were cut down and sold as firewood or charcoal in Darfur, and they will be hard to replace.⁸⁴

Industry, mining and private sector

With its strategic location, Darfur, has historically acted as a pillar for agriculture and transportation both in Sudan and in neighbouring Chad, Libya, Central African Republic and, today, South Sudan. Despite the on-going conflict, restoring cross-border trade flows between Darfur and neighbouring market hubs is a major prerequisite if industrial zones are to be redeployed, on top of a revival of the agricultural sector.

The *Strategy for the Manufacturing Industries Sector for the period 2007-2030* devised by Sudan's Ministry of Industry (Mol) aims at transforming agriculture into a strong industrial sector that maximizes the added value of both produce (e.g., sesame, gum arabic, cotton, sorghum) and livestock. One of the targets is to achieve food self-sufficiency, making the most of domestic resources and securing efficient linkages with the agricultural sector.⁸⁵

In Darfur, the *Sudan Industrial Survey* (2002) identified 4,100 manufacturing enterprises in South Darfur and 1,250 in North Darfur, but according to the World Bank only 10-20% of these were operational by late 2006. At present, most of the larger processors of agricultural commodities are gradually disappearing and are being replaced by small enterprises employing only five to 10 workers. The latter are specialised in oil cold-pressing, ground-nut shelling, brick-making, furniture, bakery, water purification, etc.⁸⁶

Although years of conflict have eroded any significant industrial base that ever existed, local artisans dominate manufacturing through a host of vibrant micro- and small-size enterprises. South Darfur has the largest number of artisans, estimated to be over 3,500, while in North Darfur, the number is around 600, with 500 workshops (located in Al Fashir).⁸⁷

In 2009, 241 civil society organisations (CSOs) were officially registered in Darfur, mostly around urban centres – Al Fashir, Niyala, Alginaina and Zalingay. CSOs maintain strong links to specific ethnic or tribal and/or geographical areas, and focus on humanitarian assistance.

The Darfur business community has proven itself to be resilient and innovative, but a decade of unrest and economic stagnation has severely depleted human resources across the region. The relatively few technical colleges provide training in basic skills in construction, auto-mechanics, woodwork, metalwork and

electrical work, and therefore do not look to improve skills and productivity in a still-predominant agricultural sector.⁸⁸ Enhancing technical and financial assistance seems to be a major requisite if existing micro- and small businesses are to expand current operations. This may include restoring pre-conflict value chains with high added value and export potential (gum arabic, leather, ground nuts, oil seeds), as well as encouraging the emergence of new products and services, such as in the ICT and technology sectors.

The Sudanese government considers gold mining as suitable compensation for the country's loss of oil fields after separation from South Sudan. In 2012, Russian and Chinese companies were granted permits to explore a 769 km² area in the country. The Sudanese government also has signed exploration agreements with companies from South Africa and Britain. Currently, 100 companies are licensed for exploration and development operations. However, only 13 firms are in the production stage.⁸⁹

Darfur is rich in a variety of minerals such as uranium, copper, iron-ore, gold and nickel. Despite the absence of major mining operations or foreign direct investment in 2012, Jebel 'Amer (El Sereif) contributed one third of Sudan's gold production. The Beni Hussein community is the traditional custodian of this particular area, with the tribe's *sultan* and his local mining committee in control of mining permits.⁹⁰ Conflicts have emerged since the beginning of 2013, as reported by UNAMID, with intercommunal violence flaring up in early January, when the Beni Hussein tribe and Aballa camel-herding tribes clashed in Jebel Amer over access to a gold mine managed by the Beni Hussein group.⁹¹

An emerging informal sector in urban areas

Rapid urban growth has combined with the conflict-related presence of a significant number of foreign and international bodies

⁸³ Darfur Development and Reconstruction Agency (DRA): *Trade and Market Bulletin March- May, 2012*

⁸⁴ *Microfinance assessment consultancy to Darfur, Sudan. Commissioned by the Feinstein International Centre of Tufts University, IOM and UNDP Sudan. February – March 2010.*

⁸⁵ <http://industry.gov.sd/ennn/main/linsdaun.htm>

⁸⁶ *Ibid.* n. 73

⁸⁷ [http://www.darfurconference.com/sites/default/files/files/9](http://www.darfurconference.com/sites/default/files/files/9%20Thematic%20Working%20Group%20Private%20Sector%20Development.pdf)

⁸⁸ *Ibid.* n. 75

⁸⁹ *Darfur's Gold Rush. State-Sponsored Atrocities 10 Years after the Genocide. Omer Ismail and Akshaya Kumar. May 2013. The Enough Project and Satellite Sentinel Project.*

⁹⁰ *Ibid.* n. 70

⁹¹ http://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/s_pv_6910.pdf

to trigger new economic and entrepreneurial activities, especially in the form of informal businesses in the communications, transport and construction sectors. In fact, at least 80% of the workers in Darfur urban centres are to be found in the informal sector. The latter, however, is made up of very heterogeneous types of businesses in terms of both activities and degree of informality (registration, licensing, taxation, wage employment).

Construction is probably the most flourishing sector in urban areas, with over 500 brick kilns registered across all of Darfur. Since each kiln involves approximately 15 workers, fire brick making is employing approximately 7,500 workers, mainly female and under-age IDPs. However, as stated in the sub-chapter on Environmental Challenges in this report, this welcome source of income is counterbalanced by its extremely harmful environmental impact, as they use local trees for fuel. Therefore, "greener" construction technologies, such as stabilised soil blocks (SSB), must be promoted.

Public transport is another expanding economic sector in Darfur's urban areas. According to traffic police records, 7,901 public transport vehicles are registered in South Darfur, including 1,574 taxis, 4,579 rickshaws and 1,748 vans or minibuses.

The communications sector is one of the strongest and fastest growing types of business in Darfur, providing employment in the main urban centres, especially for youth who become involved in a wide range of activities – including sale of air-time (pre-paid) and SIM cards, and sale and maintenance of mobile phones⁹².

Microfinance

At the moment, micro-businesses in Darfur have no access to the formal financial system, either for lack of awareness or because of banks' reluctance to offer such services to low-income workers in the informal sector. In an attempt to encourage the banking system to engage with microfinance, the Central Bank of Sudan (CBoS) in 2003 set out guidelines whereby

commercial banks were to commit a minimum 10% of total credit amounts to microbusinesses. Subsequent research has shown that this policy was ineffective as most banks kept their dedicated portfolios far below that level⁹³ (NB: the CBoS is now launching a national microfinance development strategy). For example, in Niyala bank funding for microfinance activities did not exceed 2% of total credit portfolios, except for the Savings and Social Bank which is specialized in microfinance. In Al Fashir, Bank of Khartoum was the sole credit provider to microfinance, but this amounted to less than 1% of its portfolio.

The reluctance of banks to offer financial services to small and micro-entrepreneurs is mostly related to the associated transaction costs, that is, the cost of managing and delivering credit as well as credit risk (non-repayment). Small entrepreneurs are perceived by banks as risky clients as they cannot offer collateral against loans and do not keep proper accounting books. What microfinance services NGOs offer in Darfur fall well short of matching demand, both in quantity and quality terms (UNICONS, 2006).

The public sector

Government institutions provide employment for 54,454 individuals in Darfur, accounting for approximately 2% of the total labour force in the region; half of these government employees work in South Darfur. In terms of gender distribution, 54.4% of these positions are occupied by males and 45.6% by females. However, the total number of positions approved in the public sector in this region is 92,263. This means that 40.8% of the positions remain vacant, due to budget constraints⁹⁴.

Decades of public under-spending (with the conflict absorbing the bulk of available funds) and of inadequate investment in human resources development have left the civil service in a state of severe under-equipment and poor capacity to deliver

core services. On top of this, improper procurement and budgetary management combines with haphazard organizational rules and systems, resulting in an overall lack of transparency and efficiency which affects not only public trust in government, but also the willingness of international agencies to channel funds through the administration.

Public officials across Darfur have been working under a strongly militarised framework, leading to a lack of civil service ethic. This has been compounded by a disempowered civil society with little capacity or opportunity to influence government policies and programmes. This has left the public administration with little capacity to adopt the participatory planning, management and delivery approach which has such an essential role to play in peacebuilding and employment promotion. The main human resource gaps are more severe within the Ministries of Finance and Economic Development, of Labour and Social Welfare, which are mandated to design and implement youth-targeted employment projects.

The humanitarian and civil society sector

The role of the humanitarian sector in employment creation is widely acknowledged. According to the Ministry of Finance in South Darfur, the expulsion of international NGOs in 2009 led to the loss of approximately 3,000 jobs in the State. In North Darfur, according to the Humanitarian Assistance Commission, the 23 authorised international organizations, mainly UN agencies and INGOs, employ a total of 602 Sudanese staff including 416 (69.1%) males and 186 (30.9%) females. This is in addition to large numbers of auxiliary staff (guards, domestic helpers, etc.) Still in North Darfur, UNAMID employs 2,818 national staff (2,430 males and 388 females). Double this number is estimated to be employed in South and West Darfur States. It should, however, be noted that Sudanese professional staff employed by UNAMID are not necessarily from Darfur as binding arrangements with the government do not allow for affirmative action in favour of local staff.⁹⁵

⁹² Ibid. n. 73

⁹³ Formulation of a Vision for the Development and Expansion of the Microfinance Sector in Sudan, February 2006. UNICONS Consultancy Ltd. Comm. by Central Bank of Sudan.

⁹⁴ Ibid. n. 73

⁹⁵ Ibid. n. 73



Part: Four

06. Regional Spatial Planning Strategy of Darfur

VISION, GUIDING PRINCIPLES AND OBJECTIVES

Vision

The vision behind the *Regional Spatial Planning Strategy of Darfur* (RSPSD) is to provide strategic guidelines for a more balanced and functional regional development of the region in order to facilitate conflict resolution, peace consolidation, economic recovery and long-term sustainable development, especially through deployment of a network of urban settlements that can benefit surrounding rural areas. Ultimately, the RSPSD is designed to support spatial action planning in the short, medium and longer terms at the State and lower territorial levels across the length and breadth of Darfur and neighbouring areas or countries, maximising the benefits of infrastructural investment against a background characterized by scarce resources and capacities.

Guiding principles

The development of the RSPSD complied with the following guiding principles, which shall also prevail for its subsequent dissemination:

- Ensuring full ownership by central and State government authorities during the development phase of RSPSD; this involved consultations with representatives of local groups through a participatory, bottom-up and consensus-building approach, including on-the-job training for relevant institutions as well as a technical and political validation process.
- Opting for easy-to-understand, unbiased methodologies while developing the RSPSD, complete with scientific consistency and acceptable, easy-to-replicate logical patterns, in the

process facilitating buy-in and adoption by the various stakeholders.

- Dissemination and awareness-raising with a view to mainstreaming the RSPSD across the five State governments of Darfur as well as in central government in order to facilitate implementation by the various tiers of power, according to the specifically defined action plans.

Objectives

In the short to medium terms, the RSPSD pays special attention to the needs of internally displaced persons (IDP), returning refugees and others affected by past and on-going conflict, the aim being to provide strategic spatial orientations for improved access to basic services, better security conditions and job/subsistence opportunities through return and reintegration. This is in line with the objectives set out in Article 31, "Development policies for Darfur", of the *Doha Document for Peace in Darfur* (DDPD), with specific regard to reconstruction and development, as follows:

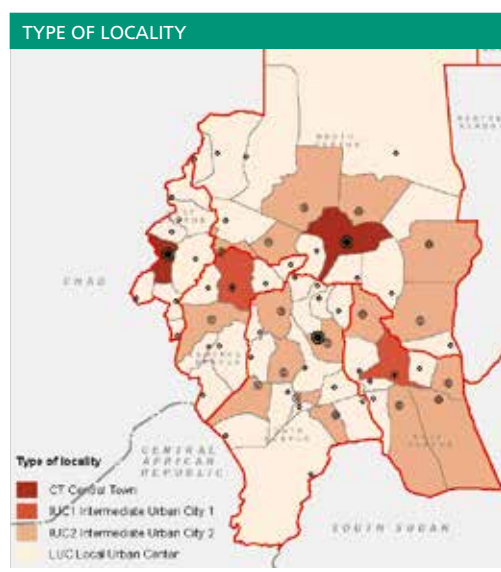
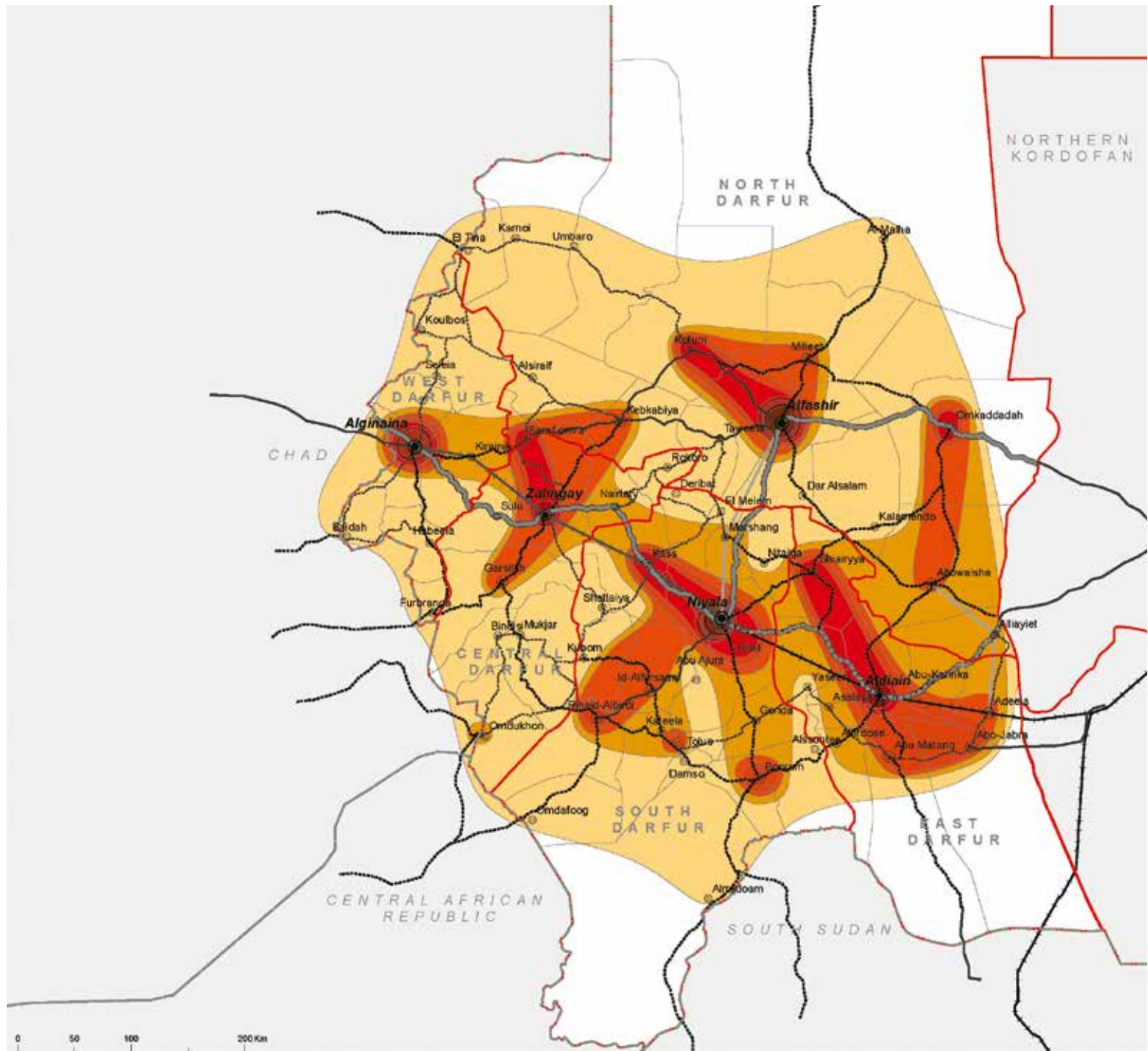
- Reinvigorating Darfur's economy to enable its integration into the national economy and promote trade between the Darfur States and neighbouring countries;
- Rehabilitating basic social services such as education, health and water supplies;
- Bringing about sustainable economic growth, equitable development and social stability, with improved access to social services;
- Poverty reduction and raising economic capacity and awareness;
- Creating adequate employment opportunities.

- Developing physical infrastructure to improve access to the main markets in Darfur, the rest of Sudan and in neighbouring countries, and committing to implementation of the Western Ingaz Highway with all branches within two years in accordance with international standards;
- Promoting alternative energy sources and addressing the causes of environmental degradation

Therefore, the RSPSD is primarily designed to provide the spatial guidelines required to facilitate the transition from humanitarian relief to early recovery, sustainable reconstruction and economic development, against a background of peace stabilisation and fully in line with the framework for durable solutions for IDPs as defined by the UN Inter-Agency Standing Committee in 2009.

For this purpose, and from a methodological perspective, the RSPSD starts by identifying a hierarchy of settlements based on respective socio-economic functions (through the Matrix of Functions MoF), according to three main typologies: Local Urban Centres (LUC), Intermediate Urban Centres (IUC) and Central Towns (CT). The next step consists in an analysis of the geographical distribution of these settlement types, including through public consultations, in an effort to identify suitable priority areas (also referred to as Economic Development Areas or growth poles) where investments could maximise the benefits for the Darfur population. These priority areas, each comprised of a cluster of – typically three or four – urban settlements, are interconnected and linked to neighbouring areas/countries by Development Corridors and Nodal Towns, which together define the Regional Spatial Structure of Darfur. The suitability of

MAP MOF01: MATRIX OF FUNCTIONS; ISOPLETHS MAP
REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



- | | | |
|---|--|---|
| <p>Level of centrality</p> <p>CT Central Town</p> <ul style="list-style-type: none"> 9 8 7 <p>IUC1 Intermediate Urban City 1</p> <ul style="list-style-type: none"> 6 <p>IUC2 Intermediate Urban City 2</p> <ul style="list-style-type: none"> 5 4 3 <p>LUC Local Urban Center</p> <ul style="list-style-type: none"> 2 1 | <p>Infrastructure Connection Network</p> <ul style="list-style-type: none"> National Highway Under Construction National Highway Planned Regional Road Under Construction/Planned Regional Road proposed State road proposed Existing Railway Primary Proposed Railway Secondary Proposed Railway | <ul style="list-style-type: none"> Locality Boundaries State Boundaries International Boundaries |
|---|--|---|

Data Sources: OCHA Sudan, IMWG-CRMA, UN-Habitat and Government of Sudan
Sudan Coordinate System: Geographic Disclaimer: Names and boundaries used in this map are illustrative only and are by no means authoritative or endorsed by the UN

these designated areas is further analysed through a spatial multi-criteria evaluation in a bid to collect additional elements for the preparation of individual State action plans.

In practice, the specific objectives of the RSPSD are as follows:

- **To provide strategic guidance to government authorities for decision-making on where to invest** (especially in terms of basic services/infrastructure) and which priority activities (in terms of job creation, income generation, vocational/technical training, local development, green economy, etc.) should be carried out in Darfur in the short, medium and long terms, in support of the reconstruction process and to sustain an effective, durable recovery process.
- **To guide the subsequent preparation of more detailed spatial and reconstruction plans** based on the designated Economic Development Areas within a functional network of urban settlements, favouring return, reintegration and sustainable spatial development.

THE REGIONAL SPATIAL STRUCTURE OF DARFUR

The preliminary Regional Spatial Structure of Darfur is determined through a combination of the outcomes of the *Matrix of Functions* (MoF) and those of the *State Consultative Workshops* (SCW), identifying designated Economic Development Areas (EDAs) in the first place before looking at the way they are interconnected.

Results of the Matrix of Functions (MoF)

The MoF is based on a questionnaire (checklist) intended to make a full inventory of existing services, activities, equipment and infrastructure – with an economic, administrative, social or cultural function – for each locality. The latter has been chosen as the basic administrative unit of reference for running the MoF analysis at the national level. Since localities in Darfur

typically cover rather large surface areas, and considering that accessibility is a major constraint due to road and security conditions, the functions inventoried were considered as attributes of the main urban centre (or capital town/city) of each locality.

The data collected was fed into an ordered matrix (see Appendix *Table MoF01*), where:

- The first row shows the “*functions*”, ordered from left to right according to the highest number of instances found for each function;
- The first column shows the localities, ordered from top to bottom as per the highest number of instances found for individual functions in each of these localities;
- The second column specifies the Darfur State to which the locality belongs;
- In the table (or matrix) itself, a black cell indicates the presence of the function (NB: *Not* the number of instances found for the function, but whether it is present or not – this is a normalised method), while a white cell indicates its absence in the locality;
- The second-to-last row shows the “*functions’ frequency*”, i.e., the number of times that a given function is present in all the localities;
- The last row shows the “*functions’ weighted value*”, calculated by dividing the conventional total value of 100 by the frequency;
- The first column following the matrix itself (i.e., the black and white cells) shows the total number of existing functions for each locality;
- The next column shows the total population in each locality, as per 2008 Census data;
- The third-to-last column shows the “*total centrality score*” calculated by adding the “*weighted values*” of the functions listed as “present” in the row of the given locality;

- The second-to-last column shows the “*aggregate ranking*” obtained by fixing a level whenever a significant gap appears between one value of the centrality score and the next value;
- The last column shows the grouping and classification of the localities as per the following four typologies: Central Town (or city), Intermediate Urban Centre 1, Intermediate Urban Centre 2, and Local Urban Centre.

It is important to note that the presence or absence of a single function in a row in the MoF can change dramatically the *centrality score* of the relevant settlement, especially in the case of a function that is rare or unique in the overall network of settlements. In such a case, the “*aggregate ranking*”, which is linked to the “*centrality score*”, is more dependent on the *value* of rare or unique functions than on the *number* of functions. This why several common functions which are present in many settlements fail to secure high scores for these, while a set of few unique functions does. Such “inter-playing” and “inter-weighting” among functions is a characteristic of the MoF. Therefore, the “*accuracy*” of collected data has an influence on the quality of the results, the degree of confidence we can have in them and the potential for error in final interpretation.

Consequently, the MoF assesses the relative importance of the role played by a specific settlement based on the presence of rare and/or strategic functions. Meanwhile, demographic aspects are considered as “external and independent variables” and the “*correlation*” between the centrality scores and the total population of a locality is not necessarily linear.

This said, the overall analysis has given due consideration to demographic, social and economic aspects, the presence of IDPs where any, infrastructure, natural resources, etc. Therefore, whenever a highly populated locality showed low centrality scores, the missing functions were examined, providing key information for the preparation of State-specific action plans at a later stage in the process.

TABLE 01: TOTAL CENTRALITY SCORE AND AGGREGATE RANKING BY TYPE OF LOCALITY

Type of Locality	Total Centrality Score	Aggregate Ranking
Central Towns (CT)	533.10 – 480.50	9
	387.10	7
Intermediate Urban Centre 1 (IUC1)	336.80 - 277.30	6
Intermediate Urban Centre 2 (IUC2)	228.70 – 188.80	5
	176.30 – 151.50	4
	141.90 – 124.40	3
Local Urban Centre (LUC)	111.70 – 101.40	2
	93.60 – 59.90	1

Preliminary Results

The spatial analysis of the functional organisation of Darfur's urban settlements as performed through the MoF makes it possible to draw some conclusions and to identify working assumptions about the spatial development of both Darfur as a whole and its five States. Based on the *Total Centrality Score*, a functional hierarchy of human settlements in Darfur can be derived based on the four typologies specified above.

A “prevalent distribution” of functions is then defined for the Darfur region as a whole, taking into account the highest presence of a function for each type of locality. Taking Local Urban Centres (LUCs) as the basic level, an implicit assumption is that in a “regular/standard distribution”, any higher hierarchical level contains the functions of the previous level(s) plus their own specific functions (see Appendix, Table MoF02 for details of which specific functions are prevalent for each type of locality).

Taking the “prevalent distribution” of functions as the standard reference,

one can analyse each locality based on the corresponding prevalent/standard distribution of its own specific typology, and check whether higher-level functions are also present (see Appendix, Table MoF03). For each locality, this table shows: (i) existing functions (black cells); (ii) any missing functions required to meet the “prevalent distribution” standard (red cells); and (iii) the relative presence of higher-level functions (grey cells). Note that, in the case of the highest hierarchical level (Central Town), the prevalent/standard distribution would mean that all the functions are present (only black cells for each row).

From a regional planning perspective, the analysis of this table suggests that some “specific functions” could be added in order to upgrade each type of locality:

From the perspective of improving the urban settlements network of Darfur, this analysis already provides some clear indications, in terms of prioritisation, for any investments required in each locality (see Appendix, Table MoF04). This table shows the existing specific functions

(black cells) and the specific functions to be upgraded (grey cells) for each locality.

Importantly, the MoF also already provides a clear hierarchy of the main urban settlements in Darfur, according to the following typologies:

Central Towns (CT)

Table MoF01 shows the clear predominance of Al Fashir over other localities in Darfur, with a *Total Centrality Score* of 533.10, followed by Niyala (480.50) and Alginaina (387.10). Interestingly, these are the three former provincial capitals of Darfur, and Al Fashir was the central capital when Darfur was a sultanate. Since these three localities include central functions, they can be classified as “Central Towns”.

When looking at the “prevalent distribution” of functions for this type of locality, all 79 functions are present: 70 corresponding to the lower hierarchical levels of localities and nine corresponding to the “Central Town” type. Niyala features the highest number of functions (78), followed by Al Fashir (76) and Alginaina (73).

From a regional planning perspective, Niyala and Al Fashir feature all the “specific functions” required of this hierarchical level, while Alginaina needs two additional functions, namely: (i) *Recreational halls*, and (ii) a *Special Criminal Court*.

Intermediate Urban Centre 1 (IUC1)

Aldain and Zalingay rank lower than “Central Towns” as their *Total Centrality Scores* are 336.80 and 277.30 respectively. Therefore, these two localities are considered as *Intermediate Urban Centres 1*. The “prevalent distribution” for this type of locality involves 70 functions, out of which 56 correspond to the lower hierarchical levels and 14 correspond to the IUC1 level. Aldain features 72 functions, and Zalingay only 66.

From a regional planning perspective, both localities need to upgrade educational institutions (*vocational schools and post-secondary college*) and recreational facilities (*recreational halls*). Zalingay must also upgrade judiciary services.

TABLE 02: NUMBER OF FUNCTIONS PER TYPE OF LOCALITY

Type of Locality	Number of Functions
Central Towns (CT)	70 + 9 = 79
Intermediate Urban Centre 1 (IUC1)	56 + 14 = 70
Intermediate Urban Centre 2 (IUC2)	39 + 17 = 56
Local Urban Centre (LUC)	39

TABLE 03: SPECIFIC FUNCTIONS PER TYPE OF LOCALITY

Type of Locality	Specific Functions
<i>Intermediate Urban Centre 1 (IUC1)</i>	Vocational school Post-secondary college Public regional hospital Manufacturing plant Recreational hall TV broadcasting station Special criminal court Architect
<i>Intermediate Urban Centre 2 (IUC2)</i>	Hotel and accommodation National highway Court of appeal Dental surgery Building contractor Post office Radio broadcasting station
<i>Local Urban Centre (LUC):</i>	Electricity company Bus station Pharmacy Crop and livestock market Cultural centre Welfare services Customary court Cooperative union Electrician Plumber

Intermediate Urban Centre 2 (IUC2)

In total, 17 localities in Darfur are classified as *Intermediate Urban Centres 2 (IUC2)*, with *Total Centrality Scores* ranging between 124.40 and 228.70. The “*prevalent distribution*” proposed for this type of locality involves 56 functions, of which 39 belonging to lower levels and 17 to this IUC2 level.

When analysing the “*specific functions*” for the sake of an improved urban settlements network in Darfur, there appears a need

to upgrade public utilities and facilities (*post office, radio broadcasting station, electricity company and national highway*) in almost all localities, including some professional services (*plumbers and dental surgeries*), commercial functions (*hotels/accommodation and pharmacies*) as well as recreational facilities (*cultural centres*).

Local Urban Centres (LUC)

Forty localities in Darfur are classified as *Local Urban Centres (LUC)*, with *Total*

Centrality Scores ranging between 59.90 and 111.70. The “*prevalent distribution*” proposed for this type of locality involves 39 functions.

These localities belong to the lowest ranking in the overall hierarchy and should be upgraded as follows: (i) *cultural centres* are needed in almost all localities (34 out of 40); (ii) an *electricity company* would be required in 27 out of 40, along with (iii) professional services (*electricians and plumbers*) and (iv) *pharmacies and cooperative unions*.

The cartographic representation of the nine levels of aggregate ranking as based on isopleths⁹⁶ for the whole Darfur region makes it possible to visualise the degree of “*territorial influence*” (where any) of each Locality over neighbouring localities and to identify “*clusters*” of Localities (or areas of concentration of urban settlements) which are strongly interconnected, as well as other types of spatial linkages. Five main clusters of localities displaying high degrees of interdependence can be identified around the capitals of the States of Darfur (see *Map MOF01*).

North Darfur State

A tri-polar cluster centred on **Al Fashir** and including **Kotum** and **Milleet**, is located in the middle of the State. It shows the convergence on Al Fashir of the northwest-southeast axis El Tina-Karnoi-Umbaro-Kotum-Al Fashir, and of the north-south axis Almalha-Milleet-Al Fashir. Interestingly, this cluster is rather isolated from the others detailed below, suggesting how important it is to strengthen the links between Al Fashir and the rest of Darfur.

In a depressed area in the easternmost part of North Darfur is an isolated bipolar set, **Omkaddadah – Altowaisha**.

Importantly, the Localities of **Saraf-Omra** and **Kebkabiya**, in North Darfur, provide another strong cluster that appears to be mainly connected to Central Darfur (see Central Darfur State section).

NORTH DARFUR STATE

Locality	Population (2008)	Type of Locality	Aggregate Ranking
Al Fashir	530,633	Central Town	9
Kotum	158,625	Intermediate Urban Centre 2	5
Milleet	142,986	Intermediate Urban Centre 2	3

Locality	Population (2008)	Type of Locality	Aggregate Ranking
Omkaddadah	98,312	Intermediate Urban Centre 2	5
Altowaisha	65,133	Intermediate Urban Centre 2	3

⁹⁶ NB: In meteorology, an isopleth indicates a geographical line connecting points showing an equal level of incidence of a specific meteorological feature. In the case of the MOF, the term is used to indicate a geographical line representing a specific aggregate ranking.

South Darfur State

Another tri-polar cluster, this time centred on **Niyala** and including **Kass** and **Bilail**, is located in the northern part of the State and along the national highway. This cluster is well connected to the neighbouring clusters of East and Central Darfur, reinforcing the strategic importance of Niyala in the Darfur economy.

Another significant cluster is worthy of note in South Darfur: the bipolar set comprised of **Id-Alfursa** and **Rihaid-Albirdi**, which is located south of Niyala along the northeast-southwest axis Id-Alfursa - Rihaid-Albirdi - Omdafoog - Central African Republic.

West Darfur State

The capital of this State, **Alginaina**, appears as an isolated settlement on Map MOF01. Although Alginaina is classified as a Central Town, MoF spatial analysis shows that it has no “positive” influence over any of its surrounding localities. The latter all belong to the lowest *Aggregate Ranking* and are classified as *Local Urban Centres*. The relative isolation of Alginaina, which otherwise has close connections to Chad, must be strategically addressed if West Darfur’s role in the region’s economy is to be enhanced.

Central Darfur State

In this particular State one important cluster centred on **Zalingay** and spreading up to North Darfur includes **Garsilah**, **Saraf-Omra** and **Kebkabiya**. The latter two localities are in North Darfur but have good road connections to Zalingay. Meanwhile Saraf-Omra comes second in terms of *Aggregate Ranking*, with a score of 5.

East Darfur State

The most populated cluster of localities in East Darfur is centred on **Aldiain** and includes **Shiairyia**, **Abu Matariq**, **Abu-Jabra** and **Adeela**. This represents a fairly balanced pattern of spatial development, with the added privilege of the railway connecting Darfur to Khartoum.

Locality	Population (2008)	Type of Locality	Aggregate Ranking
Niyala	493,732	Central Town	9
Kass	205,857	Intermediate Urban Centre 2	5
Bilail	86,310	Intermediate Urban Centre 2	5

Locality	Population (2008)	Type of Locality	Aggregate Ranking
Id-Alfursa	216,933	Intermediate Urban Centre 2	4
Rihaid-Albirdi	205,392	Intermediate Urban Centre 2	3

Locality	Population (2008)	Type of Locality	Aggregate Ranking
Alginaina	286,681	Central Town	7

Locality	Population (2008)	Type of Locality	Aggregate Ranking
Zalingay	108,631	Intermediate Urban Centre 1	6
Saraf-Omra	213,783	Intermediate Urban Centre 2	5
Wadi Salih (Garsilah)	196,771	Intermediate Urban Centre 2	3
Kebkabiya	201,497	Intermediate Urban Centre 2	3

Locality	Population (2008)	Type of Locality	Aggregate Ranking
Aldiain	214,027	Intermediate Urban Centre 1	6
Shiairyia	64,208	Intermediate Urban Centre 2	5
Abu-Jabra	107,014	Intermediate Urban Centre 2	4
Bahr Alarab (<i>Abu Matariq</i>)	160,521	Intermediate Urban Centre 2	4
Adeela	64,280	Intermediate Urban Centre 2	3

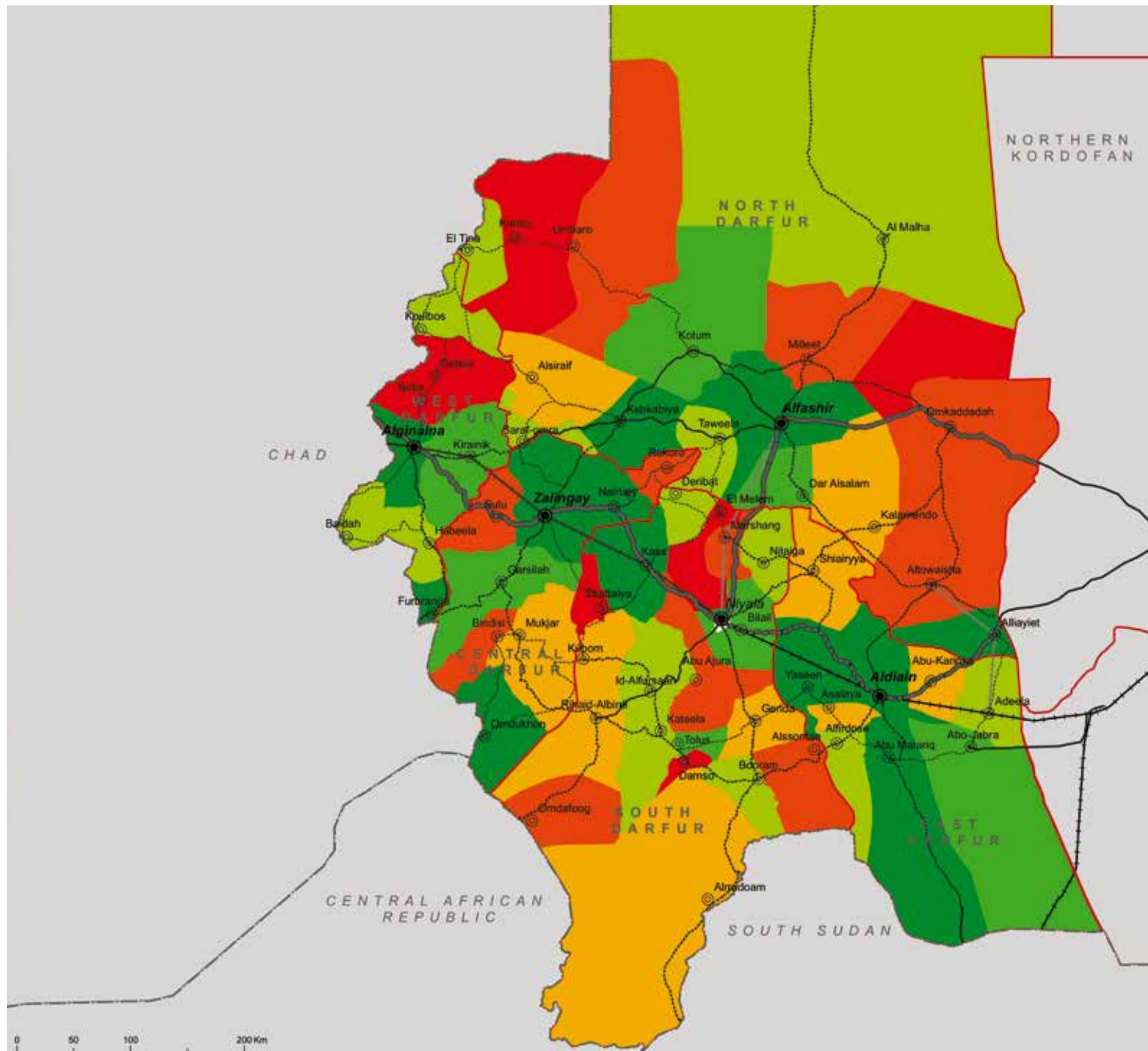
Results of the State Consultative Workshops

As part of the preparation of the RSPSD, five *State Consultative Workshops* were organised in Al Fashir (21 April 2013), Niyala (23 April 2013), Alginaina (26 June 2013), Zalingay (30 July 2013) and Aldiain (18 November 2013). These very important consultations were attended by high-level government officials, such as the Governor or Deputy Governor of the relevant State (*Wali*), State Ministers of Physical Planning and Public Utilities, other State Ministries, local authorities (in particular the Locality Administrators), representatives from academia, research institutions, local communities, pastoralists, IDPs, Native Administration and the private sector.

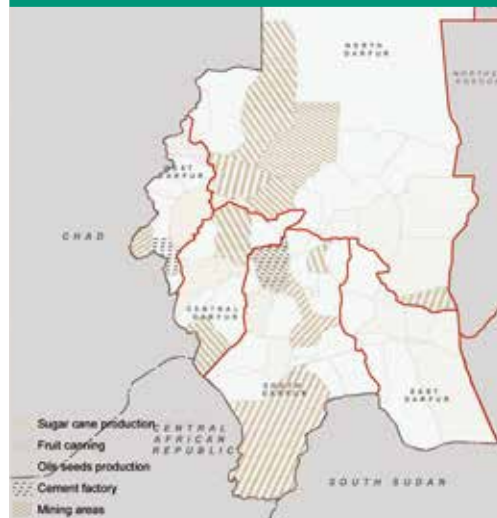
The following main issues to be addressed were identified over the course of the workshops:

- Poor coordination and over-compartmentalisation among government institutions, even among units in the same Ministry, with an apparent lack of clarity as to respective roles, mandates and responsibilities; general lack of institutional capacity.
 - Lack of reliable and well-ordered information regarding land and planning issues.
 - No formal or legal mechanisms yet in place for compensation of returnees through land restitution or equivalent monies or, short of that, resorting to customary rules. In addition, traditional customary dispute resolution and reconciliation mechanisms have deteriorated, leading to inter-tribal conflict.
 - Weak governance structures for resource management and conflict resolution.
 - More widespread environmental degradation, especially due to IDP lifestyles, resulting in alarming tree cutting.
- The most important recommendations from the consultations can be summarised as follows:
- An integrated and participatory approach should be adopted for any spatial planning process, with a view to enhance planning consistency and facilitating implementation.
 - The development and planning of villages and medium/small towns must be prioritised, based on current potential – ensuring provision of basic services and infrastructure (health, education, water, roads, electricity, food security, etc.) to mitigate on-going massive migration to larger urban centres, all of this as part of a regional planning strategy. In parallel, planning must be improved in larger towns.
 - It is important to achieve more balanced development of localities, based on specific human and natural potential and respective comparative advantage, in order to ensure stronger rural-urban linkages and taking into account return villages and nomads.
 - Investment and development projects should be preceded by proper studies on their potential environmental, economic and social impact, including conflict-sensitivity aspects.
 - There is an urgent need to establish improved and transparent administrative and legal frameworks and build adequate capacities at all levels for land and natural resources management.
 - Existing datasets at the locality and State levels must be reviewed and updated, with special regard to key sectors/ aspects such as population, education, health, water, agriculture, animal husbandry, grasslands and minerals.
 - A policy promoting the use of affordable and environmental-friendly building materials and construction technologies (including low-cost stabilised soil blocks) should be adopted as part of efforts to preserve Darfur's fragile ecosystem. In the meantime, it is necessary to identify alternative livelihood options for those who depend on activities which are harmful to the environment, such as the production of fire bricks.
 - State-wide consultations are needed, but the population and authorities should also be involved in this planning process at national level (political endorsement of the RSPSD) and at locality level (more detailed spatial plans).
 - Proper coordination mechanisms must be established for State-wide dissemination and implementation of the RSPSD.
 - Livestock routes must be clearly demarcated and complied with; tribal groups must be provided with basic and veterinary services, together with income generation opportunities and mechanisms to mitigate frictions between pastoralists, farmers and displaced people.
 - The issue of livelihoods must be addressed as an integral part of sound regional planning.
- Moreover, over the course of the five workshops, group discussions were organised to identify the specific potential of each locality from a socioeconomic perspective, and each was ranked accordingly in each of the five States.

MAP SCW01: STATE CONSULTATIVE WORKSHOP: RANKING RESULTS
REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



MAIN POTENTIAL ECONOMIC ACTIVITIES PROPOSED



State Consultative Workshops Ranking

- R1
- R2
- R3
- R4
- R5
- R0

Type of settlements

- State headquarters
- Locality headquarters

Infrastructure Connection Network

- National Highway Under Construction
- - - National Highway Planned
- · — Regional Road Under Construction or Planned
- · - · - Regional Road Proposed
- · - · - State Road Proposed
- + — Existing Railway
- + · — Primary Proposed Railway
- + · · — Secondary Proposed Railway

Locality Boundaries

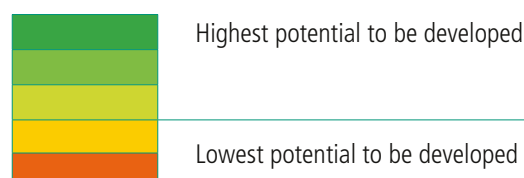
- State Boundaries
- International Boundaries

Data Sources: OCHA Sudan, IMWG-CRMA, UN-Habitat and Government of Sudan
Sudan Coordinate System: Geographic
Disclaimer: Names and boundaries used in this map are illustrative only and are by no means authoritative or endorsed by the UN

STATE	LOCALITY	CAPITAL/TOWN	POPULATION	RANKING	RATIONALE FOR SELECTION
NORTH DARFUR	Kebkabiya	Kebkabiya	201,497	1	Surface water (wadis), vegetable, pulse (broad beans) and fruit production, gold mining, trade, livestock,
	Alliyiet	Alliyiet	81,064	1	Underground and surface water, oil seeds processing, livestock, strategic location, gum arabic, mining
	Kotum	Kotum	158,625	2	Horticulture production, uranium mining, surface water, tourism, road under construction
	Dar Alsalam	Dar Alsalam	138,676	2	Proposed agricultural projects at Abu Hamara and Sag El Neiam gum arabic, oil seeds
	Saraf-omra	Saraf-omra	213,783	3	Livestock market, pulse, sugar cane, vegetables
	Almaha	Almaha	244,105	3	Significant groundwater reserve, mining, atroon, tourism, border trade
	El Tina	El Tina	81,395	3	Cross-border trade, livestock
	Taweela	Taweela	-	3	Tobacco production, vegetables, dura and millet
	Alsiraif	Alsiraif	165,254	4	Gold mining, livestock, agriculture production
	Kalamendo	Kalamendo	76,461	4	Gum arabic, livestock
	Milleet	Milleet	142,986	5	Commercial centre, groundwater
	Omkaddadah	Omkaddadah	98,312	5	National highway, rangeland
	Altowaisha	Altowaisha	65,133	5	Gum arabic, oil seeds, livestock
	Dar Alsalam	Shingil Tobai	-	5	Cross-roads, abundant groundwater
	Umbaro	Umbaro	72,135	5	Groundwater, gold mining
	Alkoama	Alkoama	72,843	-	
Karnoi	Karnoi	-	-		

STATE	LOCALITY	CAPITAL/TOWN	POPULATION	RANKING	RATIONALE FOR SELECTION	
SOUTH DARFUR	Kass	Kass	205,857	1	Population density (multi-ethnic), IDPs , national paved highway, good climate (Mediterranean), fertile agricultural land, minerals, potential for cement factory	
	Tolus	Tolus	258,206	2	High population density, forests, agriculture and animal resources, underground and surface water, veterinary clinic	
	Bilail	Bilail	86,310	2	Railway, national road, surface water, irrigated agriculture, largest IDP camp, cross-roads, electricity	
	Id-Alfursaana	Id-Alfursaana	216,933	3	Water, graze land, location, population, national highway, accessible, trades	
	Booram	Booram	141,516	3	Fertile land, water, range land, gum arabic, veterinary clinic	
	Nitaiga	Nitaiga	154,773	3	Gum arabic, animal wealth, agricultural production	
	Jabal-Marra East	Deribat	117,444	3	Agricultural production, citrus, tourism, minerals	
	Kateela	Kateela	11,953	3	Oil seeds, livestock, underground and surface water, population density	
	Rihaid-Albirdi	Rihaid-Albirdi	205,392	4	Trade, accessible, livestock, national highway	
	Kubom	Kubom	188,272	4	Forests, honey production, herbs, sugar cane	
	Alrradoam	Alrradoam	134,043	4	Forests, trade (South-North Sudan), mining, minerals (brass)	
	Gerida	Gerida	92,577	4	Groundwater and agriculture	
	Alssontaa	Alssontaa	102,162	5	Forests, agriculture along the border with South Sudan	
	El Salam	Abo Ajura	94,882	5	Population, minerals	
	Omdafoog	Omdafoog	60,631	5	Border trade, fishing	
	Marshang	Marshang	42,933	5	Water, gold mining, vegetables	
		Al Wehda	Al Wehda	93,306	–	
		Shattaiya	Shattaiya	46,706	–	
	Damso	Damso	129,247	–		
WEST DARFUR	Furbranga	Foro Baranga	98,771	1	Abundant livestock (largest market), significant trade centre, border town	
	Kirainik	Kirainik	112,504	2	Suitable for sugar cane production, agricultural land for fruit and crops , groundnuts	
		Mornei	37,864	2	National/continental highway, sugar cane and vegetables (onion), cross-roads	
	Koulbos	Kulbus	93,034	3	Fruit production, potential for canning industry, livestock	
	Baidah	Maistray	46,278	3	Oilseed production, groundnuts	
	Habeela	Habila	59,910	3	Potential for cement production, agriculture; once the most reputed agricultural scheme in the State	
	Baidah	Beida	80,063	4	Border town, trade, livestock	
		Arara	15,603	4	Lime production, gold mining, agriculture	
	Alginaina	Tandalti	46,278	4	Watermelon production, border town, minerals	
	Habeela	Gobaiy	20,514	5	Traditional vegetable oil production	
	Sirba	Abu-Jidad	30,681	5	Livestock (dairy)	
Sirba		99,014	–			
	Jabal Moon	Seleia	45,733	–		

STATE	LOCALITY	CAPITAL/TOWN	POPULATION	RANKING	RATIONALE FOR SELECTION
CENTRAL DARFUR	Zalingay	Zalingei	108,631	1	Central location, State capital, large population, airstrip, army, police, university, large market, national paved highway, mining, handicraft, , agriculture
	Omdukhon	Omdukhon	90,099	1	Border town, cross-border trade, customs office, oilseed factories, , State's largest livestock market, gold mining
	Nairtaty	Nairtaty	14,873	1	Capital of locality, largest market for fruit and vegetables, for fruit canning industries for export, national paved highway, potential for tourism
	Wadi-Salih	Garsilla	196,771	2	2 nd largest town in State, rich in agriculture and livestock, large grazing land, forests
	Mukjar	Mukjar	108,860	4	Agricultural area, hospital, paved road
	Zalingay	Omshalaya	-	5	Agriculture and livestock, stable/secure conditions
	Wadi-Salih	Omkhair	-	5	Proposed for sugar factory, fish farming, water harvesting
	Azoom	Sulu	65,879	5	National highway, agriculture and livestock
	Bindisi	Bindisi	54,431	5	Forests, agriculture and trade, honey production
	Rokoro	Rokoro	9,916	5	
EAST DARFUR	Aldiain	Aldiain	214,027	1	Central town, relatively high population density, railway, airport, oil factories, regional road
	Bahr-Alarab	Abu Matariq	160,521	1	Border locality, livestock, surface and underground water, forests, agricultural land
	Yaseen	Yaseen	192,625	1	Railway, regional road, surface water, trade, agriculture and livestock
	Abu-Jabra	Abu-Jabra	107,014	2	Oil, rangeland and livestock
	Alfirdose	Alfirdose	170,180	3	Agriculture, livestock, trade, groundwater
	Adeela	Adeela	64,280	3	Livestock, railway, range land, oil
	Shiairyya	Shiairyya	64,208	4	Agriculture, livestock
	Asalaya	Asalaya	85,611	4	Large groundwater reserve
Abu-Karinka	Abu-Karinka	74,910	4	Agriculture, livestock, oil	



Deriving the Regional Spatial Structure of Darfur

When the results of the matrix of functions (and especially the clusters of settlements described above) are combined with the outcomes of the State consultative workshops (checking whether the localities in the clusters resulting from the MoF are considered priority areas or not), one can determine the location of the Economic Development Areas (EDAs) composing the Regional Spatial Structure of Darfur. Investing in these areas could maximise benefits for local populations and beyond, depending on the potential of each specific EDA.

The suitability of the proposed EDAs for Darfur (either primary or secondary in terms of prioritisation), is also analysed from the angle of the six thematic spatial challenges and opportunities that have been defined earlier (i.e., conflict, the environment, demography and urbanisation, governance and institutions, infrastructure and basic services, and economic recovery and development). The delineation of, and rationale behind, the EDAs represent the basic tenets of the Regional Spatial Structure of Darfur, from which other structural elements (Development Corridors and Nodal Towns) can be derived, as will be explained later.

Economic Development Areas (EDAs)

These clusters of urban settlements are priority areas for capital expenditure on economic, social and basic services at State level. Each EDA comprises two, three or four cities or towns in each State (being the capital of the State or of a locality), which can support and complement each other in terms of socio-economic functions and road connectivity. They represent areas of high population density (often due to massive IDP presence), with significant potential for economic development and job creation, and which are already endowed with adequate infrastructural assets.

Two different types of EDAs have been defined in terms of priority:

- a. Six **Primary Economic Development Areas** are proposed: one for each State, except for South Darfur which has two. Strategically, no cross-State EDAs are proposed, in order to facilitate the development and future implementation of State Action Plans. These areas include the capital of each State (except for the EDA located in the central part of South Darfur) and one, two or three neighbouring local capitals, which altogether create a cluster of urban settlements that can work cooperatively and will contribute to the future socioeconomic development of the State. The following primary EDAs have been identified for each State:

parts of these two States). Despite featuring adequate population densities and economic potentials, it is proposed to develop these areas only after the Primary EDAs. The main reason is that significant amounts of capital expenditure should not be thinly spread out over many locations at one and the same time (i.e., a phasing pattern is recommended), another reason being the current situation of these areas in terms of on-going conflict and security.

Development Corridors (DCs)

Once the EDAs have been determined, it is important to analyse the linkages between them and with the areas/countries surrounding Darfur. The Development Corridors (DCs) that have been identified are built along the main roads or

PRIMARY ECONOMIC DEVELOPMENT AREAS

State	Name of Locality
North Darfur	Alfashir, Kotum, Milleet and Taweela
South Darfur	Niyala, Bilail and Kass
	Rihaid-Albirdi, Id Alfursaana, Kateela and Tulus
West Darfur	Alginaina, Kirainik and Habeela
Central Darfur	Zalingay, Garsilah and Nairtity
East Darfur	Aldiain, Abu Matariq, Abu-Jabra and Adeela

- b. Three **Secondary Economic Development Areas** are identified: two in North Darfur and one straddling South and East Darfur (this is single cross-State EDA which will contribute to development in the northernmost

transportation axes (both existing and proposed) and will constitute preferential areas for major infrastructure investments at the regional level, with coordination at State level. Two different types of DCs have been defined in terms of prioritisation:

SECONDARY ECONOMIC DEVELOPMENT AREAS

State	Name of locality
North Darfur	Saraf-Omra and Kebkabiya
	Alliyiet and Altowaisha
South Darfur - East Darfur	Marshang, Nitaiga and Shiraiyya

- a. Three **Primary Development Corridors** are proposed, along main existing transportation axes: (i) a north-south corridor linking the capitals of North and South Darfur, to Libya (North) and the Central African Republic (South); (ii) an east-west corridor linking the capitals of North and West Darfur, to Northern Kordofan (East) and Chad (West); and (iii) the southeast-west corridor linking the capitals of East, South, Central and West Darfur, to Northern Kordofan (East) and Chad (West). At a regional scale, these primary DCs will support the prioritisation of infrastructural investments –with the benefits also shared by any primary and secondary towns located along the corridors – facilitating intra-regional, national and international transportation connectivity and trade.
- b. Two **Secondary Development Corridors** are proposed for strategic reinforcement of cross-State connectivity between East, South, Central and West Darfur, along future regional routes, as follows: (i) a north-south corridor linking Chad (north) through Al Tina to the capital of Central Darfur (Zalingay) and the Central African Republic (south); and (ii) another, east-west corridor connect the capital of East Darfur with the Central African Republic (south), across the 2nd Primary EDA located in the central part of South Darfur.

Nodal Towns (NTs)

In addition to EDAs and DCs, it was also important to designate a number of Nodal Towns (NTs) – the main towns which, in localities, are located either in strategic positions between EDAs (i.e., by definition they are not part of Economic Development Areas), or on the outermost reaches of the development corridor network. On top of

PRIMARY DEVELOPMENT CORRIDORS

Corridor	State	Name of locality
North-South	North Darfur	Almalha – Milleet - Alfashir
	South Darfur	Marshang – Niyala – Id-Alfurssan – Rihaid-Albirdi - Omdafoog
East -West	North Darfur	Omkaddadah – Alfashir – Taweela – Kebkabiya – Saraf-Omra
	West Darfur	Kirainik - Alginaina
Southeast –West	North Darfur	Alliyat
	East Darfur	Aldiain
	South Darfur	Bilail – Niyala – Kass
	Central Darfur	Nairtaty – Zalingay
	West Darfur	Alginaina

SECONDARY DEVELOPMENT CORRIDORS

Corridor	State	Name of locality
North-South	North Darfur	El Tina – Alsiraif – Saraf-Omra
	Central Darfur	Zalingay – Garsilah – Mukjar - Omdafoog
East –West	East Darfur	Aldiain – Alfirmose
	South Darfur	Alsoonta - Buram – Tolus – Kateela – Rihaid-Albirdi
	Central Darfur	Omdukhon

NODAL TOWNS

State	Name of Nodal Town
North Darfur	Almalha, Omkaddadah and El Tina
South Darfur	Booram and Omdafoog
West Darfur	Baidah and Furbranga
Central Darfur	Omdukhon
East Darfur	Bahr Alarab (Abu Matariq), lying inside the Primary EDA of East Darfur

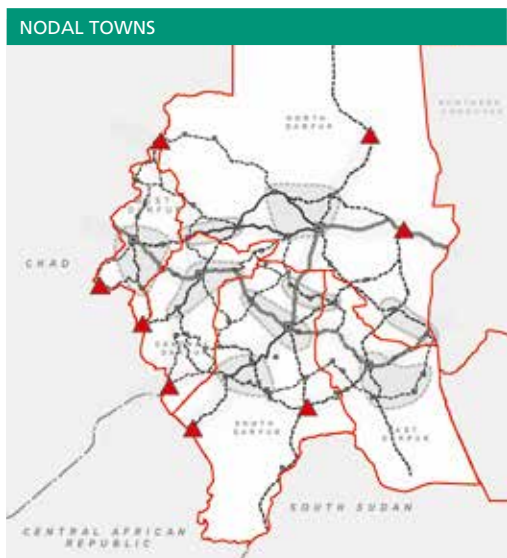
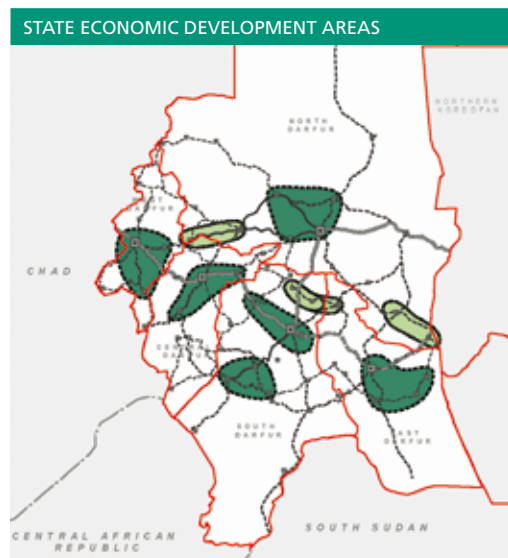
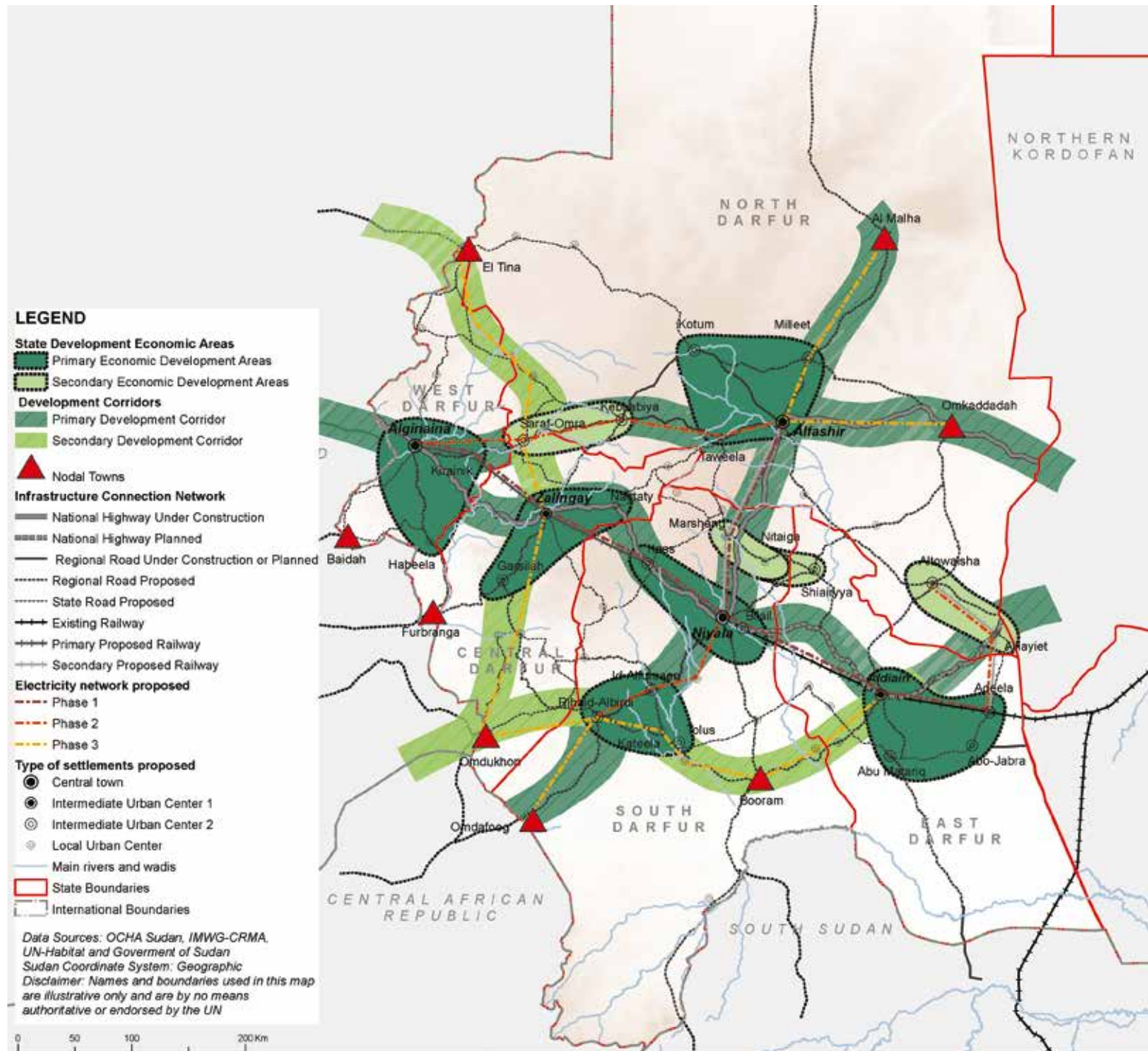
specific location, the NTs were also selected based on their economic and investment potential.

These NTs are to perform special functions to improve the socio-economic performance of the proposed corridors, providing specific services, logistic facilities

and livelihood options for their population. At the same time, they are to strengthen the trading and economic relations of Darfur with the neighbouring areas or countries; this is because nodal towns are typically located along the borders and can act as natural international or national gateways for the region.

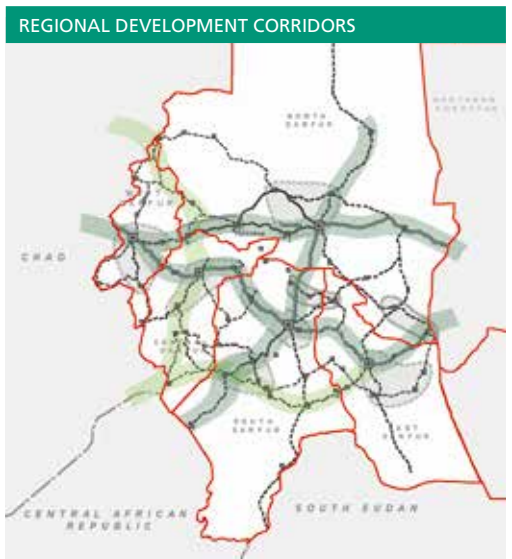
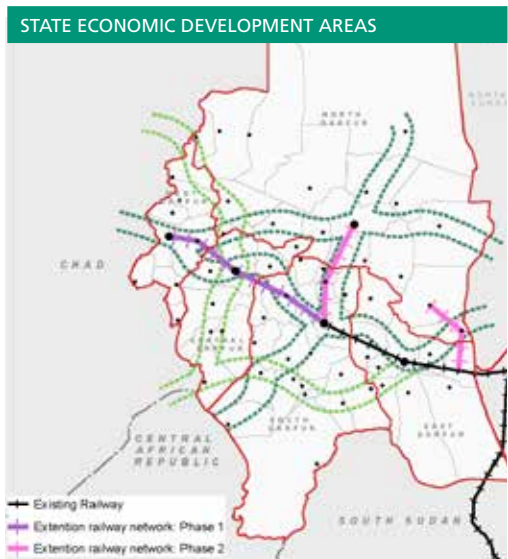
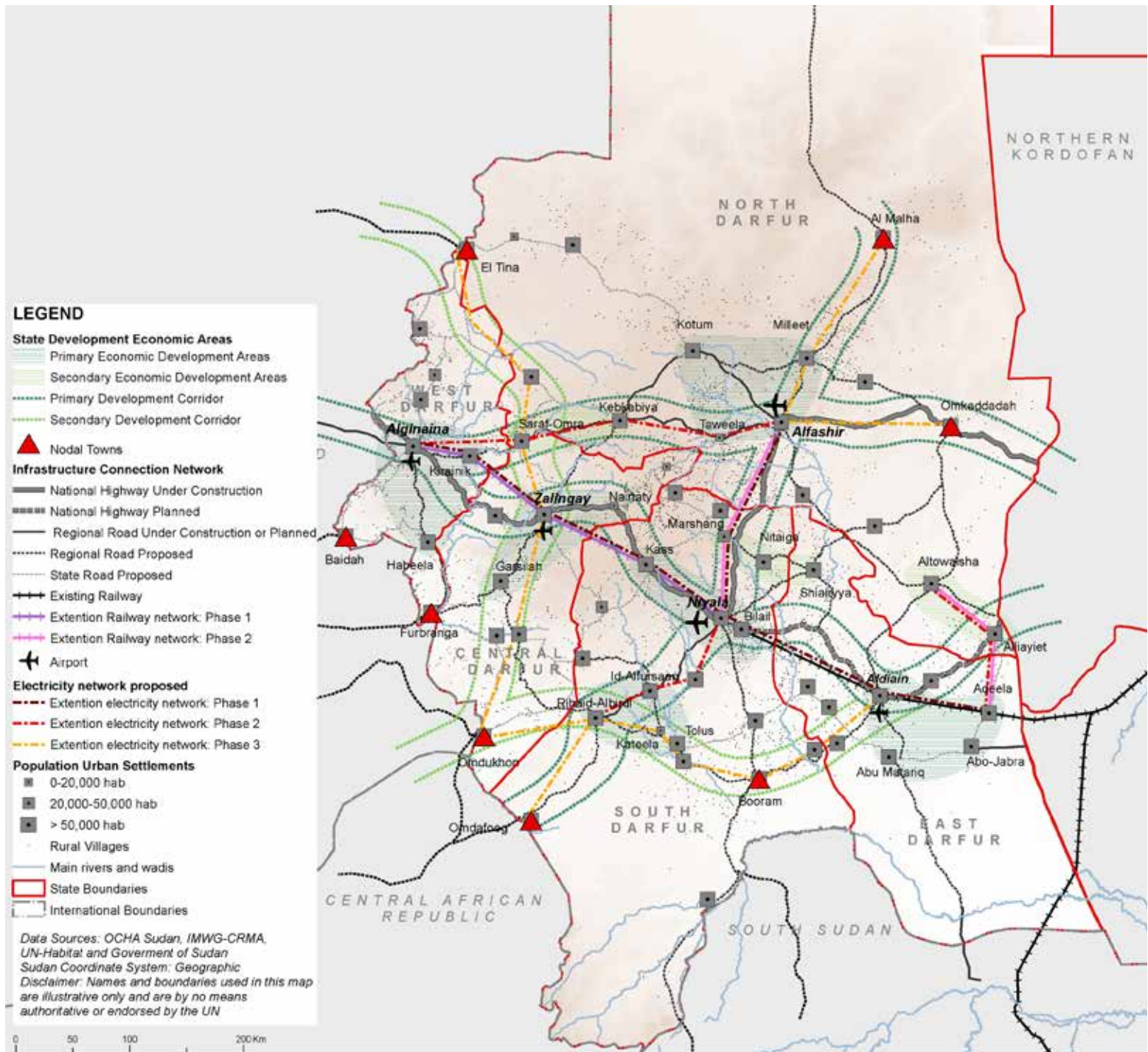
MAP RSPS01: PROPOSED REGIONAL SPATIAL STRUCTURE

REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



MAP RSPS02: PROPOSED REGIONAL INFRASTRUCTURE NETWORKS

REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



SPATIAL MULTI-CRITERIA EVALUATION (SMCE)

As described in the methodology, the analysis of each of the Economic Development Areas will subsequently be refined using the SMCE. The analysis will concentrate on the specific data sets attached to the five key themes, focusing on their suitability for urban development and IDP return and/or reintegration. The five key themes are as follows: (i) infrastructure (pre-existing, under construction or planned); (ii) healthcare (curative and preventive); (iii) education (students/population per school); (iv) water, sanitation and hygiene (WASH - water availability and quality, available sanitation

facilities/infrastructure); and (v) economic activities (existing and potential).

The overall suitability for each of the EDAs is ranked in four classes⁹⁷:

For each theme, the following data sets are generated:

- **Rationale of the evaluation:** explaining how the evaluation is configured and which indicators are used. The indicators measure performance against specified objectives or criteria.
- **Data sources and quality:** description of the available data, including reliability and quality.

- **Self-explanatory criteria tree:** indicators are built into criteria trees according to the objectives against which they measure the degree of suitability. The main branch of the tree is the overall objective of the evaluation for a particular theme, further subdivided into sub-branches/sub-objectives.

- **Table of results:** for each locality belonging to an Economic Development Area.

- **Thematic map:** showing the extent to which localities in Darfur meet the specified objective for each theme.

Very low suitability	The lower level of suitability: existing conditions do not fulfil any of the specified indicators defined (utility score on the map: 0 to 25).
Low suitability	Existing conditions fulfil only one of the specified indicators (utility score on the map: 25-50).
Moderate suitability	Existing conditions fulfil some of the specified indicators (utility score in the map: 50-75).
Suitable	Existing conditions fulfil most of the specified indicators (utility score on the map: 75-100).

⁹⁷ These suitability classes can also be found in the maps. However, maps have each been assigned a different colour per theme. For comparison between themes, the colour scheme above was used in the tables of results.

Education suitability

Rationale of the evaluation structure

Limited data availability has constrained the scope of this evaluation (if compared with healthcare, for example) to the existing capacity in terms of students per school and population per school. Other valuable measures of the quality of education include the number of students per teacher, skills of teaching staff, or gender aspects (e.g., enrolment of boys and girls), but were not available for all the localities.

Three indicators were used to evaluate the suitability of education in each locality, according to three objectives:

- i. Areas should provide effective schooling and avoid overloading education infrastructure:
Indicator and criterion: 400 students per school are required, whereas more

is worse and fewer is better (*National Norm, Ministry of Education Sudan*).

- ii. Urban areas should provide adequate numbers of education facilities:
Indicator and criterion: 6,000 inhabitants per school are required for urban areas, whereas fewer is better and more is worse (*National Norm, Ministry of Education, Sudan*).
- iii. Rural areas should provide adequate numbers of education facilities:
Indicator and criterion: 3,000 inhabitants per school are required for rural areas, whereas fewer is better and more is worse (*National Norm, Ministry of Education, Sudan*).

For more detailed understanding of the prioritisation of the various objectives and criteria, please refer to the criteria tree in *Appendix 3*.

Data sources and quality

The number of schools in each locality is based on the data provided by the Ministry of Education, which is fairly consistent. However, the number of students per school originates from different sources: the Ministry of Education for North Darfur (2012) and West Darfur (2010), and a survey conducted by UNICEF in 2012 for Central, South and East Darfur; this data profusion can introduce a higher degree of uncertainty.

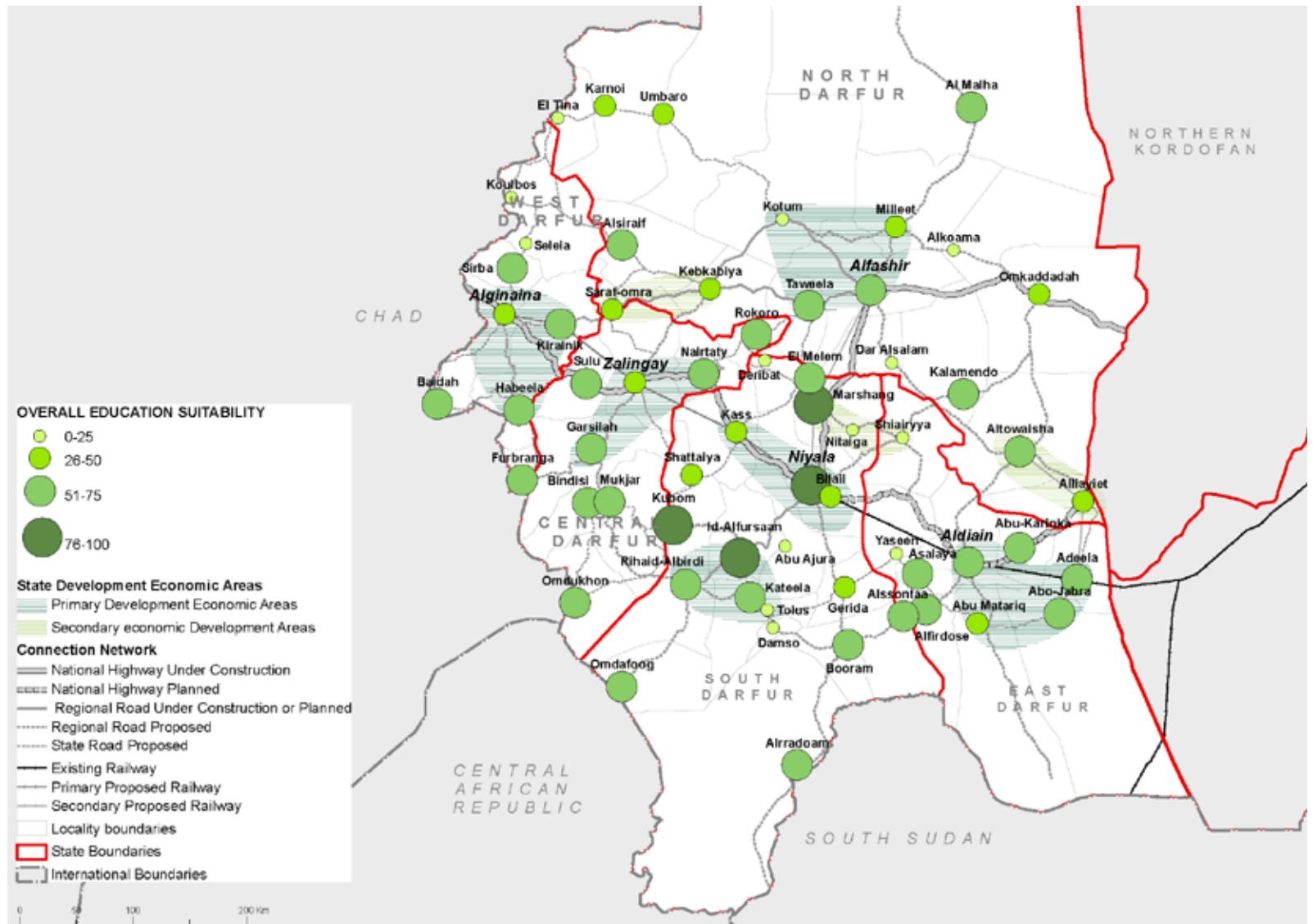
Student enrolment data is available for North Darfur, but still lacking for the other States. Given the region-wide scope of this analysis, enrolment data could not be used. Practically, this means that this thematic evaluation leaves substantial room for improvement.

TABLE OF RESULTS — EDUCATION SUITABILITY

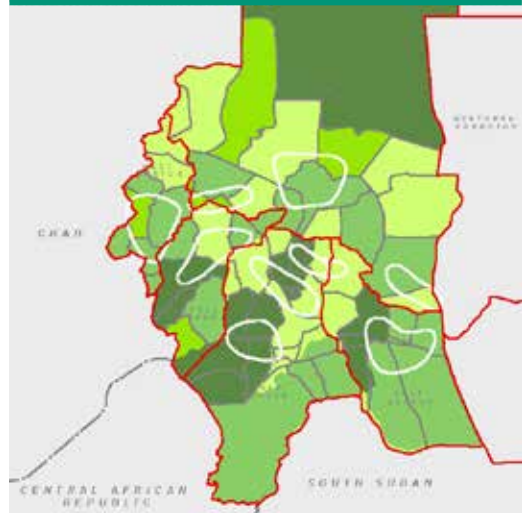
State	Primary EDA	Results
North Darfur	Al Fashir, Kotum, Taweela, Milleet	Low suitability , particularly Milleet and Kotum which would benefit from fewer students per school.
South Darfur	Niyala, Bilail, Kass	Low suitability , although Niyala has a good student-per-school ratio, the other two localities could be improved.
	Id-Alfursaana, Rihaid-Albirdi, Kateela, Tolus	Suitable , according to the standards of the Ministry of Education.
West Darfur	Alginaina, Kirainik, Habeela	Moderate suitability . Algeneina could improve with fewer students per school.
Central Darfur	Zalingay, Nairtaty, Garsilah	Moderate suitability , with differences across localities (e.g., Zalingay could benefit from lower numbers of students per school).
East Darfur	Aldiain, Abu Matariq, Adeela, Abu-Jabra	Moderate suitability .
State	Secondary EDA	Results
North Darfur	Saraf-Omra and Kebkabiya	Low suitability . Saraf-Omra and Kebkabiya could improve with lower numbers of students per school.
	Alliyiet and Altowaisha	Low suitability . All localities would benefit from lower numbers of students per school.
South & East Darfur	Marshang, Nitaiga and Shiraiyya	Low suitability . This EDA is imbalanced, with Marshang meeting the standards while Nitaiga needs considerable improvement.

MAP SMCE01: EDUCATION

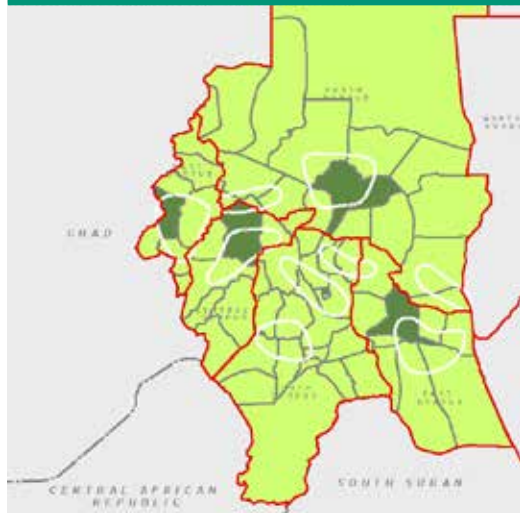
REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



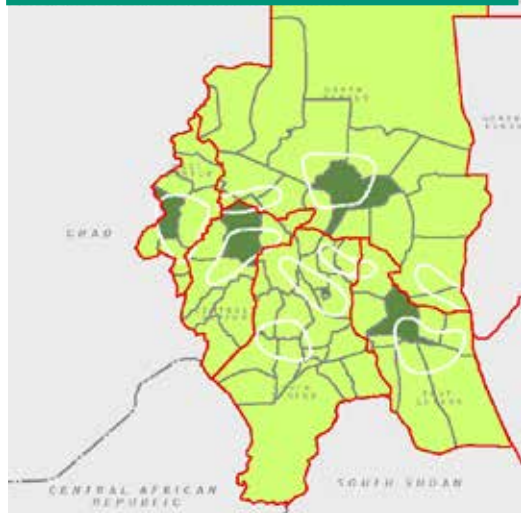
STUDENTS PER SCHOOL UTILITY



INHABITANTS URBAN SCHOOL UTILITY



INHABITANTS RURAL SCHOOL UTILITY



Healthcare suitability

The rationale behind the evaluation structure

Five sub-objectives are used to measure the suitability of each locality in terms of curative and preventive healthcare. In the absence of official norms and standards (criteria) for the interpretation of these indicators, the team behind this report has devised its own, as follows:

- Areas should offer adequate healthcare infrastructure in the form of functional healthcare centres.

Indicators and criteria:

- 100,000 - 250,000 people per functioning Rural Hospital (RH) is required, fewer being better and more being worse (*National Norm: National Health Policy, 2007 - Federal Ministry of Health, Sudan*).
- 1 Rural Hospital per locality is required; more is better and fewer is worse.
- 10,000 - 20,000 people per functional Primary Healthcare Centre (PHCC) in a single locality is required; fewer is better and more is worse (*National Norm: National Health Policy, 2007 - Federal Ministry of Health, Sudan*).
- 5,000 people per functioning Basic Health Unit (BHU) in a locality is required; fewer is better and more is worse (*National Norm: National Health Policy, 2007 - Federal Ministry of Health, Sudan*).

- Areas should provide adequate healthcare in the form of medical staff per population and per PHCC.

Indicators and criteria:

- A locality where the population per medical staff is below the Darfur average is considered as suitable; above that average, the higher the worse (*Norm: average across localities*).
- The lower the percentage of Primary Healthcare Centres without medical staff, the more suitable a locality is (*Norm: average across localities*).

- Number of healthcare centres that can be upgraded at minimal cost to become (more) functional.

Indicators and criteria:

- The more non-functioning Primary Healthcare Centres, the more a locality requires upgrading (*Norm: average across localities*).
 - The more non-functional Basic Health Units, the more a locality requires upgrading (*Norm: average across localities*).
 - The more non-functioning Mobile Clinics, the more a locality requires upgrading (*Norm: average across localities*).
 - Areas with proper Early Warning Response Systems (EWARS) to guard against disease outbreaks.
- #### Indicators and criteria:
- The more healthcare facilities with Early Warning Response System (EWARS) available, the more suitable a locality (*Norm: average across localities*).

- The higher the percentage of facilities with EWARS in a locality, the more suitable it is (*Norm: mean of the localities*).

- Areas with good access to health facilities

Indicators and criteria:

- Areas with health facilities network coverage within a maximum 5km walking distance are preferred (*Norm: drafting team*).

For more details on the prioritisation of the various objectives and criteria, please refer to the criteria tree in *Appendix 3*.

Data sources and quality

The data used for this thematic evaluation was extracted from the *1st Quarterly report of the Government of Sudan (GoS) and the World Health Organisation (WHO) (2012)*, which uses the WHO standardised method known as the *Health Resources Availability Mapping System (HeRAMS)*. The system assists in the assessment, monitoring, and processing of available health resources data sets as collected by individual health facilities. The resulting standardised and comprehensive quarterly analysis represents a fairly reliable data source.

The data captured through HeRAMS reports was mapped. Considering that more than 10 years have passed since the last census, and particularly given the size of internal displacements, the population assessments are a potential source of error, although this report uses the more accurate 2012 data.

MAP SMCE02: HEALTHCARE

REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR

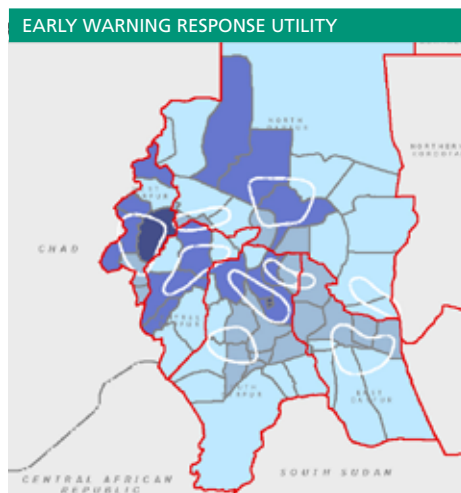
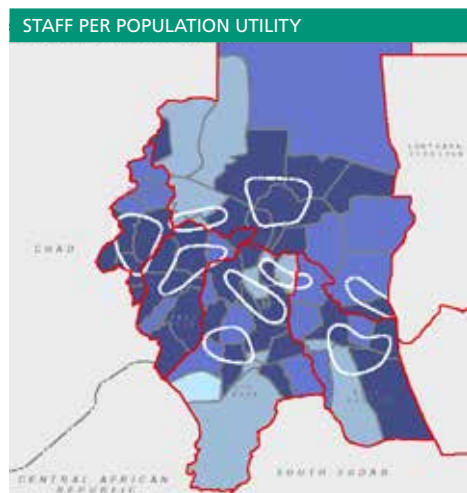
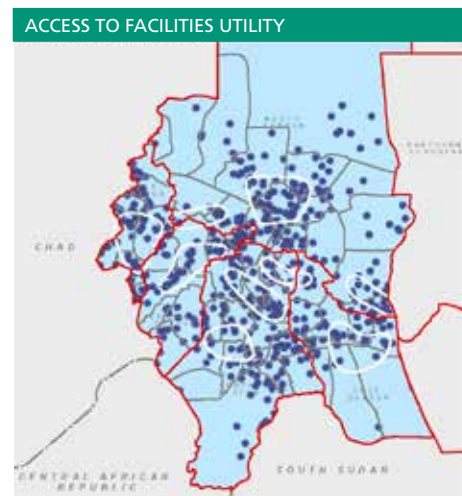
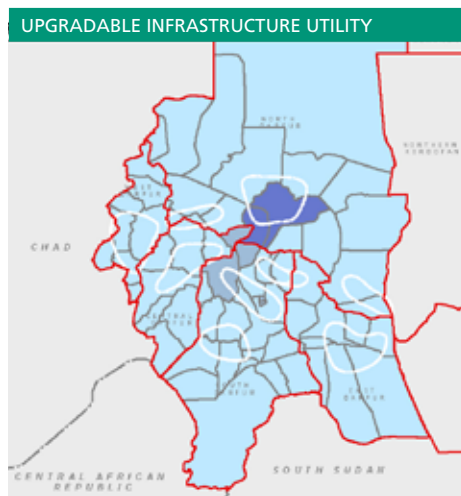
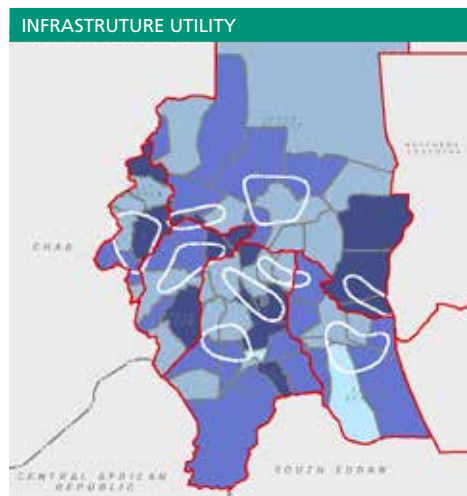
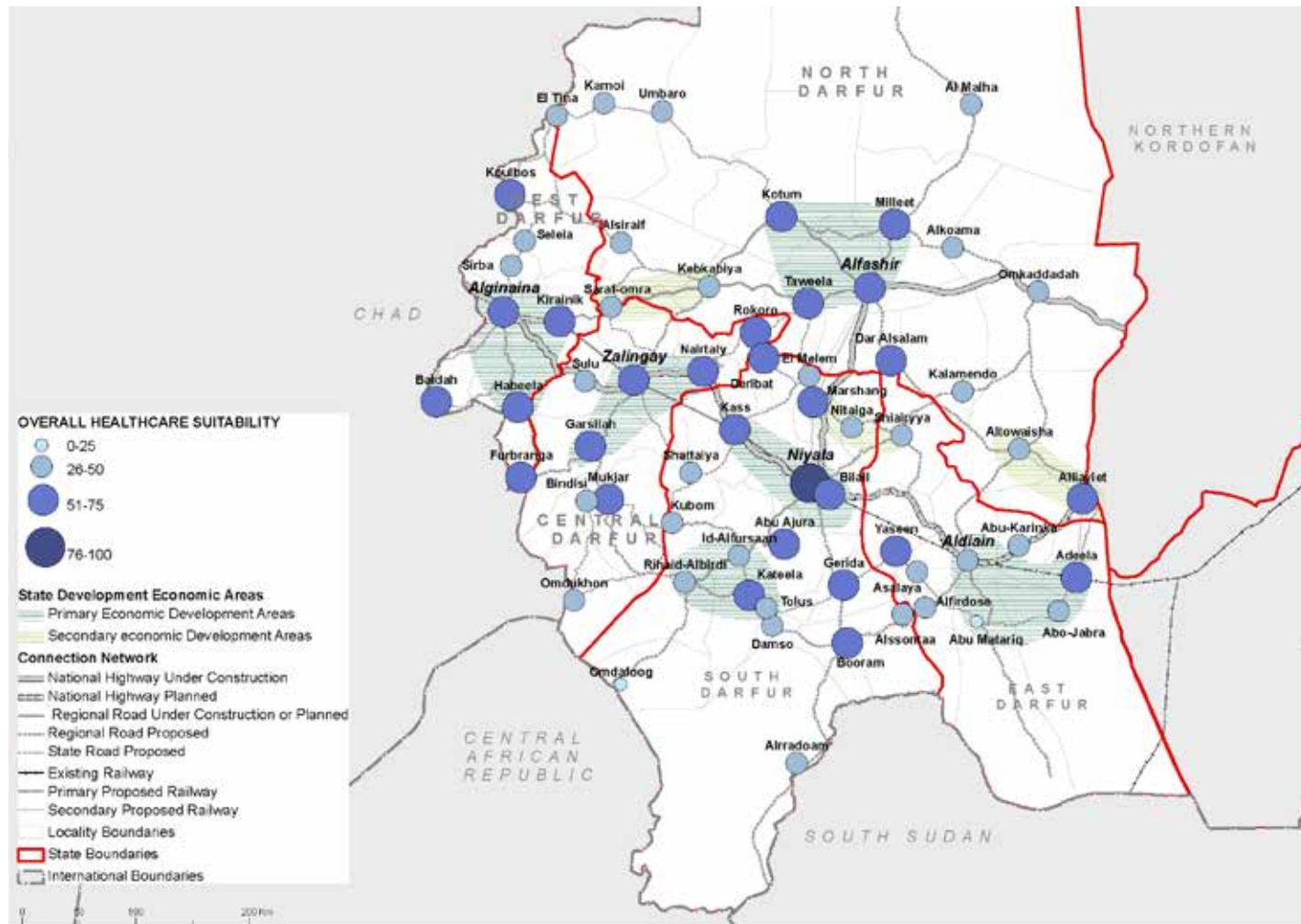


TABLE OF RESULTS — HEALTHCARE SUITABILITY

State	Primary EDA	Results
North Darfur	Al Fashir, Kotum, Taweela, Milleet	Moderate suitability. Al Fashir needs more facilities per population and, similarly as Taweela, should upgrade its health centres. EWARS needs strengthening in Milleet. Al Fashir offers the best access to health facilities, whereas Kotum has the worst.
South Darfur	Niyala, Bilail, Kass	Moderate suitability. Niyala is suitable but Kass would need improved healthcare facilities. Staffing is good in all localities. It is opportune for Niyala and Kass to upgrade its health facilities. Kass could provide better healthcare coverage.
	Id-Alfursaan, Rihaid-Albirdi, Kateela, Tulus	Low suitability. Provision of healthcare facilities per population is moderately suitable in Rihaid-Albirdi and Kateel, but less so in Tulus and Id-Alfursaan. Healthcare staffing in Kateela and Rihaid-Albirdi is respectively good and moderately suitable. Tulus needs more staff. Upgrading in Kateela is needed and to a lesser extent in Id-Alfursaan and Rihaid-Albirdi. All localities need reinforced EWARS. Rihaid-Albirdi has the lowest number of facilities.
West Darfur	Alginaina, Kirainik, Habeela	Low suitability. Alginaina needs to increase the number of facilities per population. EWARS needs strengthening in Habeela. Finally, access to health facilities should be improved.
Central Darfur	Zalingay, Nairtaty, Garsilah	Moderate suitability. Both healthcare facilities and staffing are available in Zalingay and Nairtaty, but less so in Garsilah. EWARS needs improvement in Nairtaty. Across Zalingay and Garsilah Localities, the health facilities coverage could be improved.
East Darfur	Aldiain, Abu Matariq, Adeela, Abu-Jabra	Low suitability. Adeela shows the highest suitability and Abu Matariq the lowest. Aldiain needs improved health care facilities per population, but staffing is good in all localities. EWARS needs strengthening across the whole EDA, particularly in Abu-Jabra.
State	Secondary EDA	Results
North Darfur	Saraf-Omra and Kebkabiya	Low suitability overall. Saraf-Omra has an adequate number of facilities per population whereas Kebkabiya needs improvement. On the other hand, staffing in Kebkabiya is adequate but is poor in Saraf-Omra. EWARS and healthcare access coverage must be improved in Saraf-Omra and even more so in Kebkabiya.
	Alliyiet and Altowaisha	Low suitability. Altowaisha has enough health centres. Staffing is adequate for all. EWARS and access must be improved in both localities.
South and East Darfur	Marshang, Nitaiga and Shiraiyya	Low suitability overall. Marshang is the more suitable locality, especially for medical staffing, but Nitaiga could improve. EWARS and access need improvement in Nitaiga.

Infrastructure suitability

Rationale of the evaluation structure

Infrastructure development is a fairly dynamic process; therefore, this evaluation rates infrastructure as “existing”, “under construction” and “planned”. Four sub-objectives were used for this purpose, according to the distance from national, regional or State roads, railways, airports or airstrips, and electricity.

- Areas should have access to road infrastructure *Indicators and criteria*:
 - A national highway under construction closer than 25 km is preferred, beyond 50 km it is not.
 - A national highway planned closer than 25 km is preferred, beyond 50 km it is not.
 - A regional highway under construction closer than 15 km is preferred, beyond 50 km it is not.
 - A regional highway planned closer than 15 km is preferred, beyond 50 km it is not.
 - A State highway planned closer than 15 km is preferred, beyond 25 km it is not.
- Areas should have adequate access to air transport infrastructure *Indicators and criteria*:
 - If a locality features an airport it is preferred.
- Areas should have adequate access to rail infrastructure *Indicators and criteria*:
 - If an area is closer to an airport it is preferred.
 - If a locality features an airstrip it is preferred.
 - If an area is closer to an airstrip it is preferred.
- Areas should have adequate access to electricity infrastructure *Indicators and criteria*:
 - The sooner a power grid is developed in an urban centre, the better is the centre.
 - If an area is within 5 km and no more than 10 km away from the first-phase regional power grid, it is preferred.
 - If an area is within 5 km and no more than 10 km away from the second-phase regional power grid, it is preferred.
 - If an area is within 5 km and no more than 10 km away from the third-phase regional power grid, it is preferred.
 - If an area is within 5 km and no more than 10 km from the fourth-phase regional power grid, it is preferred.

For more details on the prioritisation of the various objectives and criteria, please refer to the criteria tree in *Appendix 3*.

Data sources and quality

Based on the existing road network, roads under construction and planned roads, a comprehensive network map of national, regional and State roads has been developed. The combination of MoF data and the UN Humanitarian Air Services (UNHAS) map of 2011 is the basis for the airport/airfield assessment. The railways map came from the 2005 SIM map of the Crisis Recovery Mapping and Analysis (CRMA) exercise. Settlements and the electrification process were also assessed in North and South Darfur to define a baseline.

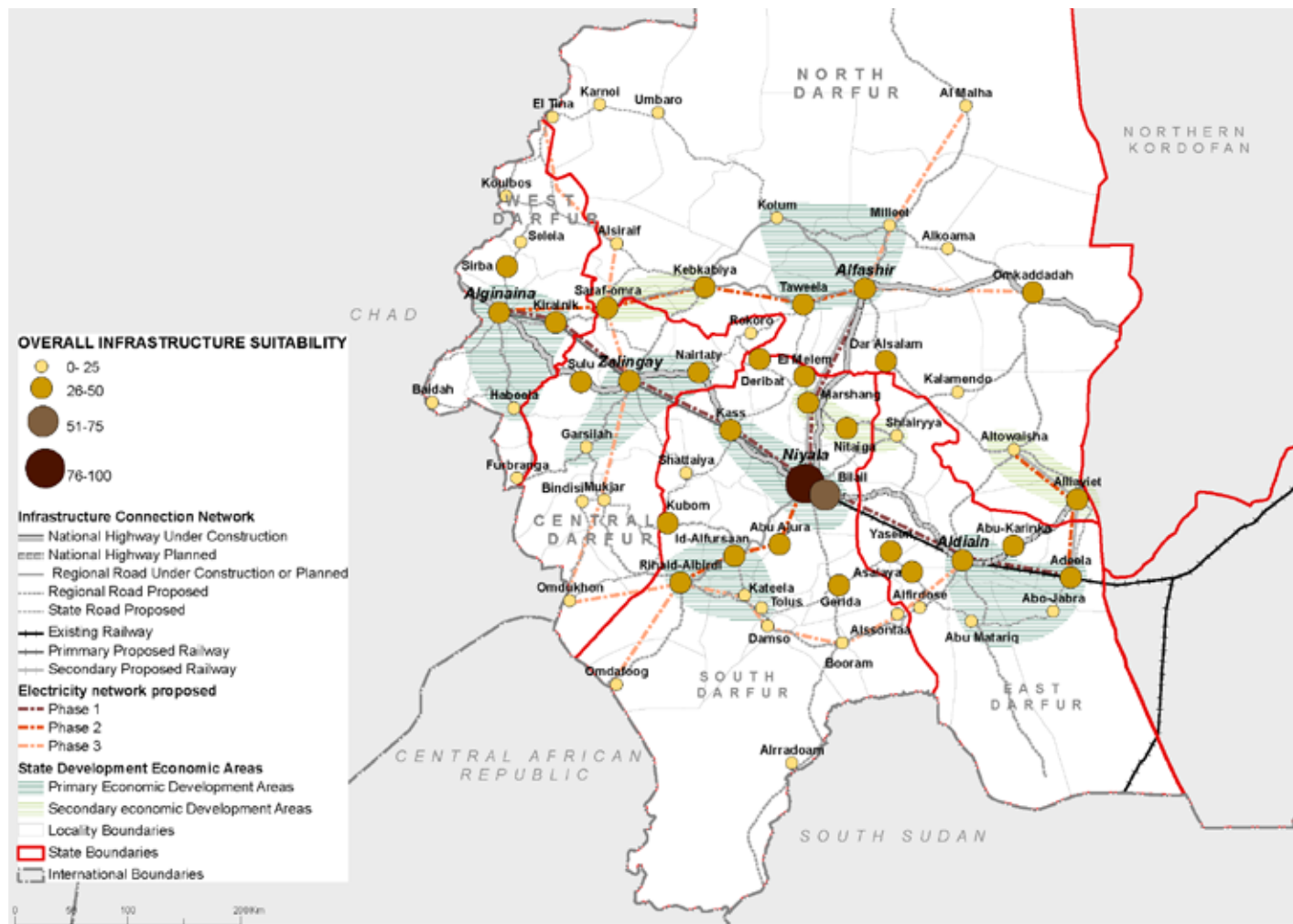
There is a considerable degree of uncertainty regarding the actual implementation of planned infrastructure and its real effect on economic development, although road construction obviously carries a lower degree of uncertainty.

TABLE OF RESULTS — INFRASTRUCTURE SUITABILITY

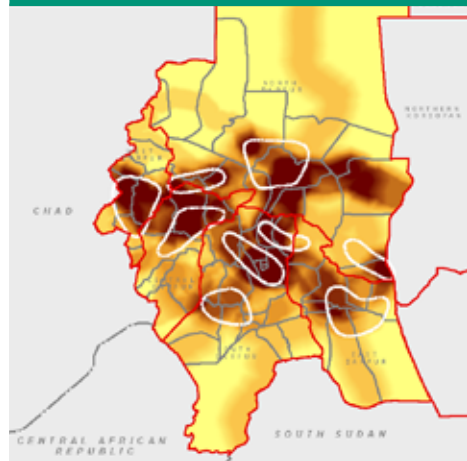
State	Primary EDA	Results
North Darfur	Al Fashir, Kotum, Taweela, Milleet	Low suitability. In Al Fashir access to road infrastructure is relatively good but other localities need improvement. The same applies for airport infrastructure. Rail infrastructure is not expected to have an effect on this EDA in the short to medium terms, but this area is centrally located regarding the electrification of the northern and central parts of Darfur.
South Darfur	Niyala, Bilail, Kass	Moderate suitability. In Kass road and air infrastructure coverage needs improvement. The expected rail infrastructure development makes this EDA more suitable. Both Kass and Bilail need improved electricity infrastructure.
	Id-Alfursaan, Rihaid-Albirdi, Kateela, Tolus	Very low suitability, particularly Kateela and Tolus. This EDA could greatly benefit from a connection to the national road network and from further electrification. There are airstrips in Rihaid-Albirdi and Kateela, but no railway.
West Darfur	Alginaina, Kirainik, Habeela	Low suitability. Air access is better in Alginaina than in Kirainik and Habeela, but there is no planned rail infrastructure development in the short to medium-term. No data are available regarding electrification.
Central Darfur	Zalingay, Nairtaty, Garsilah	Low suitability, in particular Garsilah. Road and air access needs improvement in both Nairtaty and Garsilah. There is no railway in this EDA, and access to electricity is poor.
East Darfur	Aldiain, Abu Matariq, Adeela, Abu-Jabra	Very low suitability, particularly for Abu Matariq and Abu Jabra. The EDA would greatly benefit from a connection to a national road, despite being served by rail infrastructure in Aldiain and Adeela. Air transport infrastructure is available in Aldiain and Adeela.
State	Secondary EDA	Results
North Darfur	Saraf-Omra and Kebkabiya	Low suitability. This EDA needs improved road connections. There is an airfield but the existing rail infrastructure is not expected to improve. The area is not included in power grid extension plans.
	Alliyet and Altowaisha	Low suitability. This EDA would benefit from the extension of the railway and electricity networks.
South and East Darfur	Marshang, Nitaiga and Shiraiyya	Low suitability. This EDA needs road improvement, despite having airfield/strip connections. It needs improved rail infrastructure. Both settlements are not included in any planned power grid.

MAP SMCE03: INFRASTRUCTURE

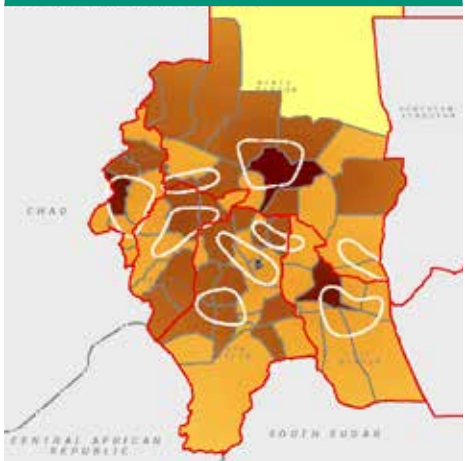
REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



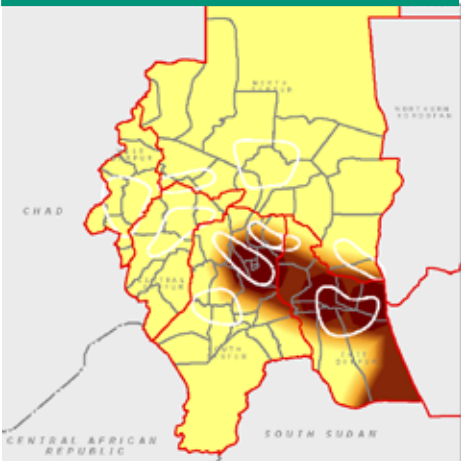
ROADS UNDER CONSTRUCTION AND PLANNED UTILITY



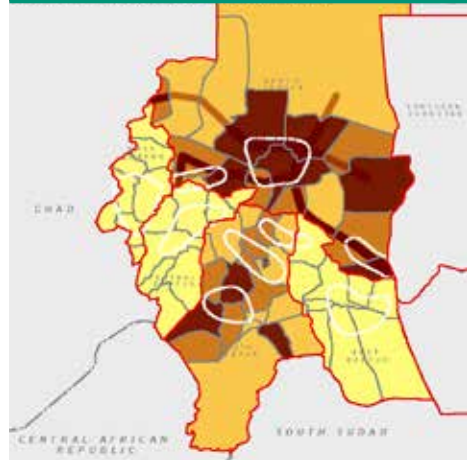
AIRPORT INFRASTRUCTURE UTILITY



RAILWAY INFRASTRUCTURE UTILITY



ELECTRICITY PLANNED NETWORK UTILITY



Data Sources: OCHA Sudan, IMWG-CRMA, UN-Habitat and Government of Sudan
 Sudan Coordinate System: Geographic
 Disclaimer: Names and boundaries used in this map are illustrative only and are by no means authoritative or endorsed by the UN

Water, Sanitation and Hygiene (WASH) suitability

Rationale of the evaluation structure

In this evaluation, we consider not just availability and access to water, but also its quality. Water quality standards were taken from a 2011-2012 UNICEF study. As for sanitation, the only reliable data that could be included is access to latrines. Therefore, two sub-objectives have been identified: people in localities should have safe drinking water, and areas should have sanitation systems.

- Localities should have permanent access to safe drinking water *Indicators and criteria*:
 - Below the Darfur average of 12 litres per capita per day, water availability is considered inadequate; the higher above average, the better it is.
 - Distance to hand pumps should be less than 500 m and no more than 2 km.

- Distance to water yards should be less than 500 m and no more than 2 km.
- Localities with more water sources meeting specified quality standards are more suitable.
- Localities with more water sources that do not meet these quality standards are less suitable.
- Localities with more water sources for which water quality is unknown are less suitable.
- Localities with more functional water yards are preferred.
- Localities with more functional hand water pumps are preferred.
- Localities with more functional hafirs are more suitable.
- Localities with more functional open wells are preferred.
- Localities with more functioning water sources are more suitable.
- Localities with more dysfunctional water sources are less suitable.
- Localities with more water sources with unknown functionality are less suitable.

- Areas should enjoy the benefits of sanitation *Indicators and criteria*:
 - Below the Darfur-wide average of 26% percent of people with access to latrines, availability is considered inadequate, and the higher above average the better an area is.

For more details regarding the prioritisation of objectives and criteria, please refer to the criteria tree in Appendix 3.

Data sources and quality

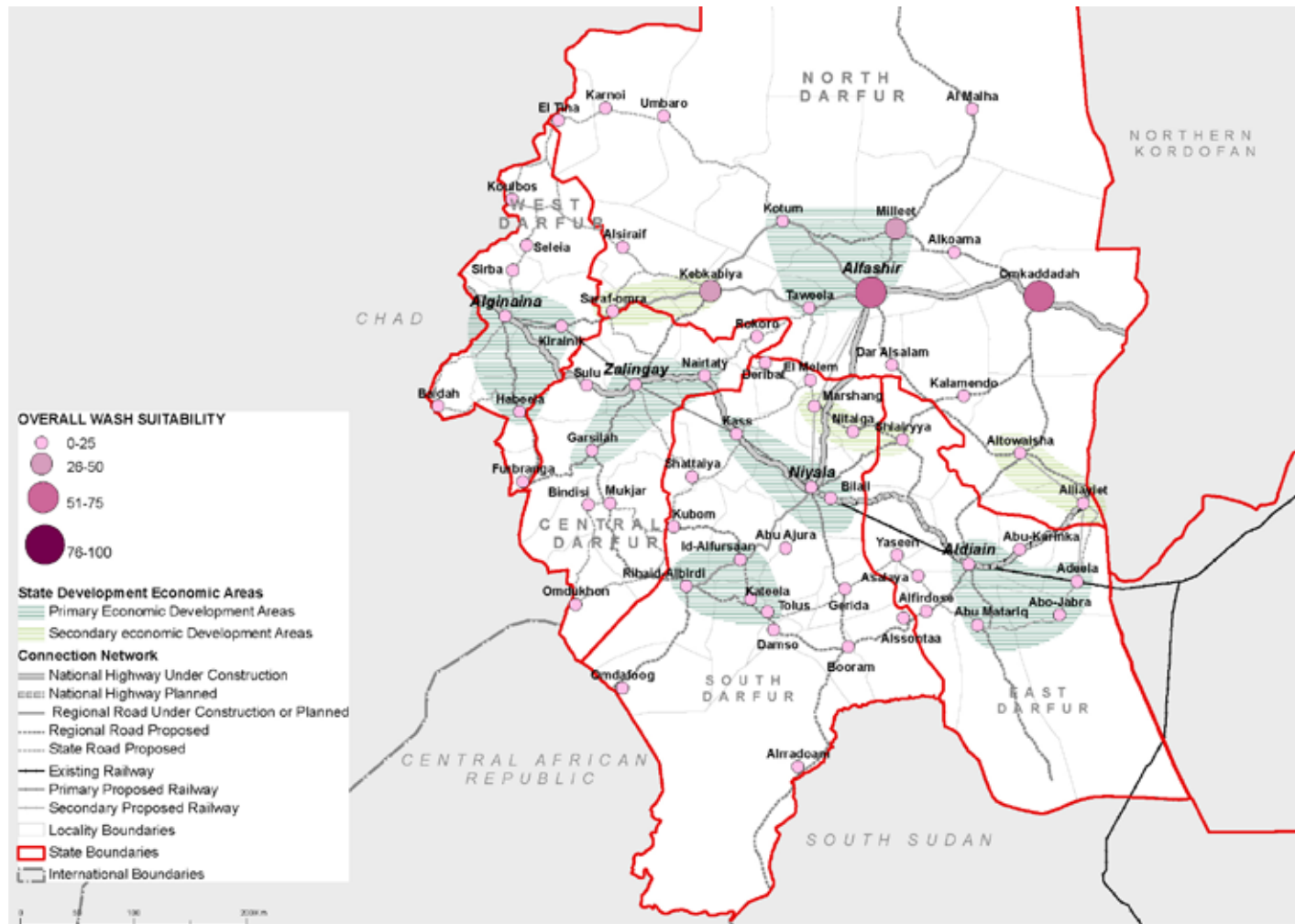
- The data were taken from the 2012 edition of the annual UN CD-ROM with the results of a UNICEF survey of WASH in Darfur. Data on water consumption and sanitation per capita were obtained from a power point presentation by the UNICEF Drinking Water and Sanitation Unit dated May 2013.
- Short of adequate information regarding collection methods, it is difficult to assess the quality of the data.

TABLE OF RESULTS — WATER, SANITATION AND HYGIENE (WASH) SUITABILITY

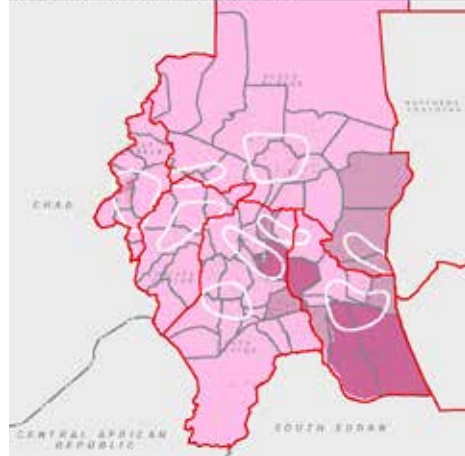
State	Primary EDA	Results
North Darfur	Al Fashir, Kotum, Taweela, Milleet	Low suitability. All localities need improved availability of drinking water and water sources, but water quality is reasonably suitable. In Taweela sanitation needs serious improvement.
South Darfur	Niyala, Bilail, Kass	Low suitability. Only drinking water availability in Bilail is moderately suitable. Water quality must be improved in Kass. Both Niyala and Kass must improve access to sanitation.
	Id-Alfursaana, Rihaid-Albirdi, Kateela, Tolus	Very low suitability, particularly in terms of water availability and sanitation, and water quality to a lesser extent.
West Darfur	Alginaina, Kirainik, Habeela	Low suitability. Volumes of water available must be increased in all three localities; water quality is particularly inadequate in Habeela. Sanitation should be improved.
Central Darfur	Zalingay, Nairtaty, Garsilah	Very low suitability. Sanitation is adequate only in Nairtaty. Water quantity and quality need improvement.
East Darfur	Aldiain, Abu Matariq, Adeela, Abu-Jabra	Low suitability. Aldiain needs improved water availability, but is the only locality with moderately suitable sanitation.
State	Secondary EDA	Results
North Darfur	Saraf-Omra and Kebkabiya	Very low suitability, both in terms of water quantity and quality. Sanitation standards in Kebkabiya are suitable.
	Alliyet and Altowaisha	Low suitability.
South and East Darfur	Marshang, Nitaiga and Shiraiyya	Very low suitability, both in terms of water and sanitation access.

MAP SMCE04: WATER, SANITATION AND HYGIENE (WASH)

REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



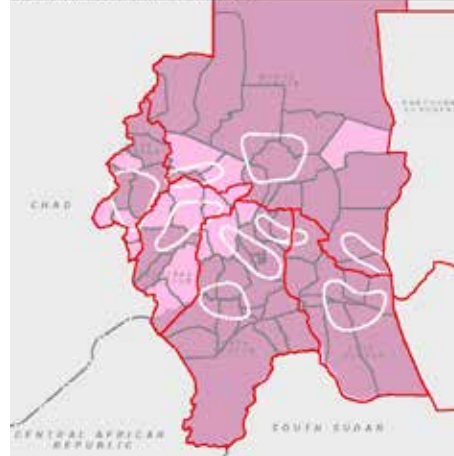
DRINKING WATER AVAILABILITY UTILITY



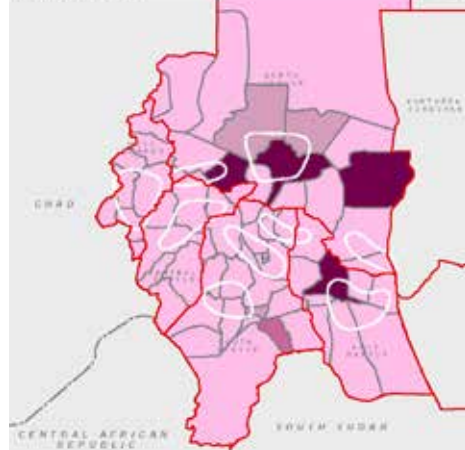
DRINKING WATER QUANTITY UTILITY



DRINKING WATER QUALITY UTILITY



SANITATION UTILITY



Data Sources: OCHA Sudan, IMWG-CRMA, UN-Habitat and Government of Sudan
Sudan Coordinate System: Geographic
Disclaimer: Names and boundaries used in this map are illustrative only and are by no means authoritative or endorsed by the UN

Economic suitability

The rationale behind the evaluation structure

The overall logic behind this evaluation is that those localities with the more diverse economic activities economically are more suitable for the purposes of development and IDP issues. Data were extracted from the MoF and the consultative workshops, based on the presence of the various functions and the economic potential of a locality. The sub-objectives involve construction, economic support services, the diversity of shops, stores and services, commodities and food produced, and basic economic services.

- The more local construction-related expertise is diverse, the greater the economic potential of a locality *Indicators and criteria:*
 - The presence of architects enhances local economic potential.
 - The presence of building contractors enhances local economic potential.
 - The presence of plumbers enhances local economic potential.
 - The presence of surveyors enhances local economic potential.
 - The presence of engineers enhances local economic potential.
 - The presence of electricians enhances local economic potential.
 - The presence of a building material store enhances local economic potential.
- The more diversity in economic support services, the greater the economic potential of a locality *Indicators and criteria:*
 - A locality should have financial and legal services (accountants, lawyers, banks).
- A locality should have agricultural support services (cooperative union, agricultural office, irrigation).
- The presence of animal livestock market enhances economic potential.
- A locality should have markets.
- A locality should have generic facilities (electricity companies, customs office, vocational schools).
- The more diverse shops, stores and services, the greater the economic potential of a locality. *Indicators and criteria:*
 - A manufacturing plant enhances economic potential.
 - Grain stores enhance economic potential.
 - A locality should enjoy the benefits of food shops (bakeries, groceries, cooking fuel store).
 - Hotels and cafes enhance economic potential.
 - A locality should have service stores (furniture, barbers and tailors, laundries).
 - Motor car services (repairs, petrol station) enhance economic potential.
- The more diverse commodity production is, the greater the economic potential of a locality. *Indicators and criteria:*
 - Sugar cane production potential.
 - Oil seed production potential.
 - Gum arabic production potential.
 - Tobacco production potential.
 - Livestock production potential.
- The more diverse staple production is, the greater a locality's economic potential. *Indicators and criteria:*
 - Honey production potential.
 - Food crop production potential.
 - Fish production potential.

- The more diverse basic economic services in a locality, the more economic potential it has. *Indicators and criteria:*
 - Potential of existing cement factories.
 - Potential of existing trade centres.
 - Potential of existing markets.

For more details on the prioritisation of objectives and criteria, please refer to the criteria tree in *Appendix 3*.

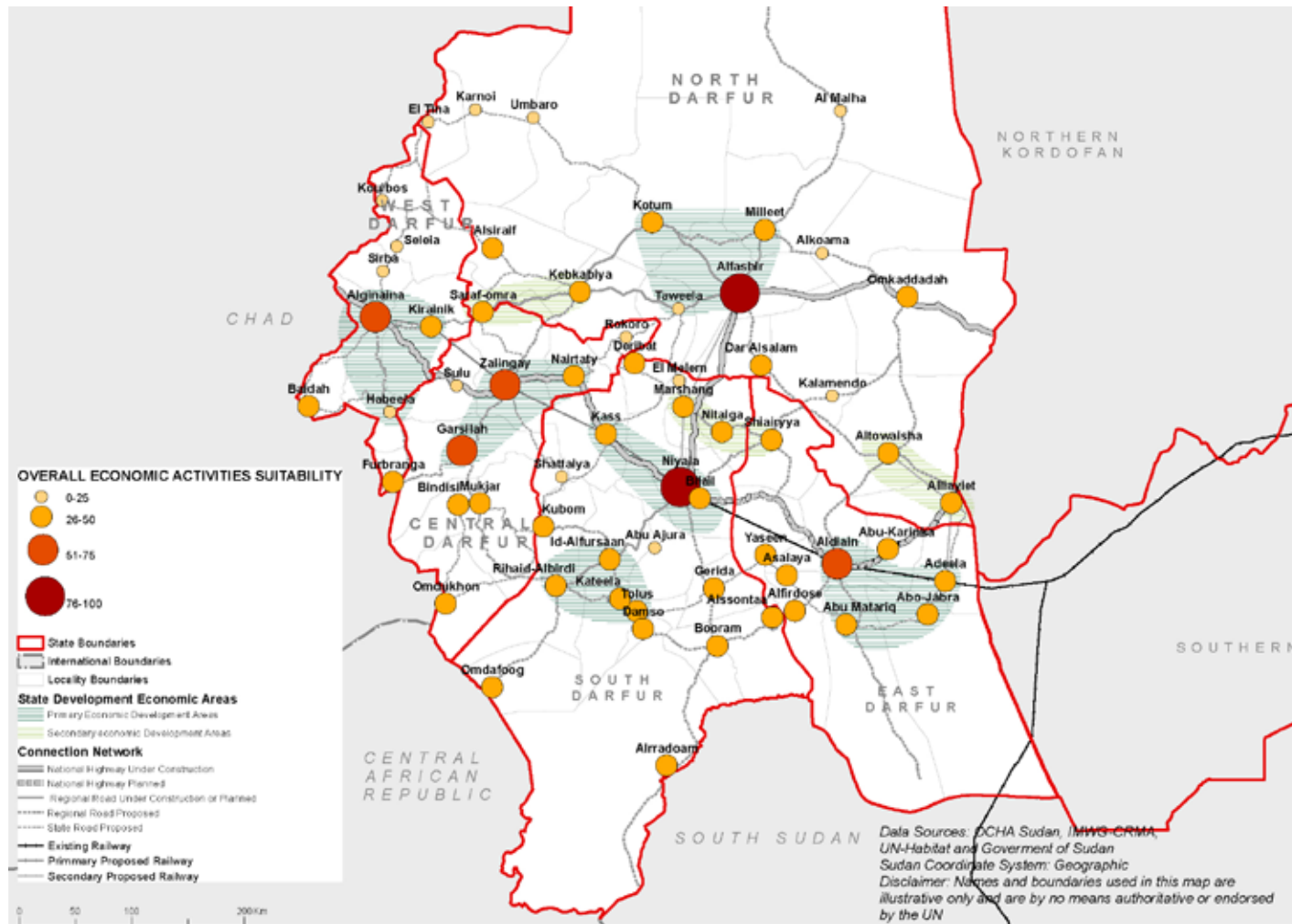
Data sources and quality

The quality of economic data is comparatively quite good. The inventory of economic functions in each locality (mainly used in the MoF analysis) is fairly reliable since it merely records the presence or absence of a particular function, which can be easily established. Therefore, it is for the weighted count of these (socioeconomic) functions to determine the degree of economic suitability. Since in every State the economic potential was assessed through local consultative workshops, the final result can be considered as reliable, too.

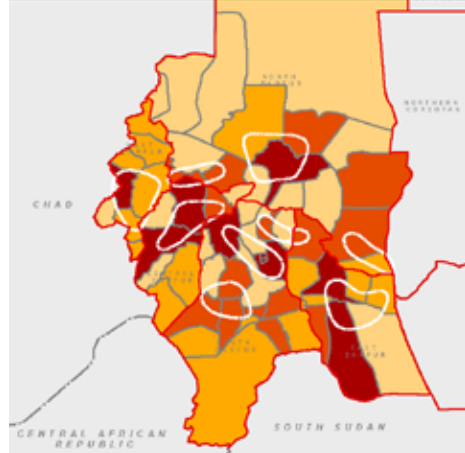
However, actual economic functions and potential are only proxy indicators for a more quantitative assessment of the economic performance of individual localities, which could be measured through monetary, production, or productivity indicators. Unfortunately, this type of data is not yet available for Darfur.

MAP SMCE05: ECONOMICS

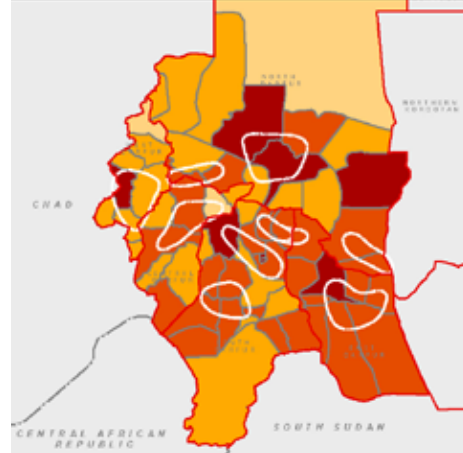
REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



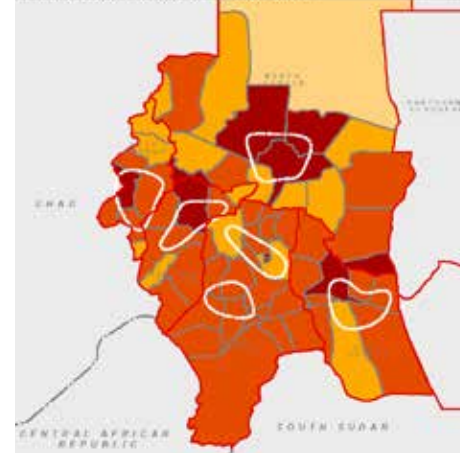
CONSTRUCTION SECTOR UTILITY



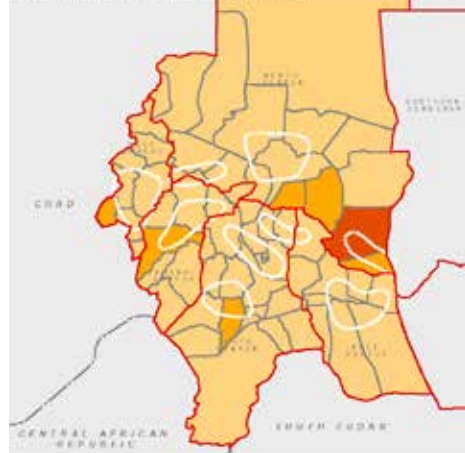
SUPPORT SERVICES SECTOR UTILITY



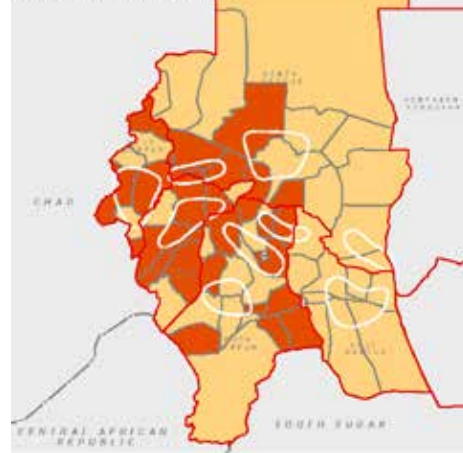
SHOPS AND ECONOMIC ACTIVITY UTILITY



AGRICULTURAL PRODUCTION POTENTIAL



FOOD PRODUCTION POTENTIAL



MISCEL SERVICES POTENTIAL



TABLE OF RESULTS — ECONOMIC SUITABILITY

State	Primary EDA	Results
North Darfur	Alfashir, Kotum, Taweela, Milleet	Moderate suitability. Taweela would need more economic functions especially those related to the construction sector and support services. As for the agricultural production potential, Taweela and Kotum show the highest suitability.
South Darfur	Niyala, Bilail, Kass	Moderate suitability. This area is particularly suitable in terms of existing and potential economic functions related to construction, support services and mining. Meanwhile, the agricultural production potential needs to be improved in all the localities.
	Id-Alfursaana, Rihaid-Albirdi, Kateela, Tolus	Low suitability. Kirainik and Habeela would need more economic functions, especially construction-related expertise and support services. Agricultural production potential needs to be improved in all three localities.
West Darfur	Alginaina, Kirainik, Habeela	Low suitability. Volumes of water available must be increased in all three localities; water quality is particularly inadequate in Habeela. Sanitation should be improved.
Central Darfur	Zalingay, Nairtaty, Garsilah	Moderate suitability. This area is particularly suitable regarding construction, support services and mining economic functions. Zalingay and Nairtaty need to improve their agricultural production potentials, while Garsilah would need a cement factory.
East Darfur	Aldiain, Abu Matariq, Adeela, Abu-Jabra	Low suitability. Abu-Jabra would need more economic functions, especially in terms of construction-related expertise. The agricultural production potential of all localities needs to improve, especially Aldiain and Adeela.
State	Secondary EDA	Results
North Darfur	Saraf-Omra and Kebkabiya	Low suitability. This area is particularly suitable in terms of existing and economic functions, especially for construction-related expertise and support services. Meanwhile the agricultural production potential needs to be improved in both localities.
	Alliyiet and Altowaisha	Low suitability. Both localities account of existing and economic functions, although Alliyiet would need to upgrade its construction-related expertise. Agricultural production potential needs improvement.
South and East Darfur	Marshang, Nitaiga and Shiraiyya	Low suitability. Nitaiga would need more economic functions, especially regarding construction-related expertise. The agricultural production potential also needs to be improved.

STATE-SPECIFIC SPATIAL ACTION PLANS

Darfur's Regional Spatial Structure has been identified through a combination of the results of the matrix of functions (MoF) and of the State-wide consultative workshops, as well as the subsequent multi-criteria evaluation for each Economic Development Area (EDA). These together form the basis from which *State Spatial Action Plans (SSAPs)* can be derived for the whole Darfur region, and they can be further detailed at the locality level. These SSAPs propose practical strategic interventions according to the following spatial elements:

- For Primary and Secondary *Development Corridors (DCs)*, the objective is to facilitate connectivity across all five States in Darfur as well as with Sudan as a whole and neighbouring countries. Spatial action plans focus mainly on infrastructure development (roads, railway, electricity, etc.), in a bid to improve transportation and trade, and also on strengthening the roles of urban centres along corridors in a phased and consistent manner.
- Along the DCs and the borders of Darfur, specific interventions must be planned in the *Nodal Towns (NTs)* to be included in each spatial action plan. The NTs are to play a special

role in terms of service delivery, trade, cross-border flows (for border towns), logistics and transport connectivity as well as livelihood opportunities. This is why urban planning needs urgent improvement of nodal towns in every State. As a first step, such improvements can be delivered through a participatory approach following the Base Plan technique; this is an appropriate and straightforward planning tool for intermediate-size cities, providing a synthetic spatial vision of the current condition and future development needs of any particular town.

- For each Primary and Secondary *Economic Development Area (EDA)*, an analysis of the main town in each locality is carried out as per the relevant State spatial action plan (SSAP), taking in the results of the multi-criteria evaluation as well as of the plans for region-wide development corridors. At this stage, this analysis focuses mainly on the themes used in the multi-criteria evaluation – infrastructure development (transport, electricity, etc.), WASH, education, health and economic activities – providing an initial overview of current conditions. In the next step, strategic recommendations are derived for each State spatial action plan: where, how and (ideally) when to intervene in each primary and secondary Economic Development Area

according to the various agreed themes, including capacity-building for urban and regional planning, administration and finance. These recommendations also take into account the results of the matrix of functions (MoF) and the State Consultative Workshops. The EDAs are designed to play the role of economic cores in each State of Darfur, which calls for a series of more detailed development studies.

SSAPs come under the form of a table accompanied by a map for each State in Darfur. At this particular stage, these plans must be considered as very first drafts, since they need subsequent validation through new consultations at State level. Unfortunately, the time and funding available to prepare this report made it impossible to undertake new missions on the ground or additional consultations at State level, which should be the immediate follow-up step to this work. **Consequently, the draft SSAPs presented hereafter should be considered as indicative only.**

With more time and resources, the spatial analysis can also further be detailed at the level of each locality. This would include proper capacity-building among State and locality authorities to facilitate the use of this RSPSD, which is meant to serve as a dynamic spatial planning tool.

The North Darfur State Spatial Action Plan (proposed)

Strategic interventions along the Development Corridors (DCs)

North Darfur is crossed by two *Primary Development Corridors (DCs)*, one along a north-south axis linking the capitals of North and South Darfur to Libya (North) and the Central African Republic (South), and including the following urban centres in the State: Omdurman, Al Fashir, Taweela, Kebkabiya and Saraf-Omra; and one along an east-west axis linking the capitals of North and West Darfur, to Northern Kordofan (east) and Chad (West), including Al Fashir, Milleet and Almaha.

This State also includes a *Secondary DC* stretching from south to north. This corridor links North Darfur with the Central African Republic (south), Zalingay (capital of Central Darfur) and Chad (north), and includes Saraf-Omra, Alsiraif and El Tina.

These corridors provide location for major infrastructure investments crossing North Darfur, which should be contemplated in the five-year National Strategic Plan of the State. The following actions are proposed in connection with these DCs:

- Holding fora and workshops with the various stakeholders (public and private sectors) along these corridors, including those from neighbouring countries, with a view to identifying the major interventions which could boost the socio-economic development of the urban centres along the corridors.
- Feasibility studies for:
 - Extending the railway from Niyala to Al Fashir along the north-south primary DC.
 - Extending the power grid along the two primary and the secondary corridors.
 - Upgrading existing roads between Saraf-Omra and El Tina through Alsiraif along the secondary corridor.

Strategic interventions for the Economic Development Areas (EDAs)

North Darfur features one *Primary EDA* comprised of Al Fashir (State capital), Kotum, Milleet and Taweela localities; this area (and surroundings) effectively deploys a network of mutually supporting settlements, including a villages and IDP camps. This EDA features a high demographic density, accounting for more than 35% of the total State population (2008 Census) as well as 87% of the total displaced population in the State (UNHCR, 2012).

Based on the results of the SMCE and of the State Consultative Workshop for North Darfur, the following can be stated regarding this Primary EDA:

- Al Fashir and Taweela are located along the national highway, but road access within the EDA must generally be improved, in particular between Al Fashir and Milleet, and between Milleet and Kotum. Al Fashir has the benefit of an international airport but is not connected to the existing railway network, an issue which is being addressed under the 2012-2016 National Strategic Plan. Since this EDA is somehow isolated, it is really essential to strengthen its connectivity to the rest of Darfur. The Kebkabiya-Kotum link needs attention.
- In terms of basic services and infrastructure, this EDA is centrally located in the power grid plans for Darfur, and a new power station is under construction at Al Fashir. Although healthcare coverage across the EDA is moderately suitable, the Al Fashir locality still needs more facilities per population; and access to health facilities needs improvement in Kotum. Both Milleet and Kotum could also benefit from fewer students per school if they are to meet national standards. Adequate supply of drinking water is a problem, also due to the pressures exercised by the Abu Shouk and El Salam IDP camps, but there is underground and surface water potential in Milleet and Kotum respectively. As for sanitation, Taweela needs more improvement than the other localities.

- In terms of economic potential, uranium is mined in Kotum, which also features significant horticulture production due to its location in the Western Wadi cultivation area. Tobacco is Taweela's major asset. In addition to adequate crops, Milleet is considered as one of the major commercial livestock centres in North Darfur, as Egypt-bound migration routes cut across the locality.
- Professional skills must be improved in this Economic Development Area, which can be achieved if the capacities of the vocational schools in Milleet and Al Fashir are enhanced. More diversified livelihood opportunities must be identified through a labour market survey.
- A detailed Strategic Development Plan of this economic area is urgently needed, with special attention given to urban planning and local economic development. Al Fashir could greatly benefit from a Base Urban Plan identifying expansion areas and planning for the absorption of the Abu Shouk IDP camp.

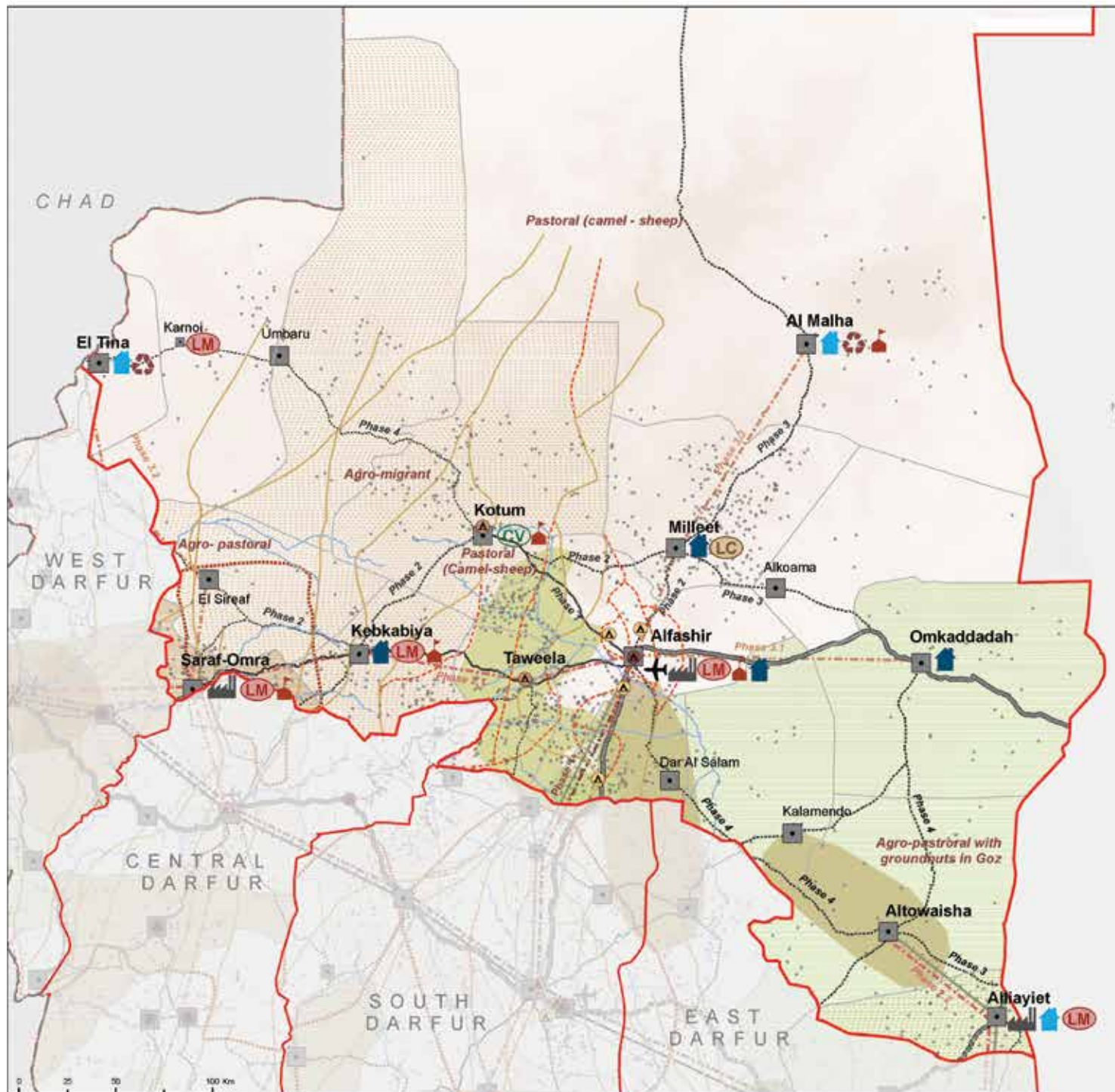
North Darfur also includes two *Secondary EDAs* both located along the Primary development corridor, which strategically support from both west and southeast the Primary EDA including Al Fashir, otherwise rather isolated. One of these secondary areas includes Saraf-Omra and Kebkabiya, accounting for a non-negligible 18% of the total population of the State (the second most populated area in North Darfur). The other secondary area includes Altowaisha and Alliyet, which is located right next to a large gum arabic production area.

The following proposals are put forward for the Saraf-Omra-Kebkabiya Secondary EDA:

- Both urban settlements are fairly well connected by road and air, but are not expected to benefit from the planned extension of the power grid.
- As regards basic services and infrastructure, Saraf-Omra features an adequate number of healthcare facilities

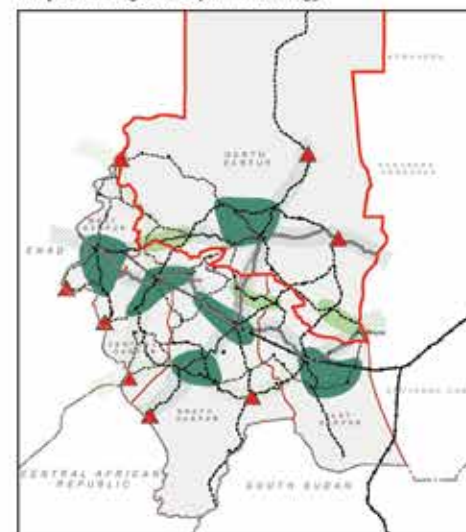
MAP SSAP01: NORTH DARFUR STATE STRATEGIC ACTION PLAN

REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



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|--|---------------|------------|------------|---------------|-------------|---------------|------------|---------------|---|---|
| <p>Urban settlements</p> <ul style="list-style-type: none"> ■ 0-20.000 hab. ■ 20.000 - 50.000 hab. ■ > 50.000 hab. • Rural settlements <p>IDPs Camps urbanized</p> <table border="0"> <tr> <td>Distance</td> <td>Population</td> </tr> <tr> <td>● 0 - 2 km</td> <td>> 20.000 IDPs</td> </tr> <tr> <td>▲ 2 - 10 km</td> <td>> 20.000 IDPs</td> </tr> <tr> <td>▲ 10-50 km</td> <td>> 20.000 IDPs</td> </tr> </table> <ul style="list-style-type: none"> — Main rivers and Wadi □ Locality boundaries ▭ State Boundaries ▭ International Boundaries | Distance | Population | ● 0 - 2 km | > 20.000 IDPs | ▲ 2 - 10 km | > 20.000 IDPs | ▲ 10-50 km | > 20.000 IDPs | <p>Infrastructure Connection Network</p> <ul style="list-style-type: none"> — National Highway Under Construction — National Highway Planned — Regional Road Under Construction/Planned --- Regional Road Proposed --- State Road Proposed <p>Railway Network</p> <ul style="list-style-type: none"> — Existing Railway — Primary Proposed Railway Extension — Secondary Proposed Railway Extension <p>✈ Airports</p> <p>Electricity Network</p> <ul style="list-style-type: none"> --- Phase 1 --- Phase 2 --- Phase 3 <p>Migration Routes</p> <ul style="list-style-type: none"> --- Blocked routes — Current Routes | <ul style="list-style-type: none"> ▭ Grazing Areas (FAO, 2010) ▭ Mining areas ▭ Agroindustry potential economic areas ▭ Sugar Cane ▭ Oil Seeds ▭ Tobacco Production ▭ Major gum arabic area ▭ Existing Factories LM Existing livestock market LC Existing livestock and crop market CV Proposed crop and vegetable market ♻ Border trades 🏛 Tourism/Archaeological place 🎓 Existing vocational/technical school 🎓 Proposed vocational/technical school |
| Distance | Population | | | | | | | | | |
| ● 0 - 2 km | > 20.000 IDPs | | | | | | | | | |
| ▲ 2 - 10 km | > 20.000 IDPs | | | | | | | | | |
| ▲ 10-50 km | > 20.000 IDPs | | | | | | | | | |

Proposed Regional Spatial Strategy



per population, whereas Kebkabiya needs improvement on this count. Both localities must reduce the numbers of students per school if they are to meet national standards. Access to safe drinking water, in terms of both volume and quality, must also be improved, especially in Kebkabiya, where the wadis offer surface water potential.

- Economically, gold mines are operating in Kebkabiya. As for agricultural potential, this EDA already features vegetable, fruit pulse and sugar cane. Saraf-Omra is a major livestock market in North Darfur, due to a privileged location along the main migration routes to Libya and Chad.
- The vocational schools in Kebkabiya could better contribute to professional skills in this EDA. A labour market survey would identify more livelihood options as well as suitable local economic development opportunities.
- This Secondary EDA also needs a strategic development plan, with the emphasis on basic services development.

Regarding the Altowaisha-Alliyet Secondary EDA, the proposals are as follows:

- Alliyet stands to benefit from the planned extension of the national highway, the road to Altowaisha also needs upgrading. Alliyet has an airstrip and, like Altowaisha, is expected to benefit from the planned extension of the railway line from Adeela.
- As part of the 2012-2016 State strategic plan, the power grid is expected to extend to this development area. Both localities need reinforced EWARS and improved access to healthcare centres, and should seek a reduction in the numbers of students per school. Access to safe drinking water can be improved if the underground and surface water potential of Alliyet is tapped.
- In terms of economic potential, this EDA is located along the “gum arabic belt” and benefits from oil seeds processing and livestock production. A range of professional services is available across the localities.
- A strategic development plan is also needed for this EDA, with emphasis on basic services, and it would benefit from a labour market survey.

Strategic interventions in Nodal Towns (NTs)

Three nodal towns are proposed for North Darfur, namely El Tina (strategically located close to the border with Chad), Almalha and Omkaddadah. All need appropriate planning tools if their urban settings are to be improved, including Base Urban Plans.

El Tina has good livestock and border trade potential, but lacks a number of basic professional functions (see MoF results). Also needed are improvements in basic services (especially schools) and infrastructure (the road to Kotum).

Almalha is the second most populated urban centre in North Darfur and derives its relative prosperity from mining and cross-border trade. The town is also located on a significant groundwater reserve. For all this potential, Almalha lacks some basic professional functions and needs improved basic services and infrastructure, especially regarding healthcare and WASH.

According to the multi-criteria evaluation (SMCE), Omkaddadah features overall moderate suitability in terms of education, healthcare, infrastructure and economic potential (rangeland), and WASH standards are adequate. This important nodal town is strategically located along the national highway linking Khartoum to Al Fashir, acting as a gateway for the Darfur region. The connection with Altowaisha needs upgrading.

The South Darfur State Spatial Action Plan (proposed)

Strategic interventions along the Development Corridors (DCs)

Two *Primary Development Corridors* (DCs) cut across South Darfur: one along a north-south direction starting from Libya and linking Al Fashir, the capital of North Darfur, to Marshang and Nyiala and all the way down to the Central African Republic (south), through Id-Alfursaan, Rihaid-Albardi and Omdafoog. The second primary DC across South Darfur follows a southeast-west direction, starting from Northern Kordofan State and linking Aldiain (capital of East Darfur) to Nyiala and Alginaina (capital of West Darfur), all the way to the border with Chad (west). The other major urban settlements in South Darfur along this corridor are Bilail and Kass.

On top of these, the State also features a *Secondary DC* stretching from east to west, linking East Darfur to Booram and the Primary EDA which includes Id-Alfursaan, Rihaid-Albardi, Kateela and Tulus, and ending at the border with the Central African Republic.

Like those in North Darfur, these three corridors provide privileged locations for major infrastructure investments across South Darfur, and the proposed plans are as follows:

- Organisation of fora and workshops, in order to identify key interventions that could develop the urban centres along these corridors.
- Preparation of feasibility studies for:
 - Extension of the railway network from Niyala to Al Fashir through Marshang along the north-south Primary DC, and from Niyala to Kass, as proposed under the 2012-2016 National Strategic Plan.
 - Extending the power grid along the two Primary DCs and the Secondary DC within South Darfur.
 - Upgrading existing roads between Booram, Tulus, Kateela and Rihaid-Albardi.

Strategic interventions for the Economic Development Areas (EDAs)

South Darfur is the only State in the region with two *Primary EDAs*: one comprised of Niyala, Bilail and Kass, accounting for 30% of the State's population (2008 Census) and 73% of the total displaced population in the State (UNHCR, 2012); the other EDA includes Rihaid-Albardi, Id-Alfursaan, Tulus and Kateela, with 24% of the South Darfur population.

The following is proposed for the Niyala - Bilail - Kass Primary EDA:

- Niyala and Kass are located along the national highway under construction and are served by rail. The road to Bilail will be upgraded. Niyala has an international airport and Kass an airstrip; Kass will also be connected by rail under the 2012-2016 National Strategic Plan.
- In terms of infrastructure and basic services, it is essential to connect this EDA to the power grid, as it currently depends on thermal generators. While Niyala is served by specialised and private hospitals and has good education facilities, both Kass and Bilail localities need more healthcare and education services. Bilail has moderately adequate drinking water availability, while WASH needs improvement in both Niyala and Kass. In Niyala groundwater has been overused due to the impact of the Kalma, Outach and Deraige IDP camps.
- In this EDA, existing and potential economic functions related to construction, support services and mining are good. Meanwhile, the agricultural potential needs improvement in all localities, although it is good in Bilail with regard to irrigated agriculture and Kass benefits from fertile soils and adequate climate conditions. Kass also has mining potential and is considered suitable for a cement factory.
- A range of diverse professional services are available in this EDA. A new vocational school in Bilail would enhance specific professional training programmes.

- Again, considering the novelty of the EDA concept presented here, it would be important to prepare a Strategic Development Plan for the area, focussing on current opportunities and challenges, as well as improvement of basic services. A well-planned extension of Niyala is crucial, including integration of the Dereig IDP camp into the town's spatial fabric.

Regarding the Rihaid-Albardi - Id-Alfursaan - Tulus - Kateela Primary EDA, the following is proposed:

- In terms of connectivity, roads across this EDA must be upgraded; Rihaid-Albardi and Id-Alfursaan stand to benefit from a planned regional highway. To the exception of Tulus, all localities feature airstrips. Unfortunately, this EDA will not be served by rail in the near future, a gap that could be addressed in the medium term.
- As for basic services and infrastructure, this EDA depends on thermal power generators and it must be connected to the regional grid in the near future if its potential is to be enhanced. While education facilities in this EDA are found to be suitable as per national standards, health coverage needs serious improvement across the EDA, especially in Id-Alfursaan and Tulus. WASH standards are also low, and tapping the available underground and surface water potential in Id-Alfursaan, Kateela and Tulus would help; major efforts are needed to improve sanitation.
- From an economic development standpoint, this EDA has good agricultural and livestock potential, especially in Tulus, while in Kateela oil seed production is satisfactory.
- Although the matrix of functions shows that an adequate range of professional services is available in Rihaid-Albardi and Tulus, but the same cannot be said of Id-Alfursaan or Kateela.
- Rihaid-Albardi, being the major urban centre in the EDA, needs a Base Urban Plan if future expansion is

to be adequately mapped out. This plan should be part of a broader-ranging strategy that addresses the needs of the whole EDA, especially regarding connectivity and basic services (healthcare and WASH). On the whole, the objective would be to make the most of the still under-developed potential of this Primary EDA in an effort to strengthen the southern reaches of Darfur.

South Darfur features one *Secondary EDA* which includes Marshang and Nitaiga, as well as Shiaryya in East Darfur State. The rationale for this cross-State setup is that in effect, these three settlements are already closely bound together and complement each other in terms of socio-economic functions. This Secondary EDA is strategically located between the Primary EDA of North Darfur including Al Fashir, the Primary EDA of South Darfur including Niyala, and the Primary EDA of East Darfur including Aldiain. Consequently, this secondary development area could work as an important “pivot” facilitating

stronger interaction between these three Primary EDAs. The following is proposed for this Secondary EDA:

- The national highway under construction runs between Marshang and Nitaiga, which is an advantage. Road connectivity between the three settlements should be further strengthened. The EDA could also greatly benefit from a connection to both the rail and electricity networks. These should be considered as priority interventions for this EDA.
- As pinpointed in the multi-criteria evaluation (SMCE), this EDA needs improvement both in terms of education and healthcare facilities, especially in Nitaiga and Shiaryya. Available surface water in Marshang could help improve access to safe drinking water.
- The EDA has good agriculture potential, with Shiaryya well known for livestock. There is gold mining potential in Marshang.

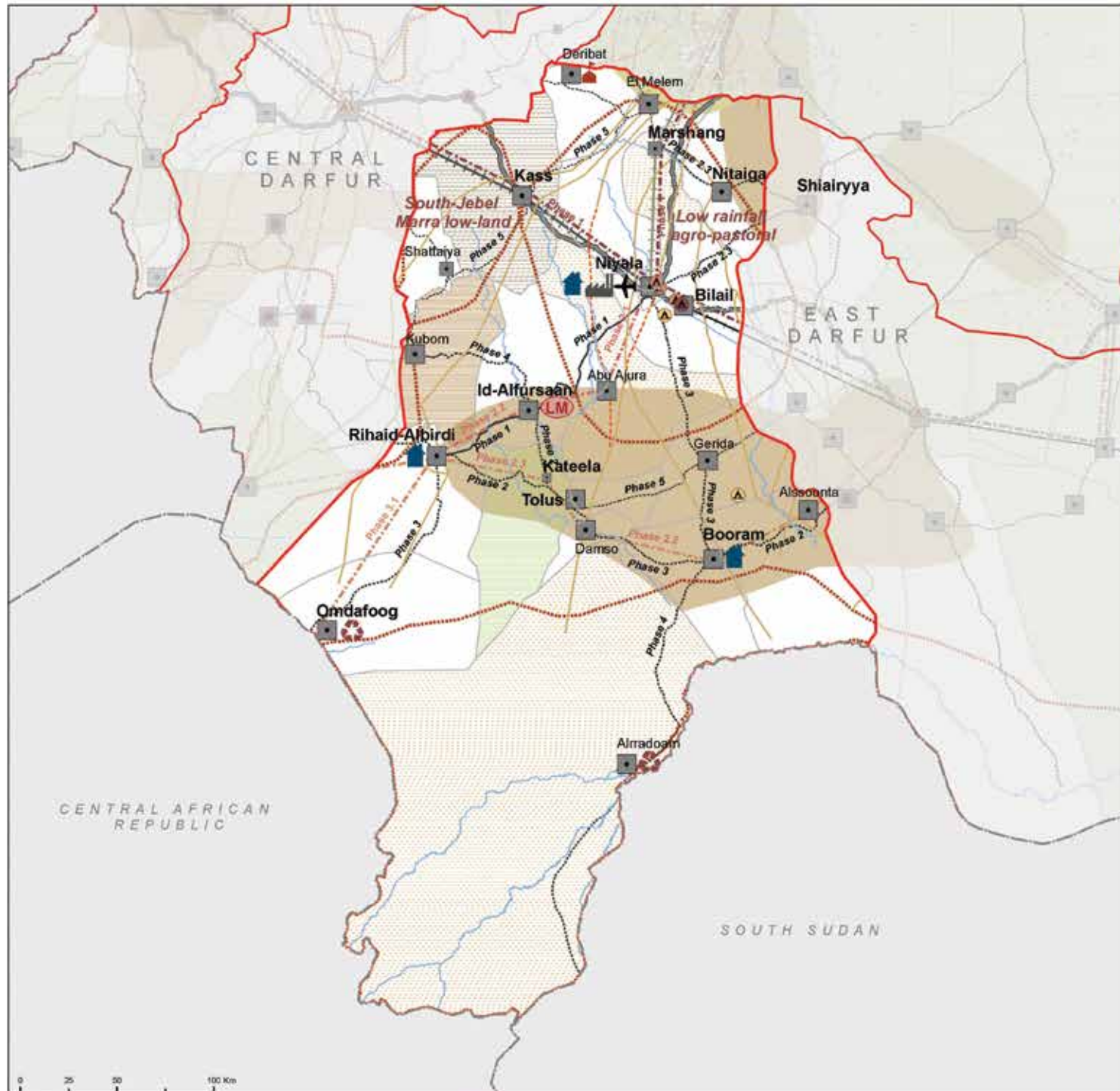
- Importantly, if this area is to act as a more effective “pivot EDA” between the three Primary EDAs as described above, the diversity of professional services must be improved, especially in Shiaryya.

Strategic interventions in Nodal Towns (NTs)

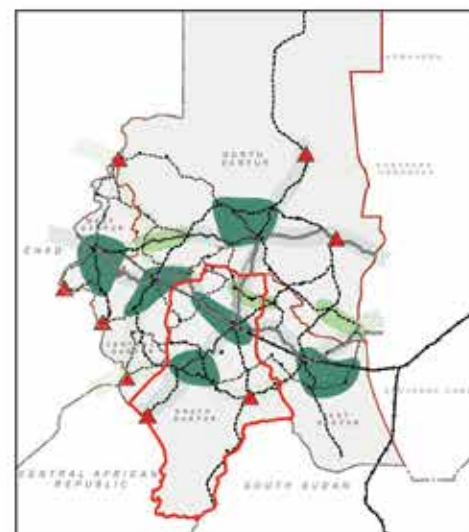
Two nodal towns are proposed for South Darfur: (i) Omdafoog, located on the border with the Central African Republic; and (ii) Booram, located in the middle of the east-west Secondary DC linking the Primary EDA of East Darfur (including Aldiain) and the Primary EDA of South Darfur (including Rihaid-Albirdi). Both NTs call for significant improvements in terms of access to basic services and infrastructure. While Omdafoog is relatively small (around 60,000 inhabitants) and is known for fish production, Booram is a fairly important town with over 140,000 inhabitants. Booram benefits from fertile soil, water, rangeland, gum arabic production and a veterinary clinic.

MAP SSAP02: SOUTH DARFUR STATE STRATEGIC ACTION PLAN

REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



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|---|---------------|------------|----------|---------------|-----------|---------------|----------|---------------|---|---|
| <p>Urban settlements</p> <ul style="list-style-type: none"> 0-20.000 hab. 20.000 - 50.000 hab. > 50.000 hab. <p>Rural Settlements</p> <ul style="list-style-type: none"> Village <p>IDPs Camps urbanized</p> <table border="0"> <tr> <td>Distance</td> <td>Population</td> </tr> <tr> <td>0 - 2 km</td> <td>> 20.000 IDPs</td> </tr> <tr> <td>2 - 10 km</td> <td>> 20.000 IDPs</td> </tr> <tr> <td>10-50 km</td> <td>> 20.000 IDPs</td> </tr> </table> <ul style="list-style-type: none"> Main rivers and Wadi Locality boundaries South Darfur International Boundaries | Distance | Population | 0 - 2 km | > 20.000 IDPs | 2 - 10 km | > 20.000 IDPs | 10-50 km | > 20.000 IDPs | <p>Infrastructure Connection Network</p> <ul style="list-style-type: none"> Road Network National Highway Under Construction National Highway Planned Regional Road Under Construction/Planned Regional Road Proposed State Road Proposed <p>Railway Network</p> <ul style="list-style-type: none"> Existing Railway Primary Proposed Railway Extension Secondary Proposed Railway Extension <p>Airports</p> <ul style="list-style-type: none"> Airports <p>Electricity Network</p> <ul style="list-style-type: none"> Phase 1 Phase 2 Phase 3 <p>Migration Routes</p> <ul style="list-style-type: none"> Blocked routes Current Routes | <ul style="list-style-type: none"> Grazing Areas (FAO, 2010) Mining areas Agroindustry potential economic areas Sugar Cane Oil Seeds Cement Factory Tabacco Production Major gum arabic area Existing Factories Existing livestock market (LM) Existing livestock and crop market (LC) Proposed crop and vegetable market (CV) Border trades Tourism/Archaeological place Existing vocational/technical school Proposed vocational/technical school |
| Distance | Population | | | | | | | | | |
| 0 - 2 km | > 20.000 IDPs | | | | | | | | | |
| 2 - 10 km | > 20.000 IDPs | | | | | | | | | |
| 10-50 km | > 20.000 IDPs | | | | | | | | | |



The West Darfur State Spatial Action Plan (proposed)

Strategic interventions along the Development Corridors (DCs)

Alginaina, capital of West Darfur and on the border with Chad, is the point of convergence of two *Primary DCs*: one along an east-west direction originating in Al Fashir, capital of North Darfur, and including Kirainik, and another, southeast-west corridor originating in Nyiala, capital of South Darfur.

Again, these corridors should provide the privileged basis for major infrastructure investments in West Darfur. For these DCs, the following activities are proposed:

- Holding fora and workshops to identify how best to develop the urban settlements located along these corridors.
- Preparation of feasibility studies for:
 - Extension of the railway network from Nyiala to Alginaina through Kirainik along the southeast-west Primary Development Corridor;
 - Extension of the power grid along these two Primary DCs.

Strategic interventions in the Economic Development Area (EDA)

West Darfur is characterised by one *Primary EDA* comprised of Alginaina, Kirainik and Habeela which, according to the 2008 Census, account for more than 50% of the State population and 85% of

the displaced population (UNHCR, 2012). The following is proposed for this EDA:

- Alginaina and Kirainik are well connected by road (both sit on a national highway), improvements are needed between Alginaina and Habeela. Alginaina has a national airport and Kirainik an airstrip. Extension of the existing railway network is proposed under the 2012-2016 National Strategic Plan.
- As for basic services and infrastructure, Alginaina and Kirainik rely on thermal generators for power and need to be connected to the grid. The multi-criteria evaluation (SMCE) shows that serious improvements are needed in terms of healthcare coverage and WASH in this whole development area. More schools are required in Alginaina.
- Economically, this EDA is particularly suitable in terms of agricultural potential, especially fruit, vegetables and sugar cane. Since Alginaina is a major market town in Darfur due to its location close to the border with Chad, commercial facilities must be improved. Habeela is a suitable area for a cement factory.
- Alginaina offers an adequate range of professional services. However, the same cannot be said for Kirainik and Habeela, which would benefit from more vocational training. A labour market survey could provide a reasonably detailed assessment of needs.

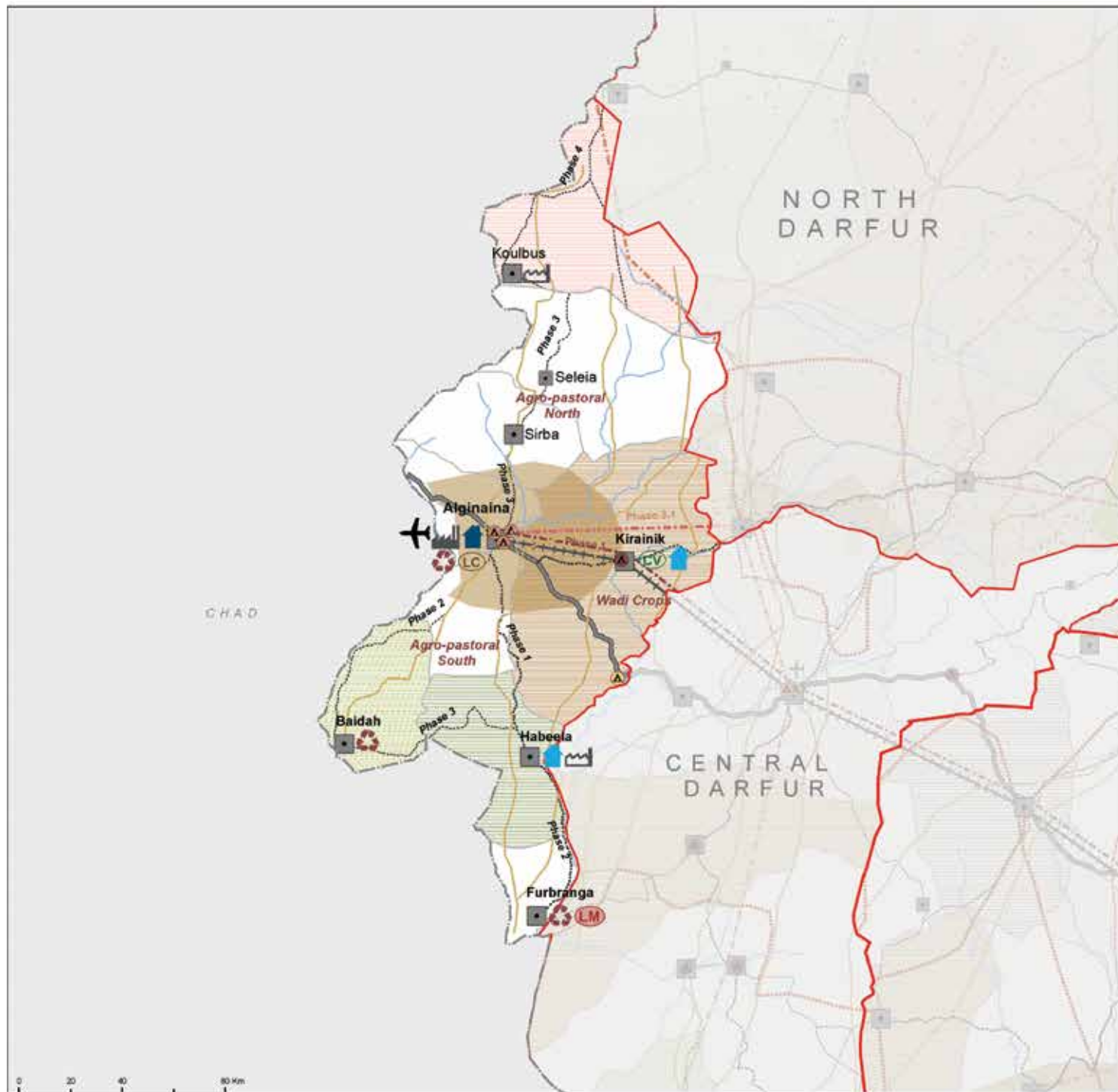
- A Strategic Development Plan could also be devised, as with the other EDAs, with special attention given to road connectivity issues and provision of basic services. Special recommendations would be necessary regarding IDP integration into urban areas, considering that West Darfur has the largest number of IDPs of the whole region. Alginaina urgently needs more detailed urban planning instruments, short of which the current rapid though uneven (in terms of urban patterns) pace of expansion will become unmanageable.

Strategic interventions in Nodal Towns (NTs)

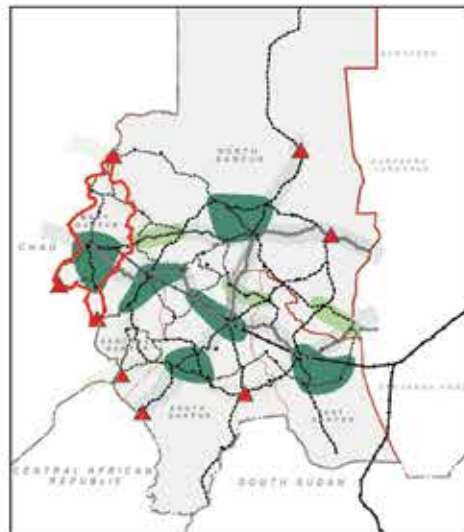
West Darfur features two important nodal towns, both located along the border with Chad: Baidah and Furbranga. In 2008, Furbranga had a population of almost 100,000, being one of the largest livestock markets in Darfur and, therefore, a strategic trade centre. Efforts should be made to improve the town's urban settings and commercial facilities as well as connectivity with the rest of the State and Central Darfur. As for Baidah, it is half the size of Furbranga and has a reputation for seed oil and groundnuts. This prospective nodal town would also benefit greatly from better connectivity with the rest of West Darfur. In both NTs, basic services (education and healthcare facilities, access to improved WASH standards) need significant reinforcement.

MAP SSAP03: WEST DARFUR STATE STRATEGIC ACTION PLAN

REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



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|---|---------------|------------|------------|---------------|-------------|---------------|------------|---------------|--|---|
| <p>Urban settlements</p> <ul style="list-style-type: none"> ■ 0-20.000 hab. ■ 20.000 - 50.000 hab. ■ > 50.000 hab. <p>Rural Settlements</p> <ul style="list-style-type: none"> • Village <p>IDPs Camps urbanized</p> <table border="0"> <tr> <td>Distance</td> <td>Population</td> </tr> <tr> <td>● 0 - 2 km</td> <td>> 20.000 IDPs</td> </tr> <tr> <td>● 2 - 10 km</td> <td>> 20.000 IDPs</td> </tr> <tr> <td>● 10-50 km</td> <td>> 20.000 IDPs</td> </tr> </table> <ul style="list-style-type: none"> — Main rivers and Wadi □ Locality boundaries □ South Darfur □ International Boundaries | Distance | Population | ● 0 - 2 km | > 20.000 IDPs | ● 2 - 10 km | > 20.000 IDPs | ● 10-50 km | > 20.000 IDPs | <p>Infrastructure Connection Network</p> <p>Road Network</p> <ul style="list-style-type: none"> — National Highway Under Construction — National Highway Planned — Regional Road Under Construction/Planned --- Regional Road Proposed --- State Road Proposed <p>Railway Network</p> <ul style="list-style-type: none"> — Existing Railway — Primary Proposed Railway Extension — Secondary Proposed Railway Extension <p>✈ Airports</p> <p>Electricity Network</p> <ul style="list-style-type: none"> --- Phase 1 --- Phase 2 --- Phase 3 <p>Migration Routes</p> <ul style="list-style-type: none"> --- Blocked routes --- Current Routes | <ul style="list-style-type: none"> ■ Grazing Areas (FAO, 2010) ■ Mining areas ■ Agroindustry potential economic areas ■ Sugar Cane ■ Oil Seeds ■ Cement Factory ■ Canning fruit potential ■ Major gum arabic area ■ Existing Factories ■ Proposed Factories ■ Existing livestock market ■ Existing livestock and crop market ■ Proposed crop and vegetable market ■ Border trades ■ Existing vocational/technical school ■ Proposed vocational/technical school |
| Distance | Population | | | | | | | | | |
| ● 0 - 2 km | > 20.000 IDPs | | | | | | | | | |
| ● 2 - 10 km | > 20.000 IDPs | | | | | | | | | |
| ● 10-50 km | > 20.000 IDPs | | | | | | | | | |



The Central Darfur State Spatial Action Plan (proposed)

Strategic interventions along the Development Corridors (DCs)

Under the strategy proposed in this report, Central Darfur is, somewhat predictably, in the privileged position of being crossed by the *Primary Development Corridor* which, running in a southeast-westward direction, links the capitals of all the four other States in the Darfur region. Two major Central Darfur settlements are located along this important corridor: Zalingay and Nairtaty.

A *Secondary DC* also cuts across Central Darfur, this time in a north-south direction, originating at the border with Chad and running through El Tina, Saraf-Omra (North Darfur), Zalingay, Garsilah, Mukjar and Omdukhon (Central Darfur), all the way to the border with the Central African Republic.

These two development corridors should provide a privileged location for major infrastructure development in Central Darfur. For this purpose, the following activities could be undertaken:

- Holding fora and workshops to agree on how best to develop the urban centres located along these corridors.
- Feasibility studies for:
 - Extension of the railway network from Niyala to Zalingay through Kass along the southeast-west Primary DC, as proposed under the 2012-2016 National Strategic Plan;
 - Extension of the power grid along the Primary DC;
 - Upgrading existing roads in the Secondary DC linking Zalingay to Garsilah, Mukjar and Omdukhon.

Strategic interventions for the Economic Development Area (EDA)

Just like its western counterpart, Central Darfur features one single *Primary EDA*. The area includes Zalingay, Nairtaty and Garsilah, which account for half of the State population and the majority of IDPs. The following is proposed for this EDA:

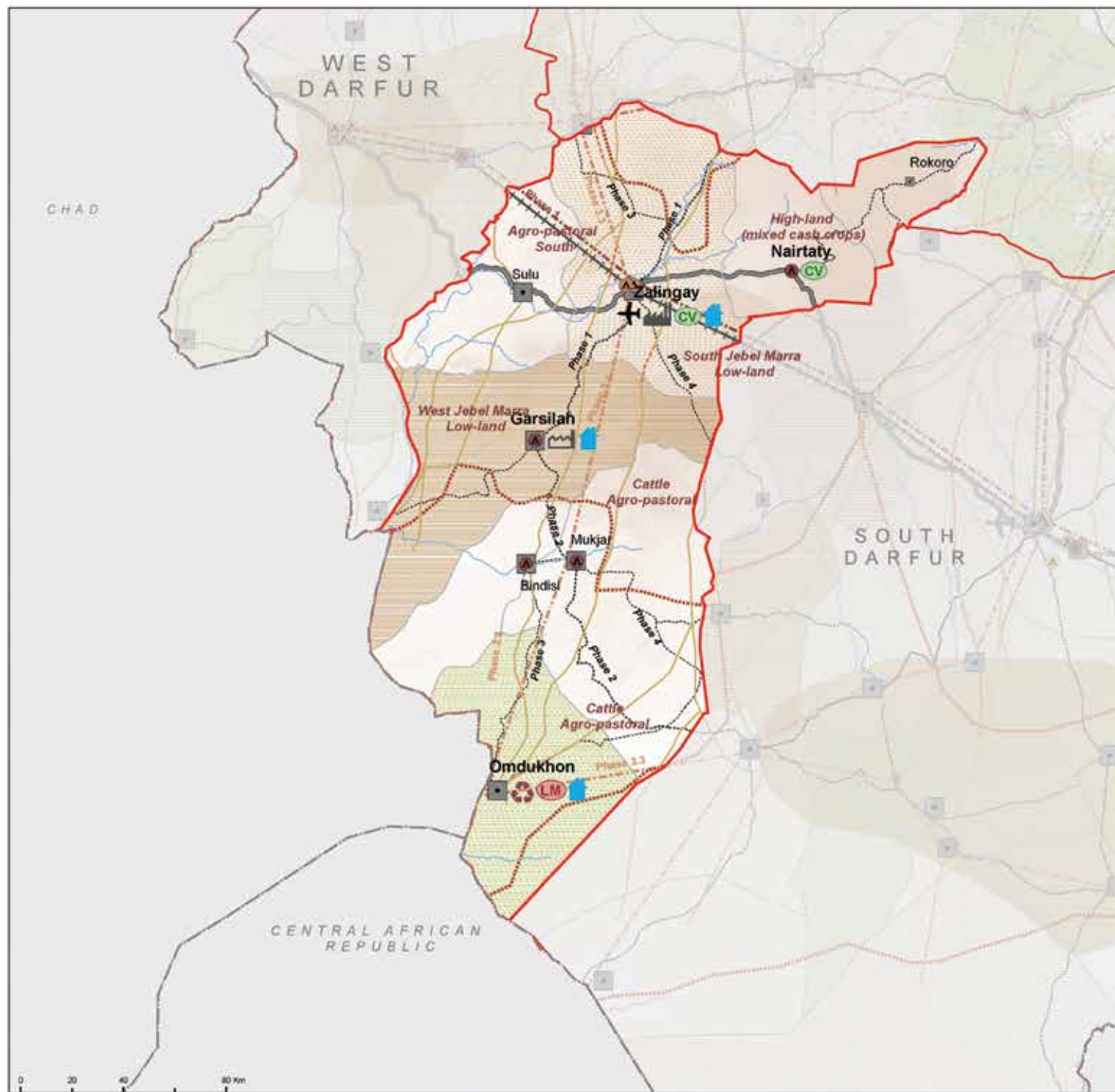
- In terms of connectivity, both Zalingay and Nairtaty sit along a national highway, but the road from Zalingay to Garsilah must be improved. An airport is currently under construction at Zalingay and Nairtaty has an airstrip. The above-mentioned extension of the rail link to Zalingay would complement these current and prospective assets for the Central Darfur economy
- As for basic services and infrastructure, the multi-criteria evaluation (SMCE) shows that Zalingay and Nairtaty meet healthcare coverage requirements, but Garsilah needs more facilities per population. Zalingay needs more schools, and WASH must be improved across the EDA. In terms of electric power, both Zalingay and Garsilah rely on thermal generators, but conditions look more challenging in Nairtaty.
- Regarding economic potential, this EDA is particularly suitable for agriculture production, especially vegetables and fruit. In this particular respect, Nairtaty is one of the most important commercial centres, thanks to the proximity of the Jebel Marra plateau. Garsilah is well known for livestock and associated vast grazing expanses, while mining is prominent in Zalingay.
- The range of professional services in the EDA needs urgent diversification, to be provided through adequate vocational training.

- As with other EDAs, a Strategic Development Plan should be devised, with the focus on improved basic services delivery. Being the major urban centre, Zalingay needs adequate urban planning instruments.

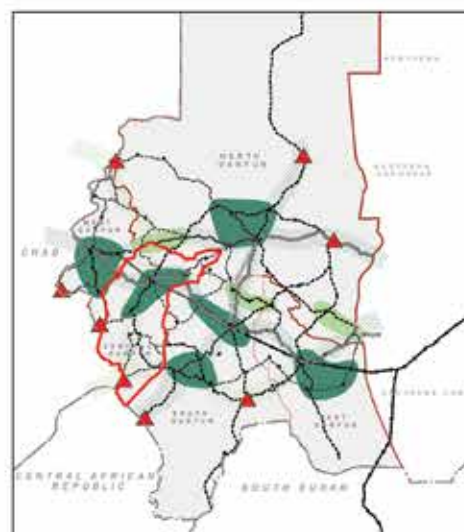
Strategic interventions in the Nodal Town (NT)

Omdukhon is the only NT identified for Central Darfur. This town of approximately 90,000 inhabitants is strategically located close to the borders with both the Central African Republic and Chad. Economically, this urban centre shows significant potential with oilseed factories, the largest livestock market in the State as well as gold mining. The pace of expansion of Omdukhon is likely to be brisk, and consequently this proposed Nodal Town calls for adequate urban planning and management instruments, including a Base Urban Plan.

MAP SSAP04: CENTRAL DARFUR STATE STRATEGIC ACTION PLAN
REGIONAL SPATIAL PLANNING STRATEGY OF DARFUR



- | | | | | | | | | | | |
|--|---------------|------------|------------|---------------|-------------|---------------|------------|---------------|--|--|
| <p>Urban settlements</p> <ul style="list-style-type: none"> 0-20.000 hab. 20.000 - 50.000 hab. > 50.000 hab. <p>Rural Settlements</p> <ul style="list-style-type: none"> Village <p>IDPs Camps urbanized</p> <table border="0"> <tr> <td>Distance</td> <td>Population</td> </tr> <tr> <td>● 0 - 2 km</td> <td>> 20.000 IDPs</td> </tr> <tr> <td>▲ 2 - 10 km</td> <td>> 20.000 IDPs</td> </tr> <tr> <td>▲ 10-50 km</td> <td>> 20.000 IDPs</td> </tr> </table> <p>— Main rivers and Wadi</p> <p>□ Locality boundaries</p> <p>▭ Central Darfur</p> <p>▭ International Boundaries</p> | Distance | Population | ● 0 - 2 km | > 20.000 IDPs | ▲ 2 - 10 km | > 20.000 IDPs | ▲ 10-50 km | > 20.000 IDPs | <p>Infrastructure Connection Network</p> <p>Road Network</p> <ul style="list-style-type: none"> National Highway Under Construction National Highway Planned Regional Road Under Construction/Planned Regional Road Proposed State Road Proposed <p>Railway Network</p> <ul style="list-style-type: none"> Existing Railway Primary Proposed Railway Extension Secondary Proposed Railway Extension <p>✈ Airports</p> <p>Electricity Network</p> <ul style="list-style-type: none"> Phase 1 Phase 2 Phase 3 <p>Migration Routes</p> <ul style="list-style-type: none"> Blocked routes Current Routes | <ul style="list-style-type: none"> Grazing Areas (FAO, 2010) Mining areas Agroindustry potential economic areas Sugar Cane Oil Seeds Existing Factories Proposed Factories Existing livestock market (LM) Existing livestock and crop market (LC) Existing crop and vegetable market (LC) Border trades Existing vocational/technical school Proposed vocational/technical school |
| Distance | Population | | | | | | | | | |
| ● 0 - 2 km | > 20.000 IDPs | | | | | | | | | |
| ▲ 2 - 10 km | > 20.000 IDPs | | | | | | | | | |
| ▲ 10-50 km | > 20.000 IDPs | | | | | | | | | |



The East Darfur State Spatial Action Plan (proposed)

Strategic interventions along the Development Corridors (DCs)

Like its central counterpart, East Darfur is crossed by one and the same southeast-westward *Primary Development Corridor* which links it to all four other States in the region. The DC starts in Northern Kordofan and enters Darfur through Allayiet (North Darfur), running through Aldiain (East Darfur) and continuing towards Niyala (South Darfur), Zalingay (Central Darfur), Alginaina (West Darfur) and the border with Chad.

An east-west *Secondary DC* links Aldiain and Alfirmose (East Darfur) to the second *Primary EDA* of South Darfur (Tolus, Kateela, Rihaid-Albirdi and Id-Alfursaana) through Booram, and ending at Omdukhon (West Darfur) on the border with the Central African Republic. These two development corridors should serve as the destinations of choice for major infrastructure development in East Darfur. For this purpose, the following is proposed:

- Holding fora and workshops to identify how best to develop the urban centres located along these corridors.
- Feasibility studies for:
 - Extension of the railway network from Adeela to Allayiet, as proposed under the 2012-2016 National Strategic Plan;
 - Extension of the power grid along both the *Primary* and *Secondary DCs*;
 - Upgrading existing roads in the *Secondary DC* between Aldiain and Alfirmose.

Strategic interventions for the Economic Development Area (EDA)

East Darfur features a single *Primary EDA* which includes Aldiain, Adeela and Abu-Jabra. This EDA accounts for half of the State's population and the majority of IDPs. The following is proposed for this EDA:

- Aldiain is located along the future extension of the existing national highway, but the road connection across the EDA needs generally to be improved. An airport is currently under construction in Aldiain. The rail link from Aldiain to Adeela is a major asset for the area. The 2012-2016 National Strategic Plan proposes to extend the railway from Adeela to Allayiet.
- Aldiain and Abu Matariq are the only towns in East Darfur served by thermal generators. It is, therefore, crucial to include this EDA in the future expansion of the power grid in Darfur. According to the multi-criteria evaluation (SMCE), Adeela has the best health coverage in the whole EDA, although it does not meet national standards. In particular, Aldiain could do with improved healthcare facilities per population. Regarding education facilities, this EDA is rated as suitable. Major improvements are needed for access to safe drinking water, probably by taking advantage of the underground and surface water potential of Abu Matariq, while sanitation in Aldiain is above the State average.
- The strategic location of this EDA makes it particularly suitable for livestock production. Abu Matariq is Darfur's commercial gateway to South Sudan, with forests and good soils as additional assets. Oil seeds are the main crop in Adeela and Abu-Jabra.

- A range of professional services are available in Aldiain and Abu Matariq, but the same cannot be said of Adeela and Abu-Jabra. A labour market survey could identify the gaps to be addressed through professional and vocational training.

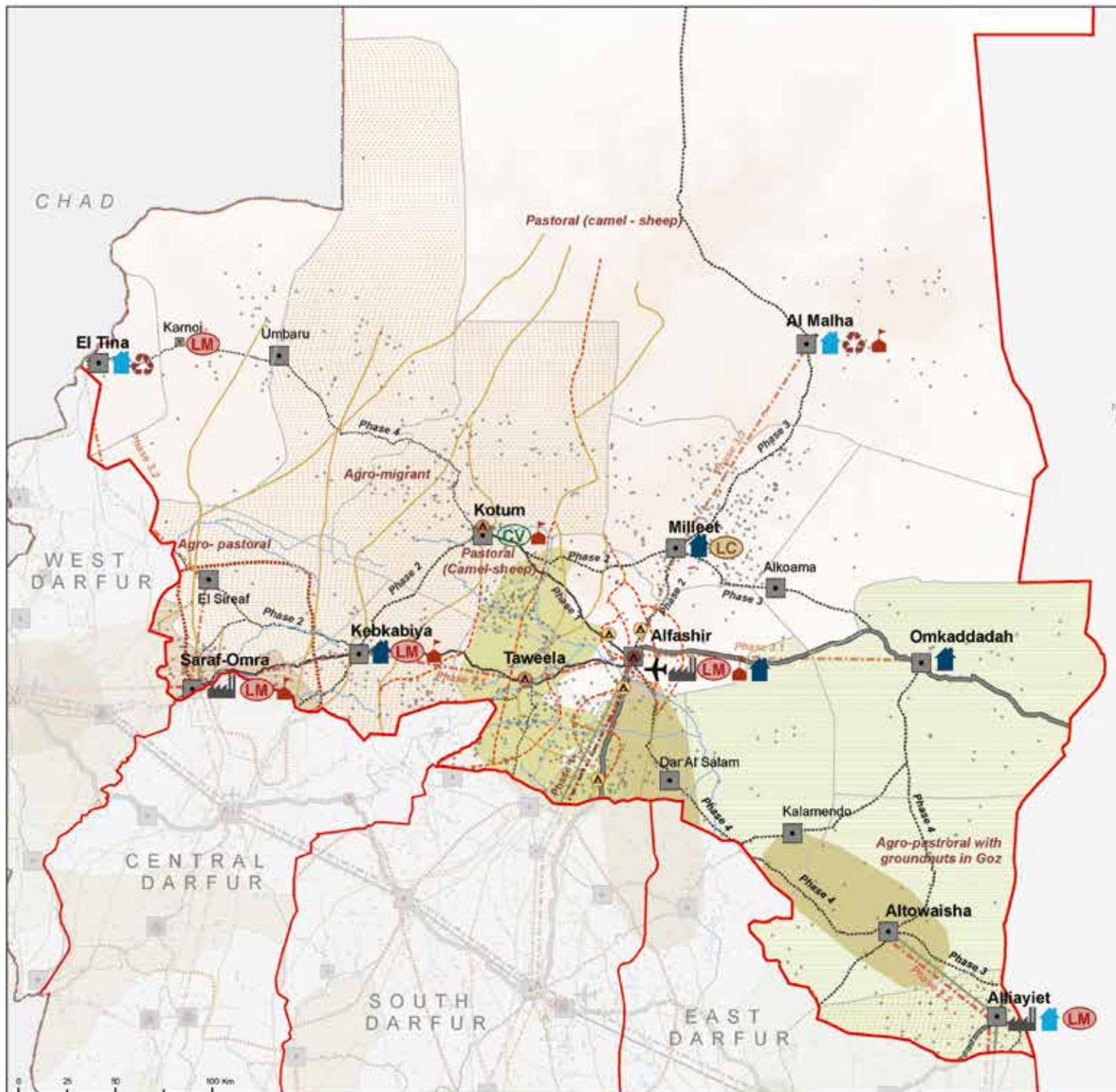
- A Strategic Development Plan is needed for the EDA, exploring opportunities further to develop its economic potential. Aldiain, the capital, is fast-expanding and is in urgent need of appropriate urban planning tools.

Strategic interventions in the Nodal Town (NT)

On top of its location in the *Primary EDA* of East Darfur, Abu Matariq is a proposed nodal town, being the last urban centre in Darfur before the border with South Sudan. Due to this strategic location, this is a well-populated town (about 160,000). As already mentioned, it has good livestock and agriculture potential, but market facilities leave room for improvement. Since further rapid expansion is to be expected, Abu Matariq, like many similar towns in Darfur, urgently needs an urban development plan.

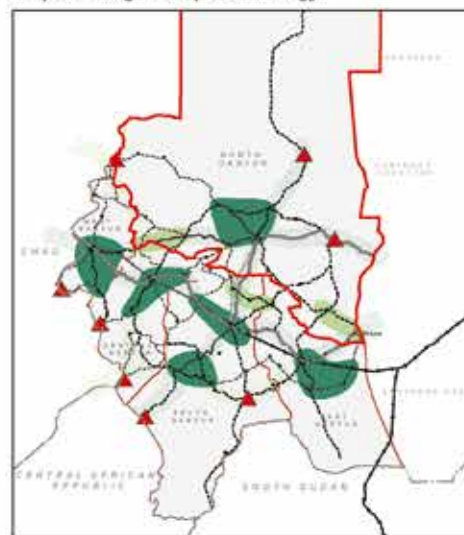
MAP SSAP05: EAST DARFUR STATE STRATEGIC ACTION PLAN

REGIONAL SPATIAL PLANNING STRATEGY OF DAFUR



- | | | | | | | | | | | |
|---|---------------|------------|------------|---------------|-------------|---------------|------------|---------------|--|--|
| <p>Urban settlements</p> <ul style="list-style-type: none"> ■ 0-20.000 hab. ■ 20.000 - 50.000 hab. ■ > 50.000 hab. • Rural settlements <p>IDPs Camps urbanized</p> <table border="0"> <tr> <td>Distance</td> <td>Population</td> </tr> <tr> <td>● 0 - 2 km</td> <td>> 20.000 IDPs</td> </tr> <tr> <td>● 2 - 10 km</td> <td>> 20.000 IDPs</td> </tr> <tr> <td>● 10-50 km</td> <td>> 20.000 IDPs</td> </tr> </table> <p>— Main rivers and Wadi</p> <p>□ Locality boundaries</p> <p>▭ State Boundaries</p> <p>▭ International Boundaries</p> | Distance | Population | ● 0 - 2 km | > 20.000 IDPs | ● 2 - 10 km | > 20.000 IDPs | ● 10-50 km | > 20.000 IDPs | <p>Infrastructure Connection Network</p> <p>Road Network</p> <ul style="list-style-type: none"> — National Highway Under Construction — National Highway Planned — Regional Road Under Construction/Planned — Regional Road Proposed — State Road Proposed <p>Railway Network</p> <ul style="list-style-type: none"> — Existing Railway — Primary Proposed Railway Extension — Secondary Proposed Railway Extension <p>✈ Airports</p> <p>Electricity Network</p> <ul style="list-style-type: none"> — Phase 1 — Phase 2 — Phase 3 <p>Migration Routes</p> <ul style="list-style-type: none"> — Blocked routes — Current Routes | <p>▭ Grazing Areas (FAO, 2010)</p> <p>▭ Mining areas</p> <p>Agroindustry potential economic areas</p> <ul style="list-style-type: none"> ▭ Sugar Cane ▭ Oil Seeds ▭ Tobacco Production ▭ Major gum arabic area <p>▭ Existing Factories</p> <p>LM Existing livestock market</p> <p>LC Existing livestock and crop market</p> <p>CV Proposed crop and vegetable market</p> <p>♻ Border trades</p> <p>🏛 Tourism/Archaeological place</p> <p>🎓 Existing vocational/technical school</p> <p>🎓 Proposed vocational/technical school</p> |
| Distance | Population | | | | | | | | | |
| ● 0 - 2 km | > 20.000 IDPs | | | | | | | | | |
| ● 2 - 10 km | > 20.000 IDPs | | | | | | | | | |
| ● 10-50 km | > 20.000 IDPs | | | | | | | | | |

Proposed Regional Spatial Strategy



CONCLUSIONS AND WAY FORWARD

It has been a tall challenge developing the *Regional Spatial Planning Strategy of Darfur* (RSPSD), especially because of poor access to the various research areas and to consistent, reliable data on which to build. The drafting team has made every effort to apply a method which is easily understandable and enables effective participation of both government officials and local stakeholders. It is the firm conviction of the drafting team that this work was an indispensable prerequisite to any preliminary, fundamental understanding of the spatial patterns and current dynamics prevailing across the length and breadth of Darfur. The method used throughout this report has made it possible to identify those geographical areas with greater potential and where investments could be concentrated and prioritised, and to do so with a fair degree of accuracy and using an unbiased scientific approach. The resulting RSPSD is designed to support spatial decision-making with the ultimate objective of facilitating reconciliation and peace stabilisation in Darfur and in Sudan as a whole. The strategy represents a solid basis on which the future development of this important region of Sudan can be planned in a more consistent, effective way.

This is particularly the case with the significant challenge posed by internally displaced persons, for which the RSPSD aims to provide effective guidance regarding practical solutions, pinpointing the areas where return, reintegration or urbanisation of consolidated camps are most relevant. The persistence, over so many years, of IDP camps within major urban settlements, or just outside or in surrounding areas, has brought persons displaced from largely rural areas to adjust to and prefer urban life styles. A whole new generation has grown up in these camps and is unaware of the rural-based livelihood system in which their parents lived in the past. As a result, this massive population displacement has caused an irreversible urban “explosion” and it is high time adequate instruments are developed to start coping with it in a more sustainable manner.

From this perspective, the DRSPS advocates the deployment and strengthening of a network of intermediate urban centres that can bring about more balanced spatial development across Darfur, which would alleviate the current pressures on State capitals. These intermediate urban centres can act as socioeconomic and interconnected nodes, putting them in a better position to supply goods and services for both their urban population and the rural settlements within their area of influence. If only incrementally, a larger segment of the Darfur population, including IDPs, are destined to settle in and around urban areas, as these provide more secure living conditions and a wider range of livelihood options together with job creation and income-generating opportunities. This is why it is so important to set up vocational training facilities in urban settlements, and to take this as an opportunity to explore the local potential for “green” economy/development projects.

Implementation of the RSPSD would ideally be accompanied by proper decentralisation mechanisms and strengthening of local institutional capacities. Further support to reconciliation among tribal groups is in order, as are efforts to build the required degree of trust between them and formal governmental institutions, which can be achieved through promotion of more participatory and community empowerment approaches. For this purpose, the technical, financial and administrative capacity of governments in both State and localities must be enhanced. This calls for significant re-engineering of existing institutions, introducing new roles and capacities. The broad vision and development-oriented recommendations of the RSPSD can play a critical role in this respect, provided that proper buy-in for its implementation is secured at the various political levels.

Ultimately, if sustainable urban development is to be achieved in Darfur, government authorities could further support involvement of the private sector, boosting socioeconomic and market activities, attracting investment, improving education and academic facilities, and reinforcing the role played by civil society organisations. Importantly, this would

require an enabling legal framework that would also address land issues and promote more pro-poor policies.

While the network of urban settlements can act as the backbone territorial structure of Darfur, the RSPSD also aims to enable the region to reach its full agricultural production and trading potentials. The network of towns would serve as market-places and help reinforce the agricultural processing chain, improving both internal and international trade. Furthermore, the nomadic/pastoralist corridors would need to be adequately negotiated and spatially demarcated, supported by proper water infrastructure. From a spatial development perspective, full advantage should be taken of existing mining opportunities and Darfur’s natural resources in general.

Finally, another aim of the RSPSD is to help identify areas that would lend themselves well to deployment of “quick-win” early recovery projects, contributing to peace building and stabilisation. Ideally, this report would serve as an essential guide to the reconstruction process in Darfur, providing a better understanding on where it is worth investing first, and why.

As far as the way forward is concerned, the strategy detailed in this Report, as developed with contributions from government and local stakeholders, needs to be politically validated at the highest institutional level in both Darfur and Sudan. In particular, the Spatial State Action Plans (SSAPs) now being drafted need to be thoroughly discussed and endorsed at State level. They should be followed by the development of more detailed spatial and cross-sector plans at the locality level, complete with a calendar of activities and investments as well as related budgeting.

Institutionally, the implementation of the RSPSD will be monitored by Sudan’s National Council for Physical Development, with coordination by the Darfur Regional Authority (DRA) at the next sub-level of government, with implementation on the ground left to the individual State Governments of Darfur. For this purpose, it will be fundamental to organise a proper dissemination of the RSPSD at the regional, State and locality levels.

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Appendices

TABLE MOF02: PREVALENT FUNCTIONS DISTRIBUTION BY TYPE OF LOCALITY

Type of Function	Local Urban Centre	Intermediate Urban Centre 2	Intermediate Urban Centre 1	Central Town	Number of Functions
Public Utilities and Facilities	- Mobile Phone repeater Tower - Army Camp - Water Supply Company - Permanent Water Supply - Irrigation System	- Electricity Company	- Post Office - National Highway - Radio Broadcasting Station - TV Broadcasting Station		10
Transportation Services	- Donkey/Horse-drawn carriages	- Bus Station - Airstrip - Petrol Station		- Airport - Railway Station	6
Commercial Establishments and Markets	- Established Grain Store - Grocery - Car Maintenance Workshop - Bakery - Construction Tools and Materials Stores - Furniture Store - Cooking Fuel Store - Cafeteria/Restaurant - Livestock Market - Crop Market - Unspecified Market	- Bank - Pharmacy - Crop and Livestock Market	- Manufacturing Plant	- Hotel and Lodging	16
Health Facilities	- Health Centre	- Rural Hospital	- Public Regional Hospital	- Private Hospital with surgical capacity - Specialized Hospital	5
Recreational Facilities	- Football field		- Cultural Centre	- Recreational Hall	3
Government Extension Services	- Local Government Office - Agriculture Office - Forestry - Animal Health Office	- Welfare Services			5
Judiciary Services		- Customary Court	- Court of Appeal	- Special Criminal Court	3
Security Services	- Police Station	- Prison	- Fire Station - Customs Office		4
Community Organizations	- Religious Organization - Trade/Labour Union	- Cooperative Union			3
Educational Institutions	- Kindergarten/ Nursery - Primary School - Secondary School (boys) - Secondary School (girls)		- University	- Vocational School - Post-Secondary College	7
Health Human Resources	- Doctor - Nurse - Midwife - Herbalist		- Dental surgery		5
Professional Services	- Teacher - Accountant	- Lawyer - Engineer - Surveyor - Electrician - Plumber	- Building Contractor - Architect		9
Personal Services	- Barber Shop - Tailor Shop - Laundry				3
N. of Functions	39	17	14	9	79

	LEVEL	LOCALITY	POPULATION				
SOUTH DARFUR	Central Town	Niyala	493,732				0
	Intermediate Urban City 2	Tolus	258,206				9
		Id-Alfursaana	216,933				10
		Kass	205,857				4
		Rihaid-Albirdi	205,392				8
		Booram	141,516				8
		Bilail	86,310				6
	Local Urban Centre	Kubom	188,272				5
		Nitaiga	154,773				5
		Alrradoam	134,043				6
		Damso	129,247				4
		Jabal-Marra East (deribat)	117,444				6
		Alssontaa	102,162				4
		El Salam	94,882				8
		Al Wehda (Melem)	93,306				5
		Gerida	92,577				6
		Omdafoog	60,631				4
		Shattaiya	46,706				6
Marshang		42,933				3	
Kateela	11,953				3		

CENTRAL DARFUR	Intermediate Urban City 1	Zalingay	108,631				7
	Intermediate Urban City 2	Wadi-Salih	196,771				9
	Local Urban Centre	Mukjar	108,860				7
		Omdukhon	90,099				6
		Azoom	65,879				7
		Bindisi	54,431				8
		Nairtaty	14,873				8
Rokoro	9,916				8		

	LEVEL	LOCALITY	POPULATION				
EAST DARFUR	Intermediate Urban City 1	Aldiain	214,027				3
	Intermediate Urban City 2	Bahr-Alarab	160,521				8
		Abu-Jabra	107,014				11
		Shiairyaa	64,208				5
		Adeela	64,280				8
	Local Urban Centre	Yaseen	192,625				4
		Alfirdose	170,180				4
		Asalaya	85,611				3
Abu-Karinka	74,910				3		

Existing function

Function to be added

Infrastructure Suitability Criteria Tree

Identify suitable areas in terms of infrastructure for settlement development and return of internally displaced persons (IDPs) in Darfur.

- 0.5 Areas should have access to **road** infrastructure
 - 0.3 A national highway under construction closer than 25 km is preferred, beyond 50 km it is not. **Data source:** network map UN-Habitat + GOS Norm: UN-Habitat
 - 0.25 A national highway planned closer than 25 km is preferred, beyond 50 km it is not. **Data source:** network map UN-Habitat + GOS Norm: UN-Habitat
 - 0.2 A regional highway under construction closer than 15 km is preferred, beyond 50 km it is not. **Data source:** network map UN-Habitat + GOS Norm: UN-Habitat
 - 0.15 A regional highway planned closer than 15 km is preferred, beyond 50 km it is not. **Data source:** network map UN-Habitat + GOS Norm: UN-Habitat
 - 0.1 A State highway planned closer than 15 km is preferred, beyond 25 km it is not. **Data source:** network map UN-Habitat + GOS Norm: UN-Habitat
- 0.2 Areas should have good access to **air** transport infrastructure
 - 0.35 If a locality has the benefit of an airport, it is preferred. **Data source:** UN-Habitat 2013
 - 0.3 If an area is closer to an airport, it is preferred. **Data source:** UN-Habitat 2013
 - 0.2 If a locality has the benefit of an airstrip, it is preferred. **Data source:** UN-Habitat 2013
 - 0.15 If an area is closer to an airstrip, it is preferred. **Data source:** UN-Habitat 2013
- 0.15 Areas should have good access to **rail** infrastructure
 - 0.65 If an area is closer to a town with a railway station but not

- further away than 50 km, it is preferred. **Data source:** SIM 2005 Norm: UN-Habitat 2013
 - 0.35 If an area is closer than 50 km and no more than 100 km from rail infrastructure, it is preferred. **Data source:** SIM 2005 Norm: UN-Habitat 2013
- 0.15 Areas should have access to **electricity** infrastructure - DJAM 2013 Pillar 1 obj. 3
 - 0.33 The sooner urban power grids are developed, the better. **Data source:** UN-Habitat 2013 Norm: UN-Habitat 2013
 - 0.27 If an area is closer than 5 km and no more than 10 km to the first phase regional power grid, it is preferred. **Data source:** UN-Habitat 2013 Norm: UN-Habitat 2013
 - 0.2 If an area is closer than 5 km and no more than 10 km to the second phase regional power grid, it is preferred. **Data source:** UN-Habitat 2013 Norm: UN-Habitat 2013
 - 0.13 If an area is closer than 5 km and no more than 10 km to the third phase regional power grid, it is preferred. **Data source:** UN-Habitat 2013 Norm: UN-Habitat 2013
 - 0.07 If an area is closer than 5 km and no more than 10 km to the fourth phase regional power grid, it is preferred. **Data source:** UN-Habitat 2013 Norm: UN-Habitat 2013

Healthcare Suitability Criteria Tree

Identify suitable areas in terms of curative and preventive healthcare for settlement development and return of internally displaced persons (IDPs) in Darfur.

- Areas should have access to and utilization of comprehensive health and nutrition services - DJAM 2013 Pillar 1 obj. 4
 - 0.25 Suitable areas should have the benefit of good healthcare infrastructure in the form of functional healthcare centres.

- 0.33 Suitable areas should have the benefit of good healthcare infrastructure in the form of Rural Hospitals (RH) **Data source:** Integrated Basic PHC Service: the road towards universal coverage. June 2012. Suliman Adegabbar, Federal Ministry of Health
 - 0.50 100,000 - 250,000 people per functioning Rural Hospitals (RHs) is required, less is better, more is worse. **Data:** WHO 2012. Norms: National Health Policy, 2007. Federal Ministry of Health
 - 0.50 1 Rural Hospital per locality is required, more is better and less is worse
- 0.33 Suitable areas should have the benefit of good healthcare infrastructure in the form of Primary Healthcare Centres (PHCCs) **Data source:** Integrated Basic PHC Service: the road towards universal coverage. June 2012. Suliman Adegabbar, Federal Ministry of Health
 - 1.00 10,000 - 20,000 people per functioning Primary Healthcare Centres (PHCCs) in a locality is required, fewer is better and more is worse. **Data:** WHO 2012. Norms: National Health Policy, 2007. Federal Ministry of Health
- 0.33 Suitable areas should have the benefit of good healthcare infrastructure in the form of Basic Health Units (BHUs) **Data source:** Integrated Basic PHC Service: the road towards universal coverage. June 2012. Suliman Adegabbar, Federal Ministry of Health
 - 1.00 5,000 people per functioning Basic Health Units (BHUs) in a locality is required, fewer is better, more is worse. **Data:** WHO 2012. Norms: National Health Policy,

2007. Federal Ministry of Health

- 0.35 Suitable areas should have the benefit of good healthcare in the form of adequate medical staff numbers per population segment and per PHCC
- 0.80 Suitable areas should have the benefit of adequate medical staff numbers per population segment
- 0.50 Suitable areas should have the benefit of curative care staff.
- 0.25 A locality where population per Medical Officers (MOs), is under the Darfur average (42,684) is considered good, but above that average the higher the worse.
Data: WHO 2012.
Norm: mean of the localities
- 0.25 A locality where population per Medical Assistants (MAs) is under the Darfur average (28,802) is considered good, but above that average the higher the worse.
Data: WHO 2012.
Norm: mean of the localities
- 0.25 A locality where population per nurse is under the Darfur average (22,267) is considered good, but above that average the higher the worse.
Data: WHO 2012.
Norm: mean of the localities
- 0.25 A locality where population per lab person is under the Darfur average (43,165) is considered good, but above that average the higher the worse.
Data: WHO 2012.
Norm: mean of the localities
- 0.50 Suitable areas should have the benefit of preventive care staff
- 0.18 A locality where population per Public Health Officers (PHOs) is under the Darfur average (35,343) is considered good, but above that average the higher the worse.
Data: WHO 2012.
Norm: mean of the localities
- 0.18 A locality where population per Midwife is under the Darfur average (20,164) is considered good, but above that average the higher the worse.
Data: WHO 2012.
Norm: mean of the localities
- 0.18 A locality where population per Nutritionist is under the Darfur average (30,072) is considered good, but above that average the higher the worse.
Data: WHO 2012.
Norm: mean of the localities
- 0.12 A locality where population per Vaccinator is under the Darfur average (31,172) is considered good, but above that average the higher the worse.
Data: WHO 2012.
Norm: mean of the localities
- 0.12 A locality where population per Community Health Worker is under the Darfur average (12,730) is considered good, but above that average the higher the worse.
Data: WHO 2012.
Norm: mean of the localities
- 0.06 A locality where population per Community Health Promoter is under the Darfur average (12,106) is considered good, but above that average the higher the worse.
Data: WHO 2012.
Norm: mean of the localities
- 0.06 A locality where population per Village Volunteer is under the Darfur average (8,197) is considered good, but above that average the higher the worse.
Data: WHO 2012.
Norm: mean of the localities
- 0.06 A locality where population per Traditional Birth Attendant is under the Darfur average (15,248) is considered good, but above that average the higher the worse.
Data: WHO 2012.
Norm: mean of the localities

- 0.06 A locality where population per Village Trained Midwife is under the Darfur average (28,182) is considered good, but above that average the higher the worse. **Data:** WHO 2012. *Norm: mean of the localities*
- 0.20 No suitable area should have Primary Healthcare Centres without medical staff.
- 0.50 Suitable areas should not feature shortfalls in curative care staff numbers
- 0.50 The lower the percentage of Primary HealthCare Centres without Medical Assistance in a locality, the more suitable it is. **Data:** WHO 2012. *Norm: mean of the localities*
- 0.50 The lower the percentage of Primary HealthCare Centres without Nurse in a locality, the more suitable it is. **Data:** WHO 2012. *Norm: mean of the localities*
- 0.50 No suitable area should have shortfalls in preventive care staff
- 0.25 The lower the percentage of Primary HealthCare Centres without Midwife in a locality, the more suitable it is. **Data:** WHO 2012. *Norm: mean of the localities*
- 0.25 The lower the percentage of Primary HealthCare Centres without Vaccinator in a locality, the more suitable it is. **Data:** WHO 2012. *Norm: mean of the localities*
- 0.25 The lower the percentage of Primary HealthCare Centres without Laboratory staff in a locality, the more suitable it is a locality. **Data:** WHO 2012. *Norm: mean of the localities*
- 0.25 The lower the percentage of Primary HealthCare Centres without Nutritional staff in a locality, the more suitable it is. **Data:** WHO 2012. *Norm: mean of the localities*
- 0.15 Areas where healthcare can be upgraded at minimal cost are preferred
- 0.33 The more non-functioning Primary HealthCare Centres in a locality, the more suitable it is for upgrading. **Data:** WHO 2012. *Norm: mean of the localities*
- 0.33 The more non-functioning Basic Health Units in a locality, the more suitable it is for upgrading. **Data:** WHO 2012. *Norm: mean of the localities*
- 0.33 The more non-functioning Mobile Clinics in a locality, the more suitable it is for upgrading. **Data:** WHO 2012. *Norm: mean of the localities*
- 0.10 Suitable areas should have proper Early Warning Response Systems to guard against outbreaks
- 0.50 The more healthcare facilities with Early Warning Response System (EWARS) in a locality, the more suitable it is. **Data:** WHO 2012. *Norm: mean of the localities*
- 0.50 The higher the percentage of facilities with EWARS in a locality, the more suitable it is. **Data:** WHO 2012. *Norm: mean of the localities*
- 0.15 Suitable areas should have good access to health facilities
- 1.00 Areas with health facilities network coverage of a walking distance of a maximum of 5 km are preferred. **Data:** National Health Policy, 2007. Federal Ministry of Health, Norm UN-Habitat

Education Suitability Criteria Tree

Identify suitable areas in terms of education for settlement development and return of internally displaced persons (IDPs) in Darfur.

- 0.60 Suitable areas should have the benefit of effective and not overloaded education infrastructure
- 1.00 400 students per school is required, whereas more are worse and fewer is better - **Data:** MoE for ND & WestDarfur_MoE_2010, UNICEF_2012 2013 *Norm: Ministry of Education Sudan*
- 0.60 Populations in suitable urban areas should have the benefit of sufficient numbers of education facilities
- 1.00 6,000 inhabitants per school in urban localities is required, fewer is better and more is worse. **Data:** MoE 2013 *Norm: Ministry of Education Sudan*
- 0.20 Population in rural areas should have the benefit of sufficient numbers of education facilities
- 1.00 3,000 inhabitants per school in the rural localities is optimal, fewer is better and more is worse. **Data:** MoE 2013 *Norm: Ministry of Education Sudan*

Water, Sanitation and Hygiene (WASH) Suitability Criteria Tree

Identify suitable areas in terms of water and sanitation for settlement development and return of internally displaced persons (IDPs) in Darfur.

Areas should have good access to water sources and sanitation - DJAM 2013 Pillar 1 obj. 2

0.50 Suitable localities should have permanent drinking water

- 0.50 Populations should have the benefit of sufficient drinking water and water sources
- 0.50 Suitable areas should have the benefit of sufficient drinking water
 - 1.00 Under the Darfur average of 12 litres per capita per day water, availability is considered insufficient and above, the higher the better it is.

Data: UNICEF-DWSU 2013 presentation, collection 2010
Norm: UN-Habitat
- 0.50 Distance to drinking water sources should be minimal
 - 0.50 Distance to hand pumps should be less than 500 m and not more than 2 km - UNICEF 2011 2012 inventory Norm: UN-Habitat
 - 0.50 Distance to water yards should be less than 500 m and not more than 2 km - UNICEF 2011 2012 inventory Norm: UN-Habitat
- 0.50 Drinking water should be safe
 - 0.35 Water quality should be good
 - 0.50 Localities with more water sources that are of "fit" water quality are more suitable - UNICEF 2011 2012 inventory Norm: UNICEF

0.33 Localities with more water sources that are of "unfit" water quality are less suitable - UNICEF 2011 2012 inventory Norm: UNICEF

0.17 Localities with more water sources for which water quality is unknown are less suitable - UNICEF 2011 2012 inventory Norm: UNICEF

0.35 Functioning closed system water sources are more suitable

0.67 Localities with more functioning Water Yards are preferred - UNICEF 2011 2012 inventory Norm: UN-Habitat

0.33 Localities with more functioning hand water pumps are preferred - UNICEF 2011 2012 inventory Norm: UN-Habitat

0.20 Functioning open system water sources are less suitable than closed systems

0.75 Localities with more functioning hafirs are more suitable - UNICEF 2011 2012 inventory Norm: UN-Habitat

0.25 Localities with more functioning open wells are preferred - UNICEF 2011 2012 inventory Norm: UN-Habitat

0.10 Localities with non-functioning water sources are less suitable

0.50 Localities with more water sources that are functioning are more suitable - UNICEF 2011 2012 inventory Norm: UN-Habitat

0.33 Localities with more water sources that are non-functioning are less suitable - UNICEF 2011 2012 inventory Norm: UN-Habitat

0.17 Localities with more water sources for which functioning is unknown are less suitable - UNICEF 2011 2012 inventory Norm: UN-Habitat

0.50 Suitable areas should have the benefit of sanitation

- 1.00 Under the Darfur average of 26% of people with access to latrines, availability is considered insufficient and above, the higher the better it is. *Data: UNICEF-DWSU 2013 presentation, collection 2010*
Norm: UN-Habitat

Economic Suitability Criteria Tree

Identify suitable areas in terms of economic conditions for settlement development and return of internally displaced persons (IDPs) of Darfur.

0.17 The more kinds of construction-related expertise in a locality, the greater its economic potential

- 0.14 The presence of architects enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*
- 0.14 The presence of building contractors enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*
- 0.14 The presence of plumbers enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*
- 0.14 The presence of surveyors enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.14 The presence of engineers enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.14 The presence of electricians enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.14 The presence of hardware building material store enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.17 The more kinds of economic auxiliary services in a locality, the greater its economic potential

0.25 Any locality should feature a range of financial and legal services

0.33 The presence of accountants enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.33 The presence of lawyers enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.33 The presence of banks enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.25 Any locality should feature agricultural auxiliary services

0.33 The presence of a cooperative union enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.33 The presence of an agricultural office enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of*

Functions 2012, Norms: UN-Habitat

0.33 The presence of an irrigation system enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.25 Any locality should have the benefit of public markets

0.25 The presence of an animal market enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.25 The presence of a crop market enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.25 The presence of one or more general goods market(s) enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.25 The presence of an animal and crop market enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.25 Any locality should feature generic facilities

0.33 The presence of electricity companies enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.33 The presence of a customs office enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.33 The presence of vocational schools enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.17 The more kinds of shops, stores and services in a locality, the greater its economic potential

0.17 The presence of a manufacturing plant enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.17 The presence of established grain stores gives a locality more economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.17 Any locality should have the benefit of food shops.

0.33 The presence of a cooking fuel store enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.33 The presence of bakeries enhances a locality's economic potential. **Data:** *UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.33 The presence of groceries enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.17 A locality should feature hotels and cafeterias to enhance its economic potential

0.5 The presence of hotels and lodgings enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.5 The presence of cafeterias enhances a locality's

- economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*
- 0.17 Any locality should have the benefit of service stores
- 0.25 The presence of furniture shops enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*
- 0.25 The presence of barber shops enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*
- 0.25 The presence of tailor shops enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*
- 0.25 The presence of laundries enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*
- 0.17 Any locality should have the benefit of motor-related services
- 0.5 The presence of an auto repair garage enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

- 0.5 The presence of a petrol station enhances a locality's economic potential. *Data UN-Habitat Matrix of Functions 2012, Norms: UN-Habitat*

0.17 The more kinds of commodities produced in a locality, the greater its economic potential

- 0.2 Sugar cane production potential. *Data UN-Habitat Consultative Workshops 2013, Norms: presence of potential is good (UN-Habitat)*
- 0.2 Oil Seed Production potential. *Data UN-Habitat Consultative Workshops 2013, Norms: presence of potential is good (UN-Habitat)*
- 0.2 Arabic Gum production potential t. *Data UN-Habitat Consultative Workshops 2013, Norms: presence of potential is good (UN-Habitat)*
- 0.2 Tobacco production potential. *Data UN-Habitat Consultative Workshops 2013, Norms: presence of potential is good (UN-Habitat)*
- 0.2 Livestock production potential. *Data UN-Habitat Consultative Workshops 2013, Norms: presence of potential is good (UN-Habitat)*

0.17 The more kinds of food produced in a locality, the greater its economic potential

- 0.33 Honey Production potential. *Data UN-Habitat Consultative Workshops 2013, Norms: presence of potential is good (UN-Habitat)*
- 0.33 Food crop production potential. *Data UN-Habitat Consultative Workshops 2013, Norms: presence of potential is good (UN-Habitat)*
- 0.33 Fish production potential presen. *Data UN-Habitat Consultative Workshops 2013, Norms: presence of potential is good (UN-Habitat)*
- 0.17 The more varied kinds of basic economic services in a locality has, the greater its economic potential**
- 0.33 Cement factory potential. *Data UN-Habitat Consultative Workshops 2013, Norms: presence of potential is good (UN-Habitat)*
- 0.33 Trade centres potential. *Data UN-Habitat Consultative Workshops 2013, Norms: presence of potential is good (UN-Habitat)*
- 0.33 Markets potential. *Data UN-Habitat Consultative Workshops 2013, Norms: presence of potential is good (UN-Habitat)*



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