

Urban Planning & Infrastructure in
Migration Contexts

**VISION & SCENARIO BUILDING
DRAFT REPORT**

DOUALA

Douala 4 - Cameroon - Volume 2

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Cover Photo: An unpaved road in Bonabéri, Douala 4, Cameroon. Source: UN-Habitat.

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Urban Planning & Infrastructure in Migration Contexts

VISION & SCENARIO BUILDING DRAFT REPORT- DOUALA 4

DOUALA

Cameroon

Abbreviations

AFD - Agence française de développement (French Development Agency)	PAD - Autonomous Port of Douala
BIP - Public Investment Budget	PCD - Communal Development Plan
BRT - Bus Rapid Transport	PDU - Urban Master Plan
BUCREP - Central Bureau of the Census and Population Studies in Cameroon	PDUE - Urban and Water Development Support Project
CAC - Additional Communal Centimes	PDVIR - Inclusive and Resilient Cities Development Project
CAD4 - Douala 4 Subdivision	PIP - Public Investment Programme
CAMWATER - Cameroon Water Utilities Corporation	PLANUT - Three-year Emergency Plan to Accelerate Economic Growth
CBMT - Medium Term Budgetary Framework	PMUS - Sustainable Urban Mobility Plan
CDMT - Medium Term Expenditure Framework	PNDP - National Participatory Development Programme
CDS - City Development Strategy	PNH - National Housing Policy
CEMAC - Central Africa Economic and Monetary Community	PNPGC - National Disaster Risk Reduction and Management Plan
CTD - Decentralized Territorial Communities	POS - Land Use Plan
CUD - Douala City Council	PPBS - Planning - Programming - Budgeting - System
DGSN - General Delegation for National Security	PS - Sector Plan
ENEO - Energy of Cameroon	PSU - Urban Summary Plan
FEICOM - Special Fund for Equipment and Inter-municipal Intervention	PTF - Technical and Financial Partners
GDP - Gross Domestic Product	PUN - National Urban Policy
HYSACAM - Hygiene and Sanitation in Cameroon	RGPH - General Population and Housing Census
IDP - Internally Displaced Persons	SAD - Douala Development Corporation
ILO - International Labour Organisation	SDA - Sanitation Master Plan for the City of Douala
LC - Order Letter	SED - Secretary of State for Defence
MAETUR - Mission for Planning and Equipment of Urban and Rural Land	SIC - Cameroon Real Estate Corporation
MAGZI - Mission for Development and Management of Industrial Zones	SNADDT - National Regional Planning and Sustainable Development Scheme
MINADER - Ministry of Agriculture and Rural Development	SND 30 - National Development Strategy
MINAT - Ministry of Territorial Administration	SNRRC - National Strategy on Disaster Risk Reduction
MINDCAF - Ministry of Domains, Cadaster and Land Affairs	SOCATUR - Cameroonian Urban Transport Society
MINDDEVEL - Ministry of Decentralization and Local Development	SRADTT - Regional Plan for the Spatial Planning, Sustainable Development and Territorial Equality
MINEE - Ministry of Water Resources and Energy	UNDAF - United Nations Development Assistance Framework
MINEPAT - Ministry of the Economy, Planning and Regional Development	UNDRR - United Nations Office for Disaster Risk Reduction
MINEPIA - Ministry of Livestock, Fisheries and Animal Industries	UNHCR - United Nations High Commissioner for Refugees
MINFI - Ministry of Finance	UNICEF - United Nations Children's Fund
MINHDU - Ministry of Housing and Urban Development	UPIMC - Urban Planning and Infrastructure in Migration Contexts
MINSANTE - Ministry of Public Health	WB - World Bank
MINTP - Ministry of Public Works	
MIRA - Multi-Sector Rapid Assessment	
NOSO - North-West and South-West Regions	
OCHA - United Nations Office for the Coordination of Humanitarian Affairs	
NGO - Non-Governmental Organization	

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Overview of the UPIMC Programme

UPIMC PROJECT IN CAMEROON-DOUALA

The City of Douala has unique demographic dynamics and urban mutations resulting from its geographical location and its international influence. Indeed, the city constitutes an economic and cultural hub for Central Africa and the continent. This trajectory is also marked by new dynamics such as the arrival of populations in situations of humanitarian and health crisis in neighbouring countries and the Far North, North and South-West Regions of the country. These cross-border and internal displacements have been exacerbated by the resurgence of conflicts since 2016. The city of Douala polarises these flows of new arrivals, particularly the subdivision of Douala 4. Douala 4 has become the gateway for IDPs from the Anglophone crisis. Since 2017, the Anglophone conflict is between the government and separatists from the English-speaking minority. Therefore, the arrival of IDPs is a vector of new socio-economic dynamics, which has led to several new challenges for the rapidly developing subdivision.

During discussions with representatives of the Douala 4 town hall, it became clear that the delimitation of the neighbourhoods could sometimes be confusing. The subdivision of Douala 4 was structured through a process of regrouping about ten villages whose perimeters had not been mapped. It would appear that in official administrative documents, some neighbourhood names are confused with village names. Moreover, in the collective representations of the inhabitants and the natives, Douala 4 is often described by the names of the villages.

To have the most authentic maps possible, the UN-Habitat team mapped the urban villages of Douala 4 (Annex 4). However, the UN-Habitat team based its study on the official administrative unit, which is the neighbourhood unit.

This Spatial profile aims to provide an overview of the current situation and a holistic analysis within the framework of the UPIMC programme to identify how the socio-economic development of the subdivision can be improved to benefit the host communities and IDPs. To identify actions to be taken, it is essential to analyse

the overall urban situation of Douala 4, also known as the town of Bonabéri. The intention behind spatial profiling is to support the initiatives already deployed by institutional stakeholders, but also by economic and international partners.

The Spatial profile consists of presenting a multi-scalar and multi-dimensional analysis through the production of maps and the narration of major trajectories observed through data collection, interviews, and field visits. The analysis will improve other studies and will go with the development of urban strategy by the city's stakeholders. This technical document should be seen as an evolving and iterative tool to best support initiatives and potential collaborations.

The spatial profiling begins with an analysis of the national context of Cameroon and the official documents and measures that could impact the city's urban development, then focuses on the regional context, Douala – the city level, Douala 4 – the subdivision level, and finally on the pilot neighbourhood of Mambanda. Indeed, the neighbourhood of Mambanda was selected because it brings together common issues at the scale of the city, region, and country.

The profile provides a framework for spatial and strategic analysis of the locality from a development perspective that is aligned with national and city priorities. By involving a wide range of stakeholders in the development of the Spatial profile, a common and shared vision can be established.

The UPIMC programme develops an approach based on four main components from which the urban profile derives:

1. Spatial analysis and urban profiling

The spatial analysis includes multi-sectoral data collection, primary and secondary data, field visits, interviews with key informants, participatory workshops with local and national government stakeholders and three focus group discussions with civil society actors, involving them from the beginning of the process. This was then accompanied by a detailed GIS analysis at the country, city and

Four components of the UPIMC Programme



neighbourhood level to synthesise, compare and distil the information into graphs and maps, accompanied by narrative text. This step allowed the identification of the neighbourhood selected for the continuation of the study.

2. Urban vision and scenarios

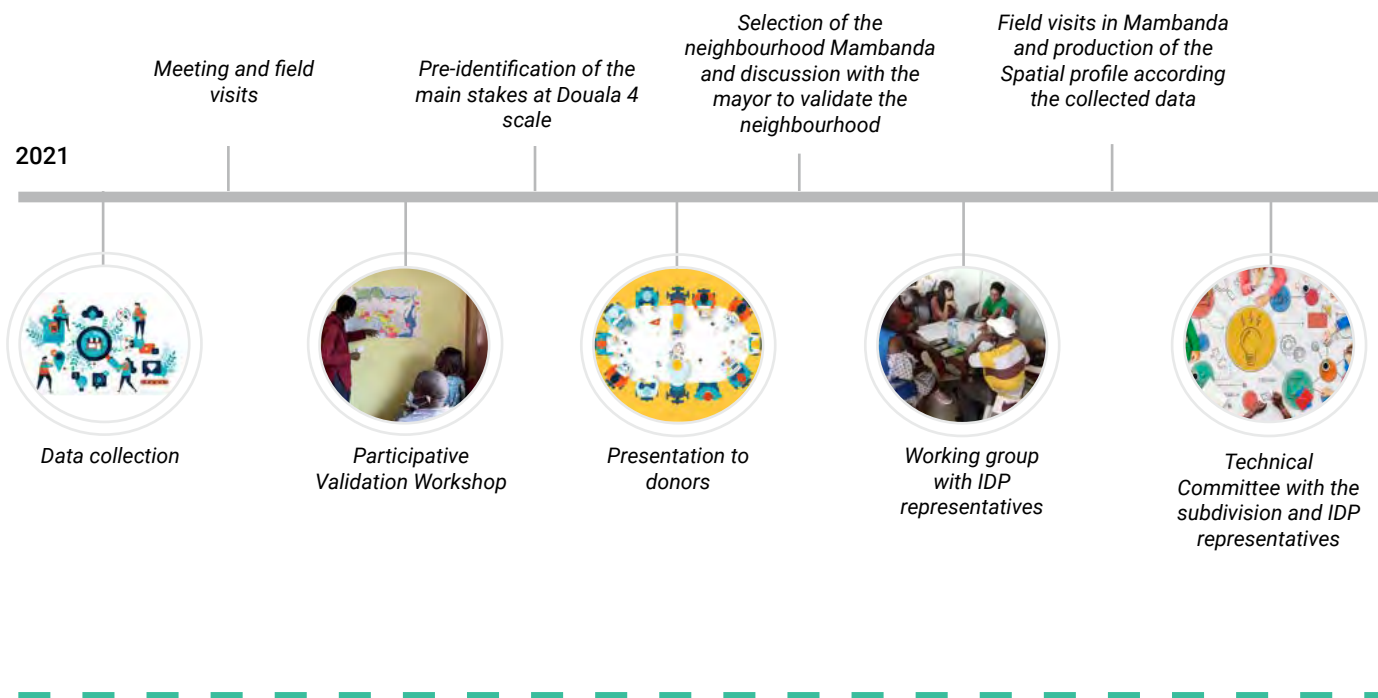
In the light of the analytical work and the exchanges carried out during the first part of the study, this component will develop a strategic vision based on an urban strategy constructed with the stakeholders. Following this strategy, the main scenarios for Douala 4 will be discussed and identified. Indeed, the elaboration of the scenarios will be based on a participatory and inclusive *charrette*, which involves the main institutional

stakeholders as well as representatives of civil society (IDPs, host communities, etc.) and the private sector. Participants will provide direct inputs to the visioning process, which will facilitate discussion on strategic visions, possible interventions, related individual interests, technical opportunities and/or constraints, as well as policy objectives.

The scenario development will be supported by an action plan outlining possible projects and their timeframes. This will also unlock the next step for the clear identification of strategic infrastructure interventions and allow a technical assessment of the prioritisation of interventions.

UPIMC PROGRAMME - CAMEROON - DOUALA CITY - PHASE 1

Phase 1a Spatial analysis & urban profiling



3. Identification of priority investments

The previous components led to the identification of structural and conjunctural priority actions to support decision-makers and experts in defining their interventions. This work will help prioritise investments by assessing the economic, social and environmental potential and the sustainable impact of the proposed interventions on the city and its communities. Priority investments will be discussed between decision-makers, potential investors and international cooperation actors, notably based on the analysis of the city and subdivision budgets to build partnerships. These priority actions will be presented during a validation workshop with the stakeholders.

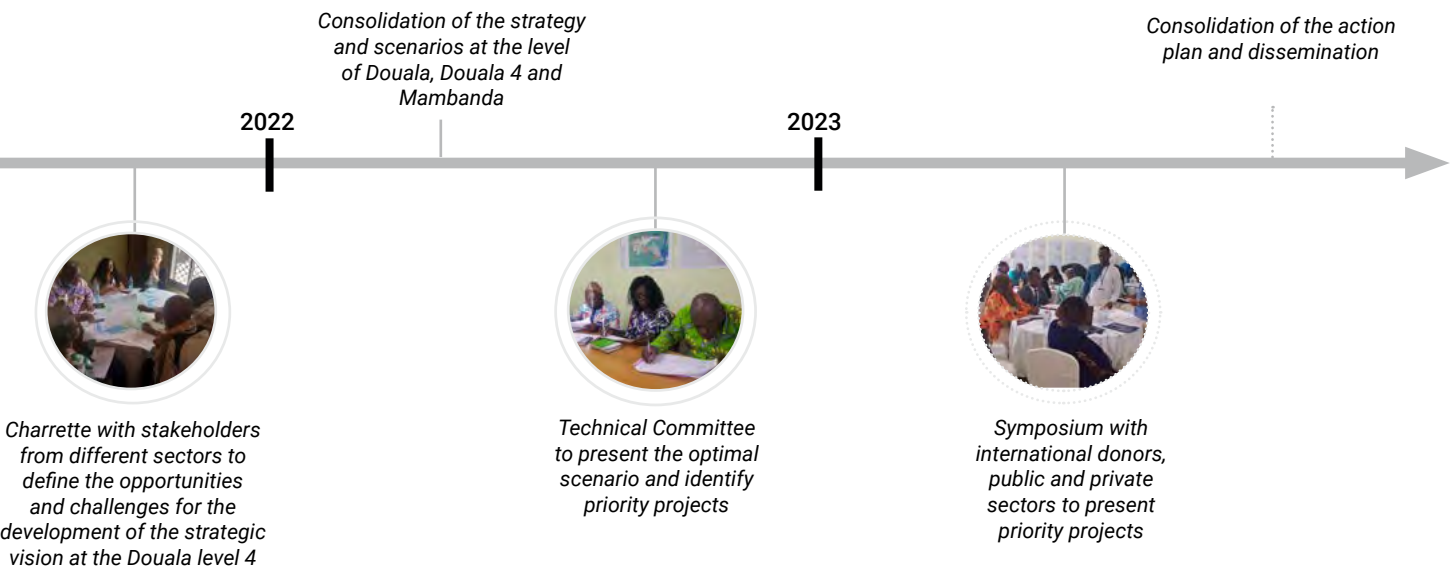
4. Knowledge exchange and sharing of know-how

The last component is deployed throughout the programme. It will promote knowledge exchange and

awareness-raising among stakeholders in the cities to apply good data management and urban observation platforms. Sharing and disseminating data through different communication channels will also enable synergies in intervention strategies and encourage local collaborations. This component will also mobilise UN-Habitat platforms and those of its partners, such as the Cities Alliance Joint Work Programme on Cities and Migration, to share their respective knowledge and experience and other examples such as the United Nations network.

Phase 1b Vision & Scenario building

Phase 1c Prioritisation investments



Phase 1d Knowledge exchange & Capacity sharing

The Phase 1a is implemented based on the analysis of information from different sources, including field data and interviews. The exercise revealed many difficulties in collecting data, i.e., the census data are often obsolete; the information provided by the stakeholders are at times contradictory because the methodology used can differ; information is not actively shared between stakeholders. The UN-Habitat team therefore based its analysis on grey literature, interviews, data provided by other UN agencies, data collected on field visits, data from working groups and from *charrettes*.

A first workshop led to the identification of the problems encountered in the Douala 4 subdivision. This workshop aimed to improve the analyses and focus the study on the pilot neighbourhood of Mambanda. At the end of this identification, interviews and site visits with representatives of displaced persons in the Southern

Cameroons provided an overview of the neighbourhood and the living conditions of IDPs. The study continued with a presentation of the mutual diagnosis at a technical committee meeting. The exchanges continued with the team in charge of the Communal Development Plan to ensure the reliability of the data.

The second part of phase 1b focuses on the strategic part of the project, i.e. defining an urban vision for Douala 4. This strategy will be developed in consultation with the project stakeholders to establish a consensual and shared vision. A participatory *charrette* will broaden the debate to include actors from different sectors (private and public), civil society and other stakeholders.

Another publication will be dedicated to the **Phase 1b** visioning part.

Introduction

For more than a decade, Cameroon has hosted IDPs and refugees, whose numbers have increased over the past five years due to internal (Anglophone crisis, Boko Haram) and external (instability in the Central African Republic) conflicts fuelled by religious and political grievances. In this context, the country is currently working on a national urban policy that proposes to lead to long-term sustainable urban development as part of the Habitat Country Programme Document validated in October 2019. Over the past 30 years, Douala's urban footprint has more than doubled. In particular, the subdivision of Douala 4 is facing exponential demographic growth due to the arrival of IPDs and is likely to keep on extending in the future if no urban plan is established. This expansion, correlated with the exponential demographic growth is set to increase as the conflict in the North-West and South-West (NOSO) area becomes entrenched.

The Spatial profile developed a common strategic vision to improve and provide sustainable living conditions for the inhabitants of Douala. It identified and mapped challenges, opportunities, and gaps in public infrastructure services in coordination with humanitarian interventions at the national, regional, and local levels. The systemic relationship between the challenges confirmed the need for concomitant and coordinated intervention.

This second volume aims to develop a strategic vision and scenario building – second component of the UPMC programme – for the subdivision of Douala 4 and the neighbourhood of Mambanda. This document promotes an inclusive and multi-scalar participatory community engagement process. Every step has been reviewed and validated by the different stakeholders at the local level during participative workshops.





Photo 1. Roundtables during the stakeholder symposium (January 2023)
Source: UN-Habitat

Background - Challenges and Interventions Needed in Douala 4 and Mambanda

Based on the spatial analysis and the results of the validation workshop, the UN-Habitat team identified the following challenges and needed interventions in Douala 4 and Mambanda in relation to the SDGs:



SDG 11

Over the past 30 years, Douala's urban footprint has more than doubled. Former satellite towns at the outskirts of the city – such as the subdivision of Douala 4 – have been overtaken by the urban sprawl of Douala and now belong to the metropolis of Douala. The periphery of the city is likely to continue to expand in the future if no urban plan is updated. The development of Douala is currently regulated by urban planning documents that have become obsolete. The lack of a common vision for the city is also linked to the development of urban projects without coordination and dissemination of information between the actors of the area. According to the different workshops, stakeholders have underlined the need to boost the definition of a strategic urban vision at the scale of Douala 4 to improve and offer sustainable living conditions to the inhabitants.



SDGs 3, 6 and 15

The analysis highlighted the complexity of accessing adequate housing and the limited and unequal access to basic services in Douala 4. IDPs are often housed in precarious settlements, such as in Mambanda, without access to basic services. In this respect, urban renewal and densification operations of the neighbourhoods are necessary to respond to the significant demographic growth.

Deforestation and water and soil pollution represent long-term health and social risk. Increasingly intense flooding due to climate change tends to aggravate this dynamic. Necessary interventions include the creation of environmental protection zones by developing the riverbanks, launching maritime and natural reserves, providing green public spaces and corridors for local populations.



SDG 16

The ongoing and unachieved decentralisation process has slowed down the municipalities' ability to address the identified urban dysfunctions. The collection of taxes and the budget of the subdivision of Douala 4 over the last few years, reveal the poor structuring and maturation of projects. This is coupled with a lack of partnerships and budgets, as well as poorly trained staff on these issues. Necessary interventions, supported by the institutions and stakeholders, include the development of partnerships between the private and public sectors, and the progressive empowerment and decentralisation accompanied by training of agents.



Photo 2. Scenario validation workshop in Douala 4 (September 2022)
Source: UN-Habitat

01

VISION

VISIONING WORKSHOP

On 12 April 2022, UN-Habitat organised a participatory workshop (or *charrette*) with stakeholders to define the desired urban vision for both the subdivision of Douala 4 and the pilot neighbourhood of Mambanda for the next five to ten years. 48 participants attended the workshop from civil society, representatives of internally displaced persons (IDPs), institutional actors (Douala City Council, Mayor of Douala 4, MINH DU, MINEPAT), and actors from the private sector (GICAM, FEICOM).

Methodology of the workshop

During this workshop, participants were grouped into several groups of about 10 people, from different backgrounds, with the aim to encourage them to collaborate. Each group was provided with a questionnaire and a map to help them define the desired urban vision for Douala 4 and Mambanda. Participants were asked to write their current vision of Douala 4 and Mambanda on post-it notes and to write their desired vision in blue on the map, using keywords. They also had to locate in green on the map the key places that should be developed as a priority to ensure sustainable development in the short and long term. At the end of this exercise, each group shared its ideas with all participants. During this feedback, the UN-Habitat team observed the emergence of a common desired urban vision, shared by all the groups. Indeed, the same priority areas were often identified, and the same keywords were used to describe Douala 4 and Mambanda.

Participants of the workshop stressed the importance to be given to the following themes, referred to as priority areas for intervention in this document:

- Adapting the land tenure system;
- Improving the quality of housing;
- Strengthening transport infrastructure and developing intermodality;
- Improving access to basic and social services;
- Strengthening and diversifying economic centres;
- Protecting, enhancing, and developing the natural heritage.

Therefore, the UN-Habitat team was able to develop recommendations based on this participatory workshop for each of the priority areas of intervention at the scale of Douala 4 and Mambanda.

THE URBAN VISION AT A GLANCE

Recurring keywords during the workshop to describe the subdivision of Douala and the Mambanda neighbourhood:

Tourist city, fluid and diversified transport, modern city, accessible, developed, paved, cosmopolitan, habitable, composed of schools and health centres, leisure and sports areas, have an efficient network of drains, clean, ecological city, beautiful, eco-touristic, protected, well planned, develop market gardening activities and organise fishing, composed of social housing and social structures.

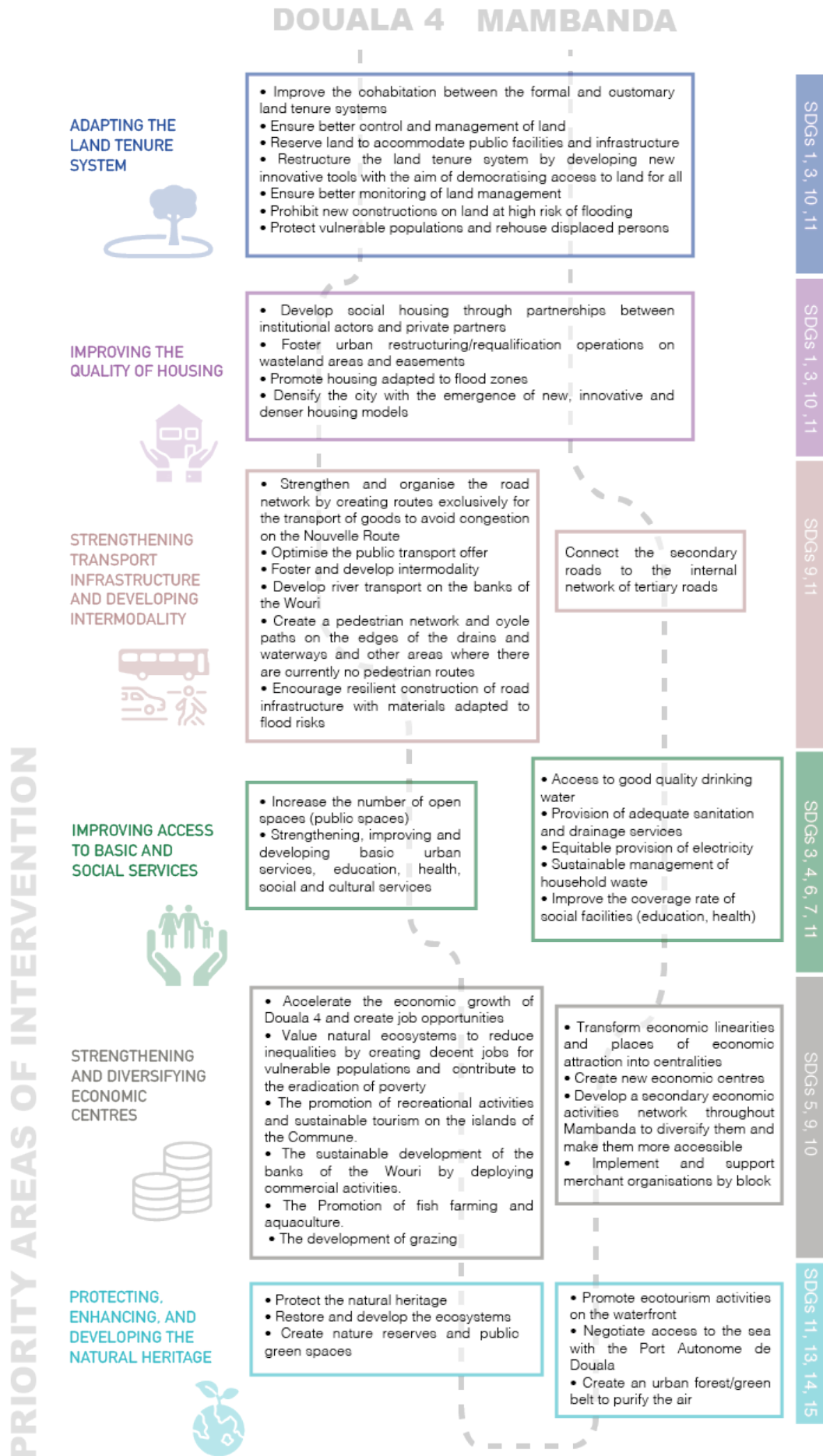


Fig. 1 Priority areas of intervention
Source: UN-Habitat

PRIORITY AREAS OF INTERVENTION

ADAPTING THE LAND TENURE SYSTEM



DOUALA 4

The land tenure system in Douala 4 is particularly complex as it is composed of both the formal and customary land tenure systems. In addition, there is a lack of data concerning property titles under the customary system, making urban planning in Douala 4 more challenging. The “wild” occupation of the still “empty” spaces in the city is one of the main symptoms of the lack of control over land management. With a view to ensuring sustainable urban development, security, and stability of land tenure for the inhabitants, the urban vision of Douala 4 and Mambanda should comprehend together these two land tenure systems to develop a concerted, harmonious, and efficient model.

The priority actions identified during the *charrette* are the following:

- Improve the cohabitation between the formal and customary land tenure systems;
- Ensure better control and management of land;
- Reserve land to accommodate public facilities and infrastructure;
- Restructure the land tenure system by developing new innovative tools with the aim of democratising access to land for all;
- Ensure better monitoring of land management.

MAMBANDA

Land issues in Mambanda are similar to those in Douala 4. Nevertheless, the neighbourhood is mainly made up of informal settlements due to poor or unsecured access to property titles. Mambanda is home to a large number of IDPs, i.e., vulnerable populations with little security of tenure. Thus, this neighbourhood should be a priority in future actions.

Regarding land management, it is important to prohibit all new constructions on land at high risk of flooding in order to protect vulnerable populations. The people currently living on these lands will have to be relocated at the subdivision level due to the natural risks but also

because of the coming extension of the Autonomous Port of Douala (PAD). The displacement of these populations will create challenges within the whole subdivision, given the lack of space and the current precarious housing conditions. It is, in this respect, not only a question of rehousing these people but also of developing an efficient and sustainable model in the long term.

IMPROVING THE QUALITY OF HOUSING



DOUALA 4

Land and decent housing accessibility remain a major issue in the city of Douala and in the subdivision of Douala 4 in particular. Thus, in order to improve the quality of life of the inhabitants, it is important to propose a new housing model that will contribute to the urban and architectural identity of Douala 4 as a modern and innovative subdivision.

The local actors who participated in the workshop propose the following actions:

- Ensuring access for all to adequate and safe housing and basic services at an affordable cost and cleaning up precarious neighbourhoods (SDG 11). Participants suggested to develop social housing projects in all neighbourhoods of Douala 4, through partnerships between institutional actors such as the Mission d'Aménagement et d'Équipement des Terrains Urbains et Ruraux (for the development of sanitised plots), the Société immobilière du Cameroun (for construction), the Crédit foncier (for financing social housing) and private partners (for additional financing).
- Developing the supply of housing on the territory. Participants mentioned the structuring of housing through urban restructuring and requalification operations on wasteland areas and easements.
- Adapting to natural risks and climate change through the promotion of housing adapted to flood zones, such as constructions on piles. These resilient construction techniques can call upon local know-how, thus favouring the use of local materials.

- Densifying the city is a solution envisaged to address the lack of space in the subdivision. Indeed, the demographic pressure — in particular with the massive arrival of new populations — coupled with land shortage will lead to the emergence of new, innovative and denser housing models to accommodate the entire population.

MAMBANDA

All these objectives were also retained for the neighbourhood of Mambanda. Indeed, this new housing model and urban densification should be applied to every neighbourhood of Douala 4.

STRENGTHENING TRANSPORT INFRASTRUCTURE AND DEVELOPING INTERMODALITY



DOUALA 4

The road network plays a major role in the smooth running of Douala 4. Due to its geographical position, the subdivision is a strategic crossroads and a main gateway to the city. In this regard, it benefits from the various transport networks for the routing of goods and the movement of travellers towards the North-West and South-West Regions. Douala 4 facilitates inter-communal and regional exchanges and the smooth running of economic activities. However, the rail network today remains inactive on the Bonabéri side. The port activity — where nearly 85 per cent of foreign trade transits — continues to expand in Douala 4 with the expansion of the PAD in Mambanda. With the aim to facilitate trade and mobilities, intermodality must become a priority.

The intra-urban road network is often congested and lacks maintenance, whereas the offer of public transport is deficient, and its coverage remains uneven. These elements combined contribute to the overall congestion of the intra-urban transport system. During the workshop, the urban development actors of Douala 4 were keen to identify appropriate local solutions, given this opportunity.

The following interventions may be of interest:

- Strengthening and organising the road network by creating routes exclusively for the transport of goods to avoid congestion on the Nouvelle Route — the main road linking Douala 4 to the rest of the city. In addition, the routing of goods in the city should be organised according to specific schedules to optimise traffic.
- Optimising the public transport offer but also increasing the number of public transport lines.
- Fostering and developing intermodality for the inhabitants to reduce their daily transport time thus, facilitating urban mobility at the metropolitan scale.
- Developing river transport on the banks of the Wouri to enable the transport of people to the islands and enhance the city's natural heritage while boosting the local economy.
- Improving soft modes of transport by creating a pedestrian network and cycle paths on the edges of the drains and waterways and other areas where there are currently no pedestrian routes.
- Encouraging resilient construction of road infrastructure with materials adapted to flood risks (e.g. paving stones or permeable surfaces).

In view of the new needs, both in terms of travel and quality of life, it is important to improve the transport infrastructure by deploying a varied network of modes of transport throughout the municipality. The long-term objective is to offer a functional, legible, and accessible road network for all, while giving full scope to soft modes of transport for functional, sustainable, and safe travel management. This objective corresponds to SDGs 9 and 11, which aim to ensure access for all to safe, accessible, and sustainable transport systems at an affordable cost, by improving road safety, particularly by developing public transport.

MAMBANDA

Mambanda is not served by city taxis due to the current dilapidated state of the tertiary road network. City taxis are gradually being replaced by motorbike taxis (or bendskins) — the main alternative for people and goods. Based on this observation, the stakeholders used the adjective "structured" to describe the desired state of Mambanda's road network. The structuring of the road network of Mambanda involves the development of a

network of tertiary roads to open up the neighbourhood and connect it to the main neighbouring centralities. These new roads will be designed in a way to ensure cohabitation between the different modes of transport and to encourage soft mobility (e.g., maximum speed signs, landscaping, paving, etc.).

During the workshop, stakeholders agreed to develop safe, accessible, and sustainable transport and mobility as advocated by SDG 11 through four main interventions:

- Connecting the secondary roads that surround the subdivision to the internal network of tertiary roads to be developed. In this way, opening up Mambanda will promote social inclusion and better accessibility to social services, facilities (education, health) and economic centres.
- Improving intermodality along the asphalted axis of the Mambanda market and the Alpicam manufacturing to ensure fluidity of mobility within the neighbourhood and between the other neighbourhoods of Douala 4.
- Integrating soft and active modes of transport in the neighbourhoods through the creation of pedestrian and cycle paths, awareness-raising and training, and support for the use of these modes of transport.
- Enhancing the current road network and related equipment (pavement, public lighting, gutters, vegetation, etc.) to improve the quality and safety of travel.
- Using pavements that are suitable for wetlands.

IMPROVING ACCESS TO BASIC AND SOCIAL SERVICES



DOUALA 4

Uncontrolled urban growth and population growth are putting pressure on basic urban services (deterioration in access to these services, increasingly acute pollution, sanitation problems, etc.) and social facilities (poor access to education and health services). The urban sprawling of Douala 4 is accompanied by an increase

in inequalities and disparities between the different neighbourhoods. With the aim to implement a resilient, equitable urban development, concerned about social development, the following actions were recommended:

- Increasing the number of open spaces (public spaces) in the city that are accessible to all. These places encourage interaction between individuals and help maintain social cohesion.
- Strengthening, improving, and developing basic urban services (water, electricity, drainage, waste), education (school, high school, technical colleges), health (redevelopment of the current medical centre into a referral hospital) and social and cultural services (listening centre, municipal library, social housing etc.).
- The goal is to position Douala 4 as a secondary structuring centre, within a network of attractive centres at the city level. This approach consists of reconfiguring the main attractive areas of Douala 4 as centralities offering a qualitative and competitive range of educational, health, leisure, cultural, commercial services, and employment facilities. In this respect, this approach will both structure the subdivision and strengthen its strategic position on a metropolitan scale.

MAMBANDA

Basic services

Mambanda is mainly made up of precarious housing with low-quality and unattractive urban services and collective social facilities. The subdivision has a low slope which does not always favour the evacuation of rainwater, leading to stagnation and runoff on the roads. In addition, the inadequacy of water crossing structures and the lack of maintenance contribute to the aggravation of this phenomenon. The bottleneck on these waterways by neighbouring buildings and the embankment of wetlands are possible causes of flooding. The unhealthy living conditions of the neighbourhood were also highlighted. Waterways, gutters, and roads constitute dumping grounds due to the lack of waste collection points and the incivility of the inhabitants. Eventually, the significant lack of urban infrastructure and services coupled with their poor maintenance leads to precarious living conditions and accelerates the spread of diseases. Participants to the workshop outlined interventions to be carried out according to priority issues, namely:

Access to good quality drinking water

By the end of the project, ensure universal and equitable access to drinking water at an affordable cost (SDG6) through the development of an autonomous, viable, sustainable, and self-financing drinking water supply system in the entire subdivision. This will reduce the production/distribution deficit of the CAMWATER concessionaire.

Provision of adequate sanitation and drainage services

Systematise the construction of new drains and regular maintenance of existing works to ensure equitable access for all to adequate sanitation and hygiene services (SDG 6).

Equitable provision of electricity

Develop mechanisms for the provision of a quality electricity network in the whole neighbourhood to ensure access to reliable and sustainable energy services for all at an affordable cost, counter the shortage of electrical energy infrastructure for the populations and economic operators, and increase the share of the global renewable energy supply (SDG 7) (e.g. solar panels).

Sustainable management of household waste

The improvement of the road network — to allow HYSACAM's waste collection vehicles to go door to door — coupled with continuous awareness-raising of the population to voluntarily bring their waste to set up authorised collection points, would facilitate sustainable management of household waste. The objective is to reduce the negative environmental impact per capita, with particular attention to air quality and waste management for sustainable cities and communities (SDG11).

Social services

Improving the coverage rate of social facilities (education, health) and the awareness of social and cultural issues

By the end of the project, ensure access to health care services for all (SDG 3) and, under equal conditions (children, disabled people and all genders), enable all to have access to education in a safe learning environment (SDG 4). This requires the establishment of socio-community facilities in the neighbourhood,

which are inherent to education (school, high school, etc.), health (medical centres, hospitals, etc.), leisure (sports complex, football field, recreational areas, etc.), social development (social and cultural activities, etc.), and the promotion of social cohesion (listening centre, social centre, IDPs reception centre, women's promotion centre, etc.), cultural promotion (cultural centre, community centres, etc.), security (police station, etc.), development of economic activities (market, shopping centre, shops), etc.

The direct effect of these actions in the neighbourhood will be noticeable in the short-term, while the overall transformation in the subdivision of Douala 4 will be appreciated in the medium and long-term.

STRENGTHENING AND DIVERSIFYING ECONOMIC CENTRES



DOUALA 4

The subdivision of Douala 4, with its strategic position, its ecotourism potential, its industries, and its strong workforce, strives to position itself as a privileged destination in this overall dynamic of economic attraction, as underlined during the participative workshop.

To this end, the desired goal is to develop and diversify the economic sectors while considering the orientations of the SDGs. Thus, the actors have opted for:

- Accelerating the economic growth of Douala 4 and creating job opportunities (SDG 8) by relying on the existing industrial and tertiary dynamics of Douala 4. Indeed, companies from the primary, secondary, and tertiary sectors have settled in Bonabéri, transforming the riverbank into an industrial activity zone. The expansion of the PAD will reinforce this dynamic. As a source of employment, the installation of new companies could provide jobs for the inhabitants of Douala 4. Other negotiations are to be foreseen in this perspective of private-public partnership (the development of public equipment and road infrastructures).

- Valuing natural ecosystems to reduce inequalities by creating decent jobs for vulnerable populations (SDG 10) and thus contribute to the eradication of poverty (SDG 1). To achieve this, participants opted for:
 - *The promotion of recreational activities and sustainable tourism on the islands of the subdivision.*
 - *The sustainable development of the banks of the Wouri by deploying commercial activities.*
 - *The promotion of fish farming and aquaculture.*
 - *The development of grazing (SDG 15).*
- Develop sales channels for agricultural products from the Western Regions of Cameroon in Douala 4, the city's gateway. The city depends heavily on these regions for its food supplies. Thus, the creation of a wholesale and retail market specialising in food and/or poultry products and handicrafts in Douala 4 could contribute to ensuring the consumption of local products (SDG 12).

MAMBANDA

- Located in the Southern sector of Douala 4, and close to the industrial zone adjacent to the left bank of the PAD, Mambanda is a mainly informal area, characterised by a low level of economic development. In fact, commercial facilities are concentrated in specific areas: near the Alpicam manufacturing, on the outskirts of the serving roads leading to the Mambanda high school or the Mambanda market. In addition, the Mambanda market is a source of employment for all the inhabitants of the subdivision, but also a place of sociability for the IDPs. The prices of the stalls remain very high though. The goal is to transform these economic linearities and places of economic attraction into centralities, create new ones, and develop a secondary economic activities network throughout Mambanda to diversify them and make them more accessible.
- Shops are not organised and are often precarious. Implementing and supporting merchant organisations by block could be a lever to reduce social and economic inequalities (SDG 10) and ensure access to employment for IDPs and the host community.

PROTECTING, ENHANCING, AND DEVELOPING THE NATURAL HERITAGE



DOUALA 4

Douala 4 has a notable natural heritage (waterfront, mangroves, wetlands, etc.). However, the degradation of the natural environment - including the destruction of ecosystems - is taking on a worrying scale. Among the priorities identified by the stakeholders during the workshop, we noted the following areas of intervention:

- Protection of the natural heritage. The ambition is to control the destruction of the environment and to ensure efficient management of natural resources. In the longer term, it is necessary to take measures to relocate vulnerable populations living in areas at risk of flooding, develop them and protect fragile ecological areas.
- Restoration and development of ecosystems. The banks of the Wouri are currently undeveloped and the mangroves are in danger of disappearance due to the intensive urbanisation of the territory and the future extension of the PAD. The development of the banks of the Wouri could serve to protect the ecosystems. A real natural barrier against flooding, the protection of the mangrove forest contributes to improving the living conditions of the residents.
- The creation of nature reserves and public green spaces. Protection and restoration are essential to preserve the natural wealth of the area. However, Douala 4 has few green spaces. Thus, the development of new planted areas would not only stop the degradation of the urban environment, but also capture CO2 emissions and ensure a sustainable, safe, healthy, and secure environmental framework (SDG 15). The reforestation of mangroves and the promotion of ecotourism in wetlands are actions that both enhance the value of ecosystems for the total population and promote environmentally friendly economic activities.

MAMBANDA

Mambanda is located on the banks of the Wouri River, West of the Bonabéri industrial zone and

South of National Road N3. For the preservation and enhancement of the natural environment, participants expressed the wish to promote ecotourism activities on the waterfront. The realisation of this idea is mainly hindered by the Declaration of Public Utility of the Douala Port Authority which covers an area of nearly 90 hectares in the vicinity of the waterfront. The challenge lies in negotiating access to the sea with the PAD in order to develop ecotourism activities for the population and to mitigate the probable nuisances generated by the development of port activities (SDG 14). The creation of an urban green belt would allow air purification through the planting of trees and would reinforce the presence of vegetation in the inhabited landscape (SDG 11, 13).

In addition, one of the major challenges in Mambanda is the high risk of flooding. IDPs live in informal settlements close to the banks of the Wouri and are therefore the most vulnerable populations to these risks. The priority is to develop a short- and long-term strategy to relocate these people in Mambanda or other areas of Douala 4.

VISION FORMULATION

The subdivision of Douala 4 is part of the future metropolis of Douala and represents a major asset for the latter due to its geographical position and demographic and economic dynamics. Faced with various challenges, Douala 4 must exploit its strengths to achieve sustainable and equitable development and position itself in the process of becoming a part of a metropolis. Indeed, its natural environment, the economic activities of Bonabéri, and the location between the centre of Douala and the Southern Cameroons make the subdivision more attractive for the people excluded from the centre of Douala but also the displaced English-speaking people. The absence of coordinated urban planning practices amplifies the current saturation and disorder of the subdivision.

In ten to 15 years, the subdivision will undergo major changes, which should be anticipated to give it a clear and coherent vision and avoid territorial tensions. The Mambanda neighbourhood embodies both potentials and possible tensions. Currently, this neighbourhood already suffers from several dysfunctions and will face new challenges given the two declarations of Déclaration d'Utilité Publique of the port area for the benefit of the Autonomous Port of Douala (PAD). In fact, this will entail a restructuring of the riverbanks coupled with the displacement of the population towards the centre of the subdivision and towards other neighbourhoods of Douala 4, fostering their saturation. Given the challenges, Mambanda should be considered a priority neighbourhood to regularise the growth and improve living conditions.

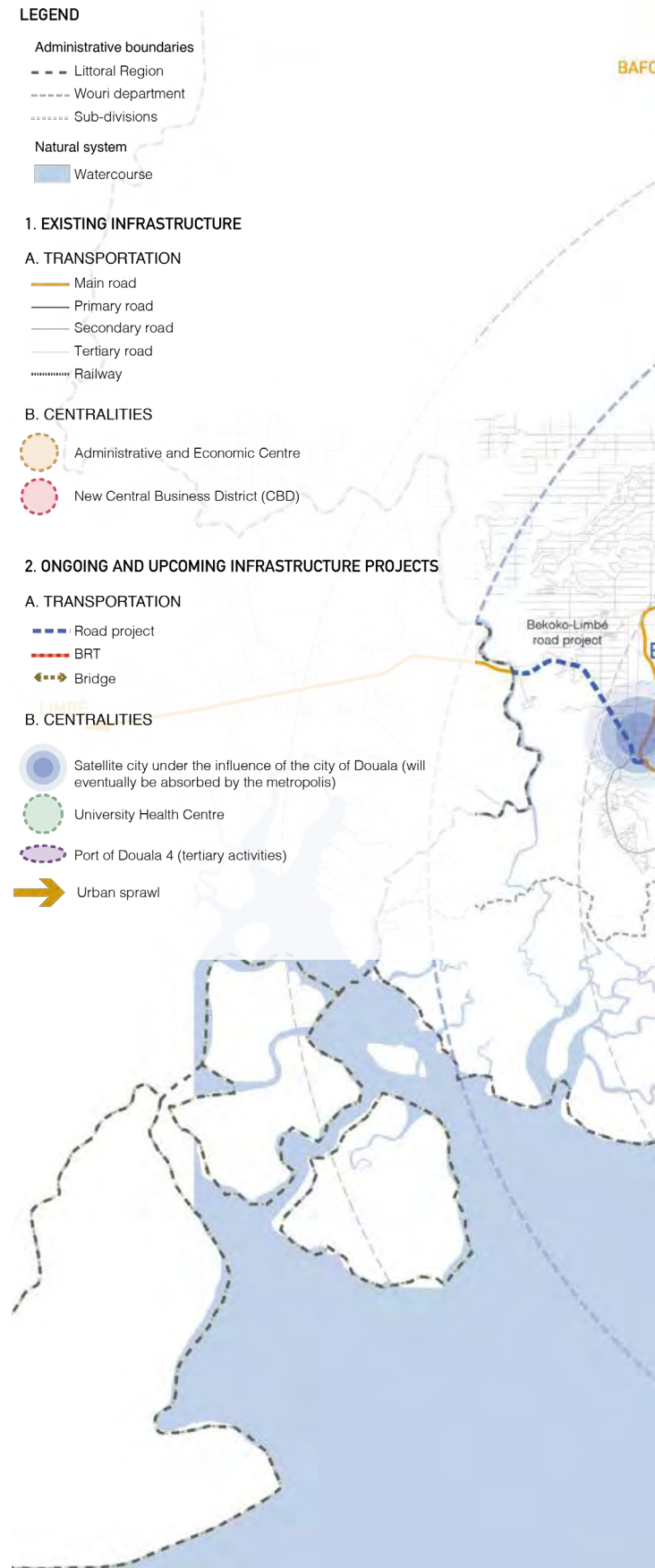
During the workshop on 12 April 2022, the UN-Habitat team identified and analysed the urban projections shared by the participants, synthesised below:

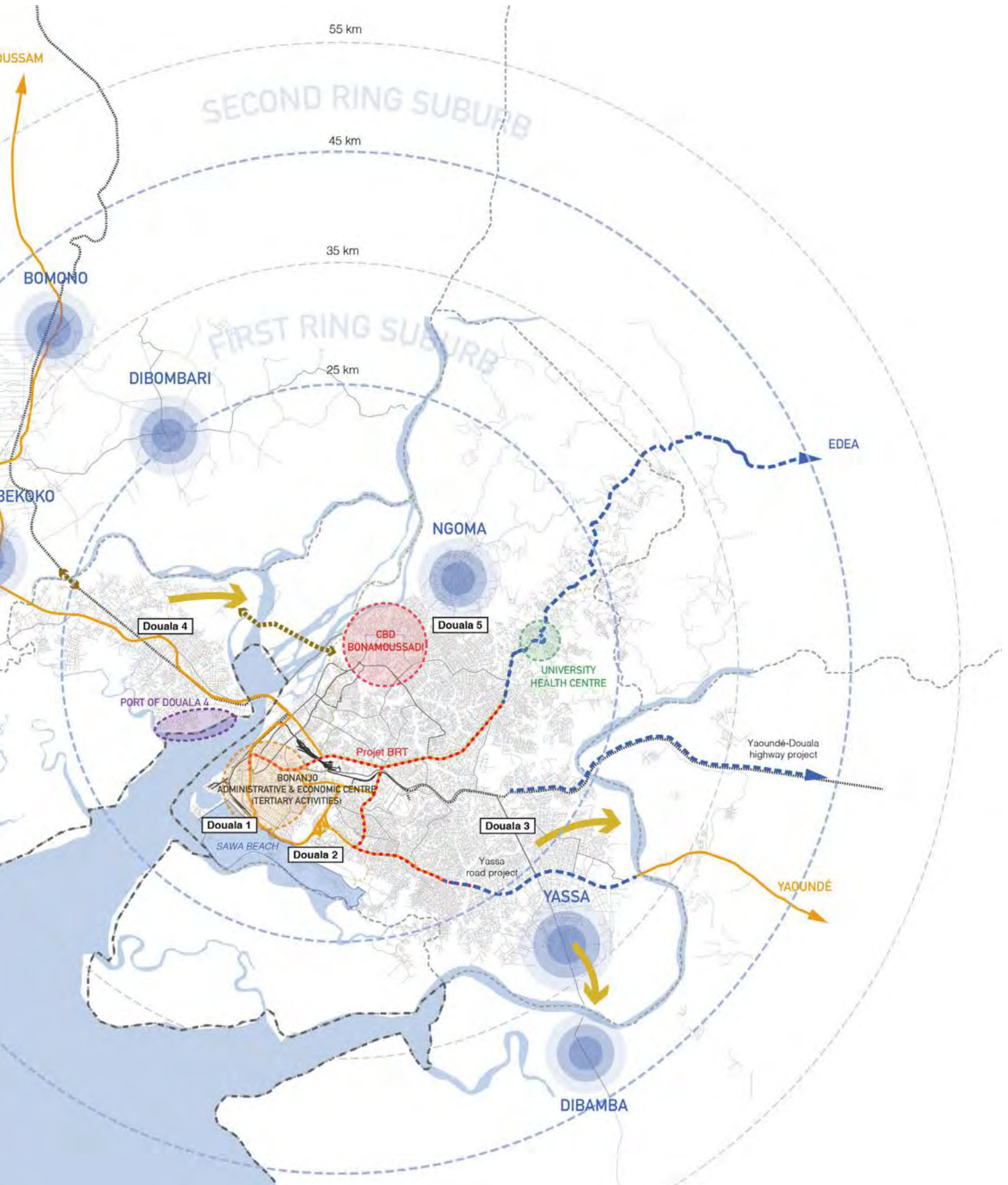
By 2030-2035, Sustainable, inclusive, innovative and equipped, Douala 4 and Mambanda.

Based on this statement, the UN-Habitat team was able to develop an overall vision of the territory through a multidisciplinary prism.

LEGEND

- Administrative boundaries**
 - - - Littoral Region
 - - - - Wouri department
 - Sub-divisions
- Natural system**
 - Watercourse
- 1. EXISTING INFRASTRUCTURE**
 - A. TRANSPORTATION**
 - Main road
 - Primary road
 - Secondary road
 - Tertiary road
 - Railway
 - B. CENTRALITIES**
 - Administrative and Economic Centre
 - New Central Business District (CBD)
- 2. ONGOING AND UPCOMING INFRASTRUCTURE PROJECTS**
 - A. TRANSPORTATION**
 - Road project
 - BRT
 - Bridge
 - B. CENTRALITIES**
 - Satellite city under the influence of the city of Douala (will eventually be absorbed by the metropolis)
 - University Health Centre
 - Port of Douala 4 (tertiary activities)
 - Urban sprawl





Map 1. Metropole of Douala and its main upcoming centralities. Source: UN-Habitat

METROPOLE STRATEGY: The great game of the future metropolis

At the level of the city of Douala, in five to ten years, the process of metropolisation will result in the urban extension of the city of Douala towards other peripheral subdivisions. It tends to redistribute and reposition the current centralities in a new network of polarities. Indeed, projects such as the BRT; or the urban renovation of the envisaged neighbourhoods will shift the urban landscape and its dynamics. The need to articulate these polarities according to their challenges and their urban identities will be decisive for the effect of competition between them to be faded and not be exacerbated. The reflection on the articulation of these poles will be essential to developing a sustainable and resilient model.

Douala 4 should be positioned in relation to the other subdivisions and peripheral towns that will be absorbed by the urban sprawl of the city. The urban vision of the subdivision must strengthen its urban identity and stand out from the other subdivisions through its uniqueness. The challenge is also to be part of the dynamics of the Douala metropolis, and to be linked to the other subdivisions in a system of networks and complementary urban centres, to achieve sustainable and resilient development. As mentioned in the *charette* and the Spatial profile, Douala 4 Wouri riverbanks, its strong demographic growth as an available workforce, its economic potential and its geographical proximity to the NOSO area and Douala city centre represent action levers for the development of the subdivision. The perspective of Mambanda, today a host neighbourhood, could serve as a reference for the other surrounding neighbourhoods disrupted by population movements. Douala 4 and the Mambanda neighbourhood will no longer have the role of a dormitory or transit suburb but will represent one of the major poles in the city-region. The functional mix and the practices linked to the rivers will prove to be a major asset in its development. Given this ambition, the mobilisation of the public and private sectors represents an opportunity to create new synergies in Douala 4 and Mambanda.

The action on Douala 4 and Mambanda will be a structural and phased action completed by more quick and soft actions to have a diffuse and rapid impact.

The UN-Habitat team has developed five objectives for Douala 4 and Mambanda. These five objectives are linked together to form a city model that is better adapted to local realities and respond to the challenges facing the subdivision.

COMPACT
SUSTAINABLE WALKABLE
RESILIENT
CONNECTED
AND MOBILE
RIVER CREATIVE AND RECREATIONAL

DOUALA 4 AND MAMBANDA STRATEGY



RESILIENT CITY

A sustainable and resilient city is a city that implements an environmental, economic and social project. It offers a pleasant living environment to all its inhabitants over the long-term. To achieve this, it offers clean green spaces, the enhancement of existing nature (river, forest, etc.), and access to basic services that are equal and more ecological. A sustainable city also promotes citizen participation in decision-making processes concerning their environment (access to basic services, housing), community life and solidarity. The resilient city relies on endemic strengths, to resist and innovate, and integrate new ways of living in the face of climate change.

Environmental resilience

Douala 4 has many natural features to protect. These spaces, sometimes not urbanised, contribute to the balance of the natural ecosystem of the subdivision. Mangrove forests, wastelands, marshes and forests represent a natural barrier to flooding and increasingly intense rainfall. Climate change is likely to lead to increased rainfall and air pollution. Due to the richness of the natural environment, mitigate measures such as nature-based solutions to face climate change could be encouraged. . In the sustainable and resilient city, the green spaces contribute to the reduction of air pollution and better living comfort for the inhabitants. Seifu & Stellmacher (2021) suggests the importance to develop small size green parks rather than few big ones to provide day-do-day benefits to inhabitants. .

Other actions such as planting trees in the pedestrian walkways could help to counteract the effects of environmental pollution.

Other measures should accompany environmental protection, such as waste control and sewage disposal. In fact, the lack of waste management and sewage infrastructures are the main factors of soil pollution. An equal access to urban basic services with the implementation of sewage disposal and waste collection accompanies environmental protection.

Socio-economic resilience

Equal access to urban basic services

Equal access to basic services is a condition for promoting a resilient model. Indeed, unequal access to basic services currently leads to undignified living conditions, pollution and environmental degradation. More sustainable solutions can be suggested:

- Deploying green energy and equitable access to drinking water through several distribution systems, and,
- Integrating citizen participation (a waste collection system by setting up collection points).

Sustainable Local Economic development

In addition, mixed uses should be favoured to make Douala 4 more attractive, inclusive and equitable. The economic and social integration of the population especially the IDPs, is one of the axes of the compact city, by offering employment opportunities and making a variety of socio-cultural services accessible to them. In Douala 4 and Mambanda, the local economic centres that provide employments must be duplicated within the city to create a network. The current economic centres will be strengthened by the renovation or construction of commercial buildings (e.g., market halls), and training to the vulnerable population (IDPs, women, etc.) will be encouraged. Public-private partnerships can build on policy measures and PPPs (CSR policies of companies, encouraging negotiated urban planning). Supporting the development and structuration of small businesses could facilitate vulnerable populations' access to employment. For example, IDP women in the Mambanda market can access a subsidised space reserved for them.

Participation and building partnerships

The sustainability of this model requires the involvement of local stakeholders. Two principles should be stated:

- Follow a bottom-up approach, i.e., the involvement of civil society in the design and management of these areas to allow for better inclusion. Involving civil society would probe and respond to the needs of the reality on the ground optimally.
- Promote the coordination of partnerships of the territory (private and public actors) in the development of the subdivision and strengthening

of the local urban governance system.



COMPACT CITY

According to the principles reiterated in the New Urban Agenda (Habitat III, 2016), the compact city consists of controlling urban expansion, which consumes space, through the densification of buildings, the transformation of housing patterns, equity in the face of urban service and basic services deficits, the application of a mix of uses and the attractiveness of the services it offers through the creation of revitalised centralities. The compact city allows for a high residential density in mixed neighbourhoods. UN-Habitat focuses on urban forms as levers for the sustainability of the city.

Douala 4 is expanding with informal settlements that put pressure on the city's already saturated basic and social services. The Mambanda neighbourhood illustrates the effects of the urban sprawl experienced in Douala 4. To encourage a new paradigm of urban development in the subdivision, the vertical densification of housing and the use of local materials must be promoted to respond to demographic growth. The housing must be in line with the habitat modes (accommodation centres, collective housing, social housing, etc.) and match ecological and international standards. Moreover, neighbourhoods will be equipped with basic services (water supply, electricity and waste collection) to ensure equal access to decent housing. Urban renewal programmes, the revitalisation of economic centres and the optimisation of mobility between neighbourhoods are tools to be suggested.

The process of densification may include vertical zoning which means to have mixity of uses in buildings. Lower level should be dedicated to several range of activities. Vertical zoning takes into account the possibility to design rooftop in a way to develop recreational activities. Making Douala 4 and Mambanda more inclusive and compact also means organising social spaces that catalyse different practices, places relaying the city hall and the population. Their accessibility should be guarantee within a ten-minute walking distance from

their house, otherwise, buildings could be composed of small courtyards to compensate for the lack of green and public spaces.

To be attractive and safe and to promote a walkability environment, public spaces and streets might develop different uses (commercial , leisure). Pedestrian crossings and public lighting represent tools to provide a safety feeling for the inhabitants and other people coming to the subdivision.



CONNECTED AND MOBILE CITY

The connected and mobile city is a city in which traffic and travel are provided by an efficient transport system. The modes of transport are varied and accessible financially and geographically to all populations. This transport network must enable people to reach the central areas of neighbourhoods and the city's main centres to contribute to socio-economic equality.

Douala 4 and Mambanda are characterised by urban divisions and a road network in poor condition, which has an impact on traffic flow, travel and access to employment. In addition, there is a limited public transport supply, which is made up of collective taxis, private vehicles and motorbike taxis. Non-motorised mobility, such as walking and cycling, is struggling to develop due to the lack of safety and civic mindset on the road. However, given the demographic growth and extension of the city, Douala 4 should be part of a network of connected centres to control. Consequently, access to the town must be rethought and configured on the scale of Douala and within the neighbourhoods of Douala 4. The optimisation of inter-communal mass transport and the development of a network of inter-district minibuses could relieve the congestion experienced in the city. The restructuring of the road network, including the paving of roads and the connection of Douala's socio-economic centres, must be priorities.

Within five to ten years, other more ambitious initiatives can be proposed, such as the activation of the railway

open to passenger transport to shuttle between Douala's polarities. Non-motorised mobility is one of the levers for strengthening accessibility. In fact, according to UN-Habitat surveys, inter-mobility can be a lever for connecting informal settlements to the centres such as Mambanda. The pedestrian network can connect the commune's economic centres and centres of attraction (shopping and leisure areas) to improve access to certain services and employment.



RIVER CITY

The river city is a city reconciled with its river, seen as a lever for development and well-being. River-related activities and social practices are created around the river and flood control facilities are built to encourage the appropriation of the river. From then on, the perception of the river is defined as an asset and no longer as a danger linked to floods.

Douala 4 and Mambanda are located on the banks of the Wouri. Today, the development of the riverbanks is managed mainly by the port activities or has been abandoned in favour of informal occupation. Indeed, the banks of Mambanda are concerned by two Déclaration d'Utilité Publique which will lead to new urban trajectories and specific developments for port activities. The Eastern part of the shoreline will remain to be developed. However, it would be interesting to exchange with the PAD about its development and to apply a negotiated urbanism before any displacement. Given Douala's geographical location and the natural risks, it is important to encourage a mutual urban development strategy along the Wouri River with all the stakeholders of the Port and the city.

The creation of a mixed waterfront could be composed of different urban sequences: industrial activities, river activities (fishing, tourism, grazing) and landscaping (promenades, public spaces), and the construction of mixed housing. It represents an economic and social lever:

- the port is a source of employment,
- the development of public spaces ensures fluidity

in the mobility of the inhabitants and access to the water,

- the development of river economic activities will highlight potential of the Wouri as a lever of local development. In fact, activities such as tourism (i.e sightseeing tours), recreational (swimming area, sports), mobility between the two main riverbanks, and agricultural practices could be a way to renew and to increase current practices.

Access to the waterfront must be guaranteed to the inhabitants and not to be monofunctional use. The natural richness of the biodiversity (mangrove, fauna) and the diversity of the existing sites are major assets for developing multiple functions, creating new employment opportunities, green spaces and improving the living environment of the inhabitants.



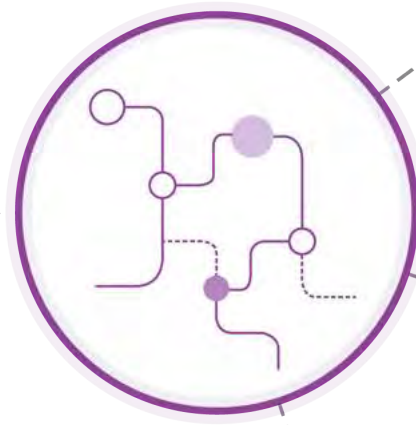
CREATIVE AND RECREATIONAL CITY

The creative and recreational city offers spaces for expression, sport and art for all (including vulnerable population). These are places of exchange and sociability which transform the city physically but also in its organisation and its way to be seen. It determines the urban identity of a city by highlighting the customs and culture that characterise it.

Douala 4 and Mambanda suffer from a lack of creative and recreational spaces (public spaces, leisure facilities). Indeed, during the *charrette*, youth representatives and civil society raised the difficulty for children to occupy themselves but also the lack of sports and cultural facilities for adults. Places of sociability can facilitate the integration of English-speaking displaced populations. Arts centres, social centres and outdoor spaces improve the living conditions of the inhabitants and give them a sense of belonging to a community. Creative spaces are essential to counterbalance the existing social malaise, and the suffering endured while their journey. They are therapeutic spaces for people who live in precarious conditions or have little access to the city.

The vision of Douala 4 and Mambanda will be implemented through the progressive introduction of urban interventions.

CONNECTED AND MOBILE CITY



RESILIENT CITY



EQUIPPED SUBDIVISION D





Fig. 2 Overall urban vision strategy
Source: UN-Habitat

The Visioning for Douala 4 and Mambanda is a process by which communities and key stakeholders define the future that they envision for the city. This future should encapsulate the positive aspects of Douala that should be protected while identifying and addressing the existing challenges. The vision aims to define what Douala 4 should look like spatially, socially, economically, and environmentally in five to ten years. It is important to establish this common vision and scenarios of Douala's future as it provides the direction that all future development should take, i.e., the vision will guide all aspects of managing future investments and changes in Douala 4 and Mambanda.

Douala 4

The construction of the urban vision of Douala 4 built on the strengths and ongoing opportunities identified to respond to the identified challenges and create an urban vision corresponding to the expectations of stakeholders.

The application of these five objectives described above structures strategic interventions articulated around four main pillars:

- Strengthening road infrastructure to facilitate economic exchanges and mobility for local residents. The main goal is to improve the road network by paving dirt roads and developing pedestrian corridors and to organise intermodality between the different modes of transport on the axis of the new road and the old road
- Protecting and enhancing the environment to ensure a sustainable environment. The strategy is global and is deployed in several areas of Douala 4: creating areas to be protected and valued on the edge and banks of the Wouri. The enhancement of existing nature will result in the development of eco-tourism and craft activities.
- Improving living conditions and facilities to promote an inclusive and equitable environment. The development of new economic centralities and the strengthening of existing centralities will make it possible to offer a diversified job offer. To meet the demand for social facilities, new CSIs will be created and shared between neighbourhoods. Public primary schools will be built. Community centres will be proposed in each neighbourhood in order to have a place of reference and sociability for

community gatherings. These centers will also be the link between the municipality of Douala 4 and local residents.

- Expand access to decent housing to standards equipped with basic services. The strategy provides for a diversification of housing forms and type of housing (private and social) in order to promote social diversity and eradicate current social segregation. The housing programme provides for the densification of new buildings and old ones in good condition of construction. Various tools such as urban renewal programmes will be a lever to restructure informal neighbourhoods, housing estates can be developed in less dense neighbourhoods.

Mambanda

Mambanda's urban vision is based on the five objectives for Douala 4. The strategy includes the four principles for Douala 4 deployed in the pilot neighbourhood. These pillars are adapted to the neighbourhood and the challenges encountered.

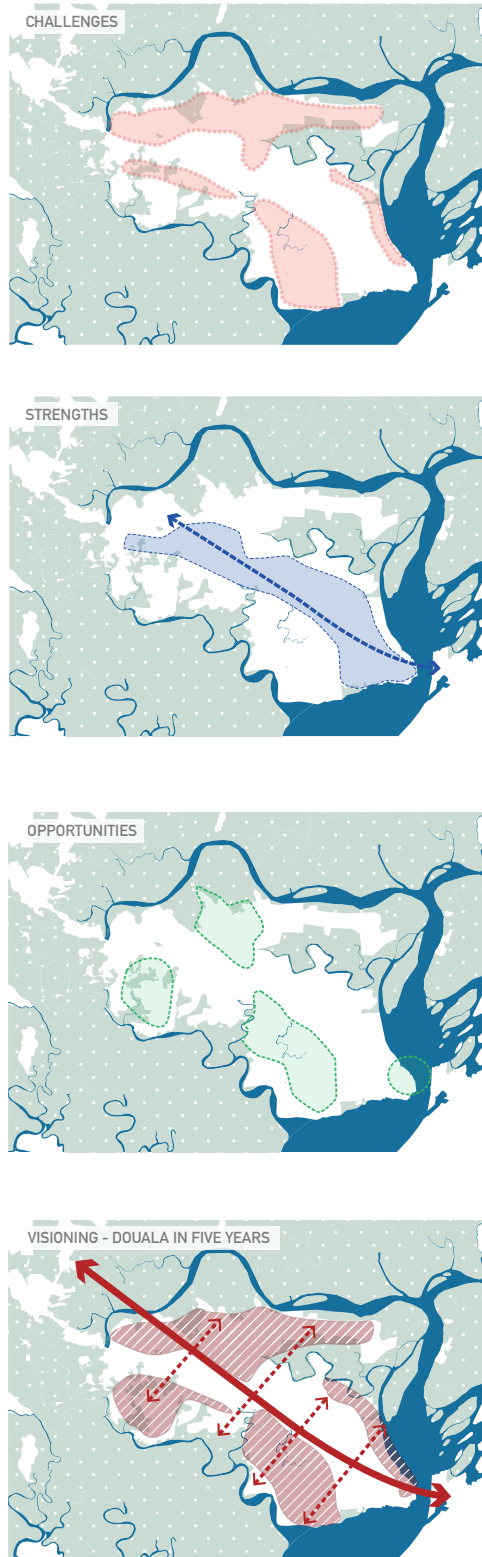


Fig. 3 Challenges, strengths, opportunities and visioning of Douala 4
Source: UN-Habitat

Urban Vision for Douala 4

LEGEND

Transportation

- Primary road
- Secondary road
- +++ Railway

Administrative boundaries




- Neighbourhood

Natural system



- Watercourse
- Wetland (no-building zone)

1. STRENGTHEN ROAD INFRASTRUCTURE TO FACILITATE INTER-COMMUNAL EXCHANGES AND THE GOOD FUNCTIONING OF ECONOMIC ACTIVITIES

Improve the main road (Route Nationale N23)


-  Development of new intermodal hub
-  Strengthening of existing intermodal hub
-  Improvement of road equipment (sidewalks, lighting, gutters, vegetation, etc.)

Structure the road network

-  Linkage between the N23 and secondary and tertiary roads
-  Linkage between the two sides of the Wouri river




2. PROTECT AND VALUE THE ENVIRONMENT TO ENSURE A SUSTAINABLE, HEALTHY, AND SECURE ENVIRONMENT

Protect the natural resources

-  Protection and restoration of natural spaces (mangroves, wetlands, Wouri river shoreline)

Value the natural heritage / Develop ecotourism

Development of the banks of the Wouri river

-  Port development (public spaces, social services, etc.)
-  Eco-tourism (river activity, natural protection), improvement of the living environment of the population
-  Ensuring access to the waterfront for all


3. IMPROVE THE LIVING CONDITIONS AND URBAN AMENITIES TO ENSURE AN INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE URBAN ENVIRONMENT

Areas to develop in priority

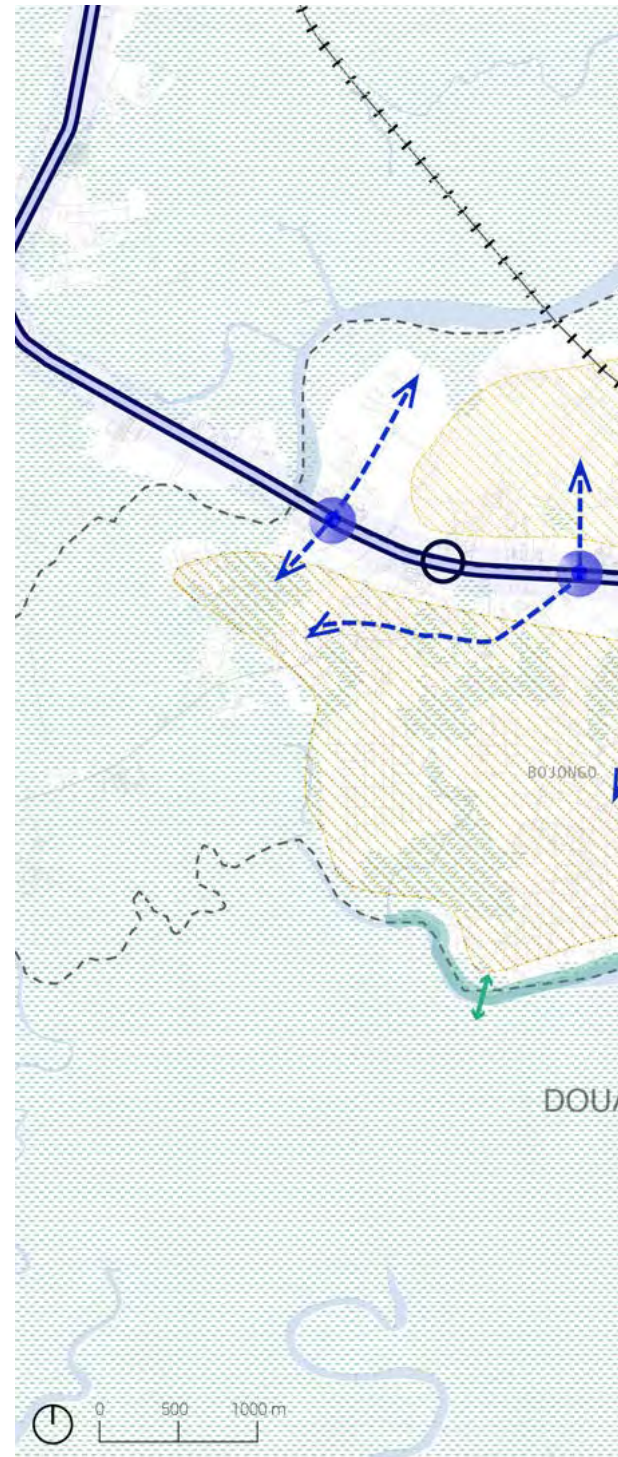
- Development of public infrastructure (basic urban services (waste collection, water, electricity), health, social, and cultural services)
- Valorisation and development of public spaces (open and inclusive)
- Creation of open and inclusive spaces

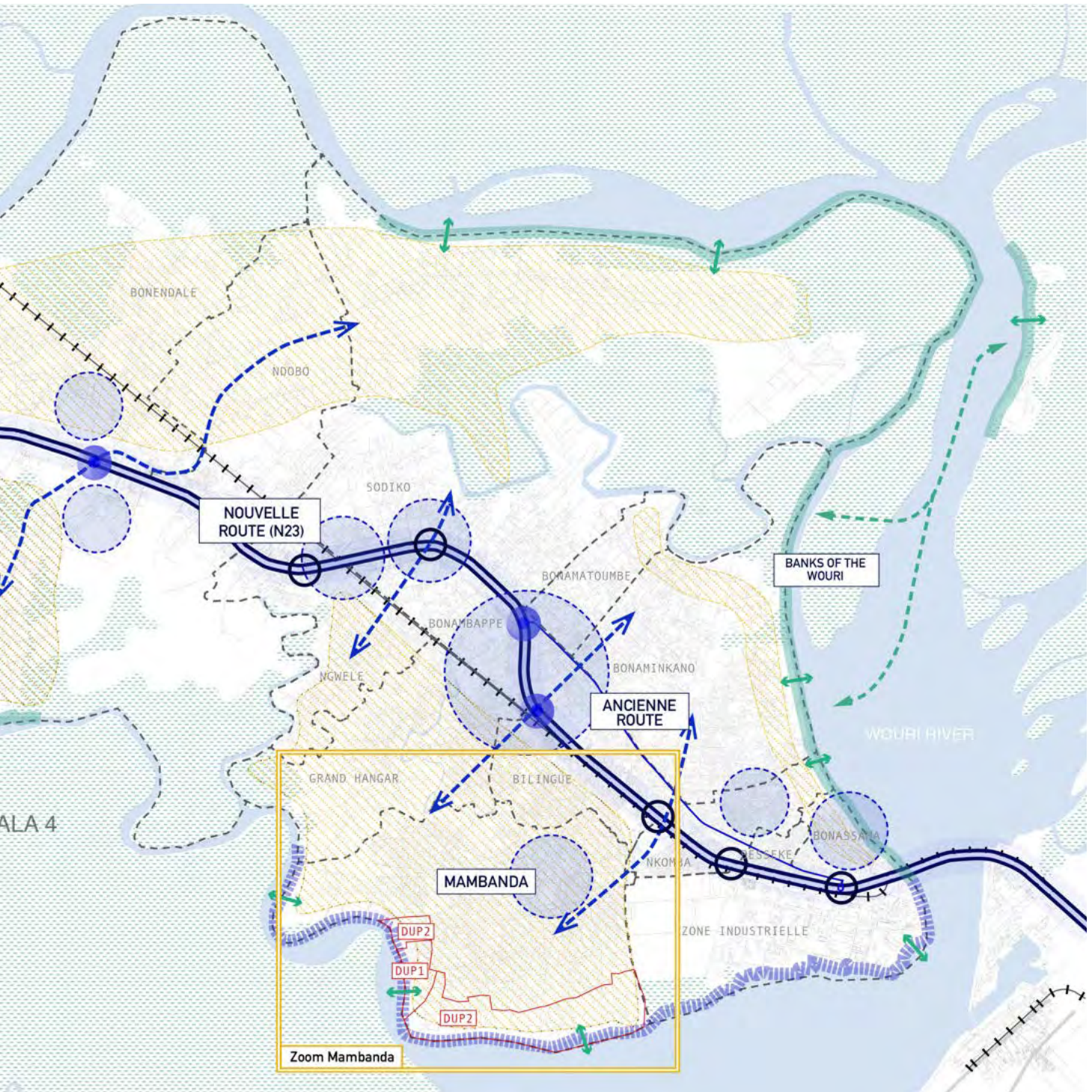
Strengthening of existing centralities

4. ENSURE FOR ALL TO ADEQUATE, SAFE AND AFFORDABLE HOUSING AND BASIC SERVICES

-  - Diversification of housing types
- Promotion of social housing
- Housing densification as an alternative to space deficit

-  Mambanda, neighbourhood to develop in priority





Map 2. Visioning map of Douala 4 from the workshop
Source: UN-Habitat

Urban Vision for Mambanda

LEGEND

1. STRENGTHEN ROAD INFRASTRUCTURE TO FACILITATE INTER-COMMUNAL EXCHANGES AND STRUCTURE THE NEIGHBOURHOOD

Improve the main road

- Development of new intermodal hub (bus, taxis, moto-taxis)
- ▬ Improvement of road equipment (sidewalks, lighting, gutters, vegetation, etc.)

Structure the road network

- ▬ Linkage between the main road and secondary roads
- ⋯→ Linkage between Mambanda and nearby neighbourhoods

2. PROTECT AND VALUE THE ENVIRONMENT TO ENSURE A SUSTAINABLE, HEALTHY, AND SECURE ENVIRONMENT

Protect the natural resources

- ▨ Protection and restoration of natural spaces (mangroves, wetlands, Wouri river shoreline)

Value the natural heritage / Develop ecotourism

Development of the banks of the Wouri river

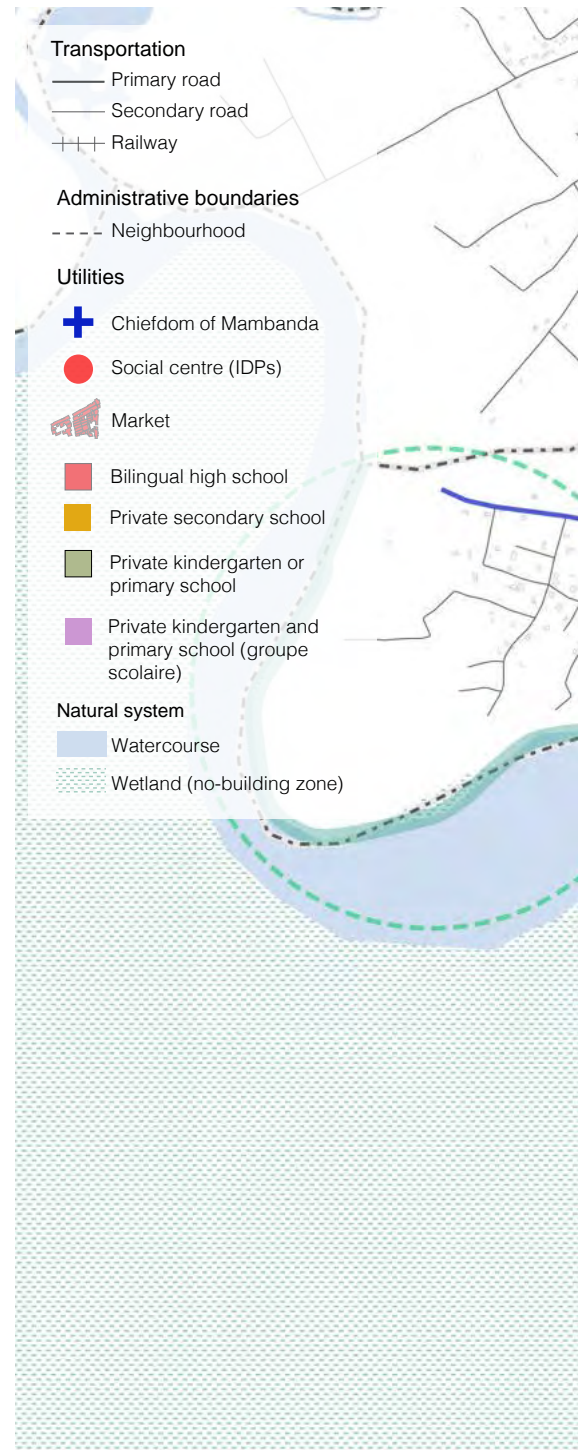
- ▨▨▨ Port development (public spaces, social services, etc.)
- ▬ Eco-tourism (river activity, natural protection), improvement of the living environment of the population
- ↔ Ensuring access to the waterfront for all
- ▬ Visual and physical porosity
- Creation of catchment areas (to develop touristic activities) and recreational spaces

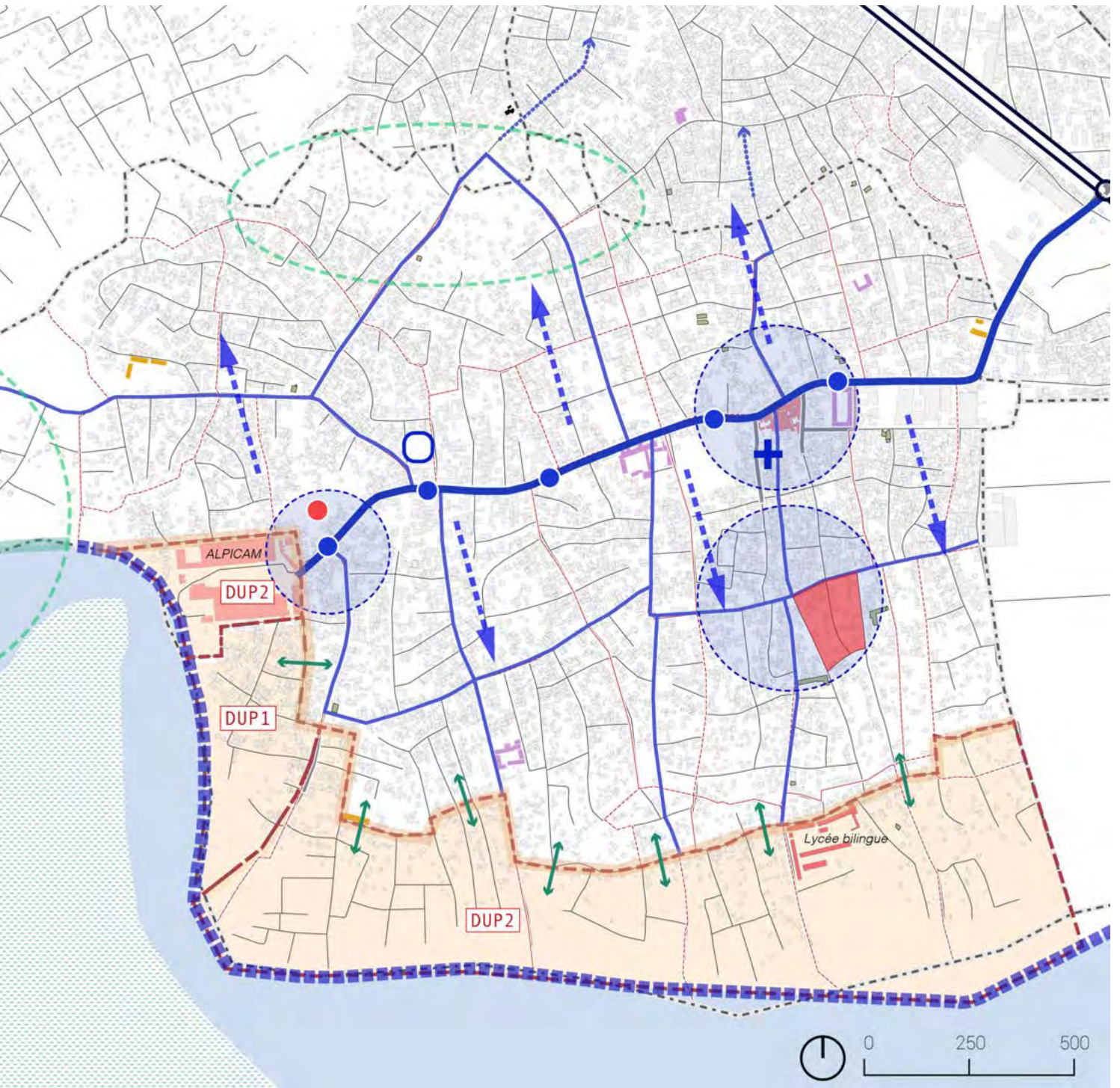
3. PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL

- ▬ DUP - Negotiated planning zone to both foster the local economic development and improve the living conditions of the inhabitants
- Strengthening of existing economic centralities

4. IMPROVE THE LIVING CONDITIONS AND URBAN AMENITIES TO ENSURE AN INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE URBAN ENVIRONMENT

- ⋯→ Urban regeneration — improvement of access to basics services (water, electricity, waste collection) and access to adequate and affordable housing (housing densification and social housing)
- ▬ Relocation and densification of the bilingual high school of Mambanda
- ✕ New primary school
- Transformation of the current CMA into a hospital





Map 3. Visioning map of Mambanda from the workshop
Source: UN-Habitat

02

SCENARIOS

Introduction

Following the visioning part, it is possible to draw the first projections for 2030. The scenario section will present the main future trends resulting from the analysis of the Spatial profile and the urban strategy for Douala 4 on the basis of the main five principles identified in the previous chapter. These major trends will be represented in two scenarios: the business-as-usual scenario and the optimal scenario.

From Assessment to Scenario Building

The Spatial profile so far has established and summarised the challenges and opportunities that impact Douala 4. Understanding these key challenges and opportunities provides a contextual framework to the current status of Douala 4. These challenges and opportunities have been verified by stakeholder engagement session that was undertaken and aligned against the SDGs (Sustainable Development Goals).

This framework has formed the basis from which the most important trends affecting the area's future trajectory are established. These trends or variables are used to develop different future scenarios for the area up to 2030. The Vision also provides the key direction for future development of Douala 4 and the main priorities to be considered when planning the future of the area. This vision is a collective understanding from all stakeholders on how the area should look like in five-ten years from now.

The complex interrelationships between trends, priorities and realities are simplified in this section of the report to provide two scenarios of what Douala 4 could look like in 2030. Along with the factors that determined that outcome.

Scenario A - "**Business as Usual**" demonstrates the current trend of growth of Douala 4 where the urban expansion is uncontrolled and Douala 4 is limited to face identified challenges, hence undergo insufficient measures linked to a lack of investments.

Scenario B "**Planning for Growth and Resilient Development**" demonstrates the scenario where Douala 4 is able to reach its full potential, mitigating key challenges and defining a sustainable and balanced urban development. This scenario will reach the five

objectives described in the vision part to lead for the expected vision which is "**By 2030-2035, Sustainable, inclusive, innovative and equipped, Douala 4 and Mambanda will be**".

Development Scenarios - Methodology

Scenario building provides an opportunity to explore, create and test probable future conditions, both desirable and undesirable, and assess the probability and impact of the different scenarios on the area in accordance with past and present trends. Additionally, scenario building can guide long-term planning: including policies, strategies, and plans, to help align the desired and likely future circumstances, and outline the important milestones along the way. These scenarios can enable policy and decision makers to grasp the long-term requirements for sustained advantages and growth, and mitigate possible complications by developing adaptive strategies.

A typical scenario building approach for urban contexts experiencing forced displacement is the chain of plausibility approach, which includes a detailed review of all possible events and developments. Scenario building, using this approach, starts with establishing hypothesis or minimum conditions that are required for any of the scenarios to develop, then identifying variables that are likely to spark a chain of events resulting in a series of potential impacts. Informed assumptions are then made on the most important variables and the direction of these variables.

The **variable** is a development or event that has the potential to cause a change in a humanitarian situation and **outcomes** are directions that a variable can take (e.g., increase, decrease). The impacts of each isolated variable outcomes are broadly outlined but are explored in a more composite manner when combined together as part of the potential scenario.

In the following section, the research question that will be considered in the scenario building process is **Given the context of Douala 4, how can the area be developed to support more inclusive and resilient communities? And which events would lead to substantial changes in the built environment? What is the expected impact and likelihood?**

Below, the selected variables are explained more broadly, and their interlinkages are analysed.

The main variables selected are:

- 1) Urban Footprint;
- 2) Catalytic Projects;
- 3) Development projects (Social and Basic Services);
- 4) Local Economic Development;
- 5) Environment and Climate Change;
- 6) Urban Governance.

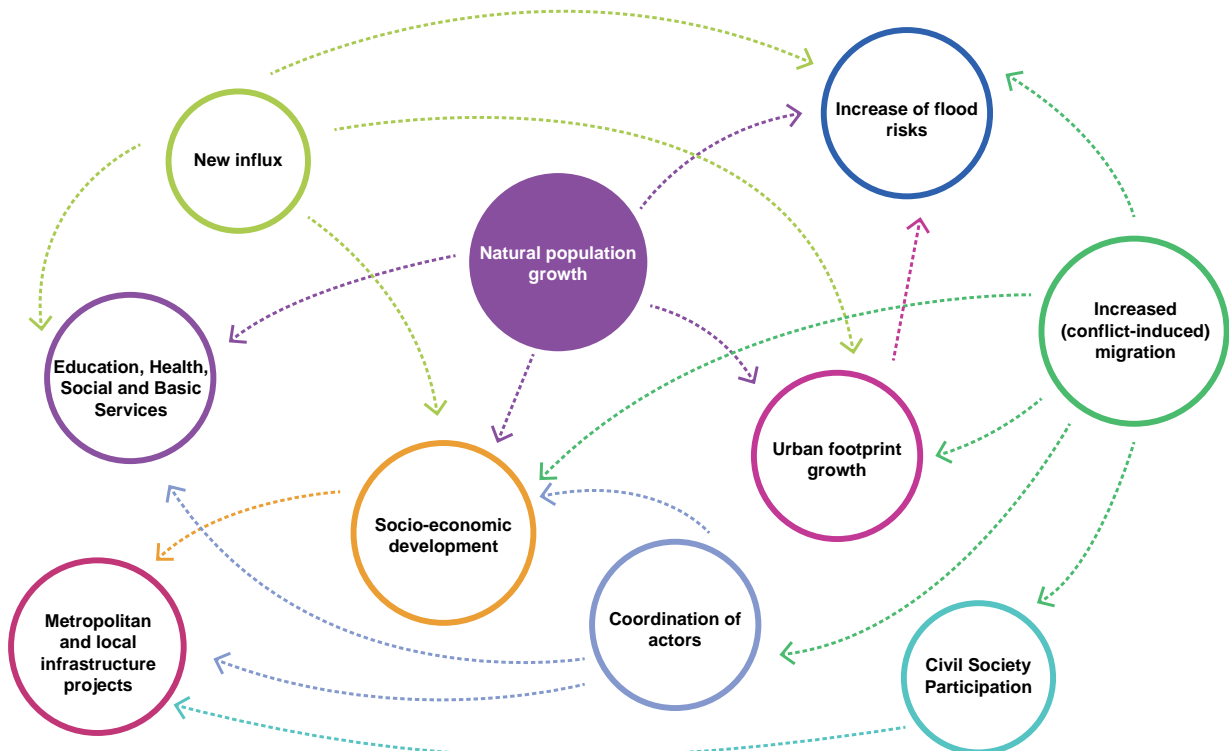


Fig. 4 Variables for the scenario building
Source: UN-Habitat

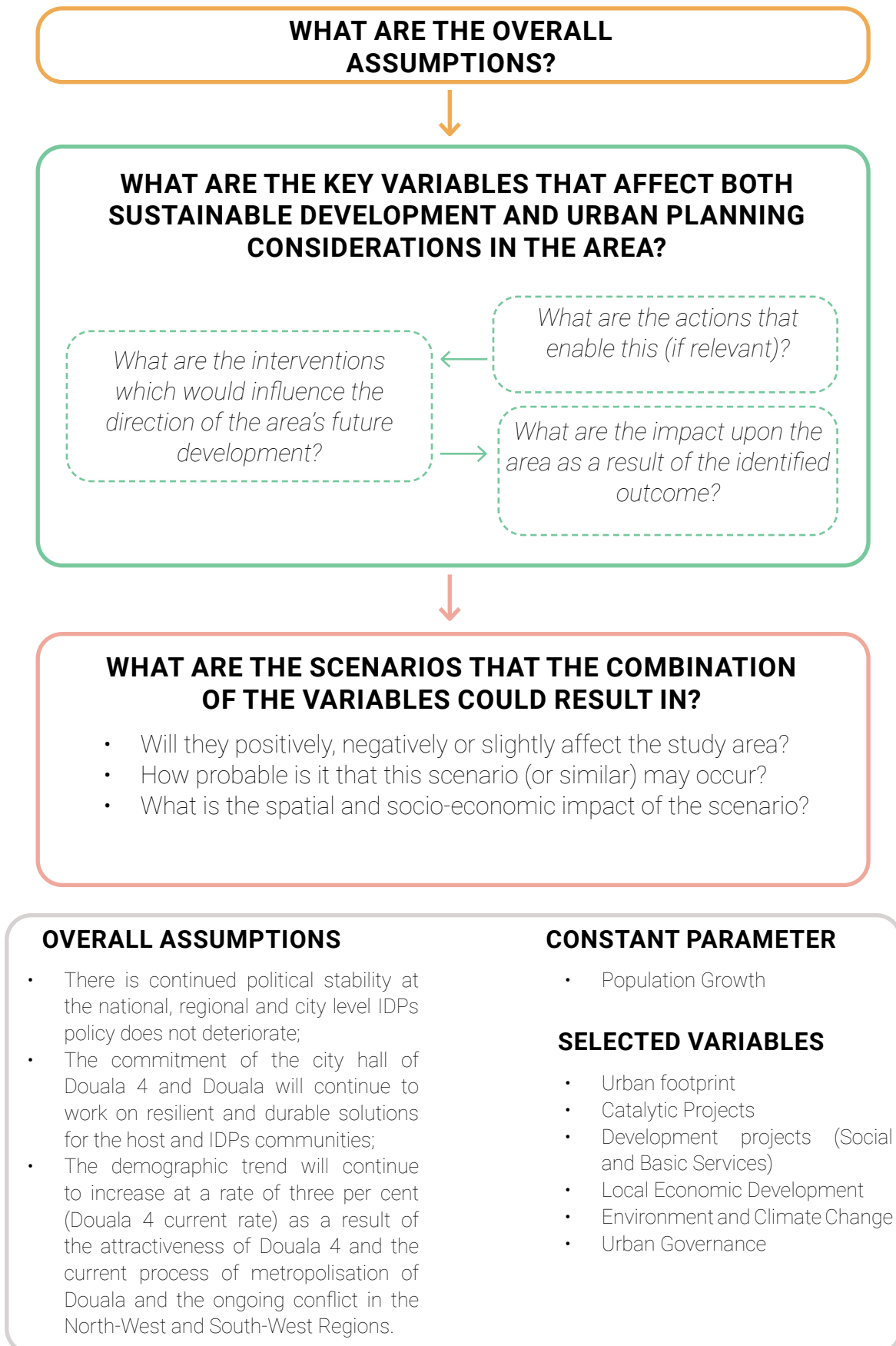


Fig. 5 Methodology of the scenario building
Source: UN-Habitat



Photo 3. Participants during the Scenario Validation Workshop
Source: UN-Habitat

CONSTANT PARAMETER: POPULATION GROWTH

A key variable has been identified as a stable parameter resulting in mainly one possible outcome. Indeed the population growth of Douala 4 will likely remain at a rate of 3,10 per cent per year. Migration flows coupled with natural population growth constitute a stable parameter in the scenarios. This dynamic will impact future infrastructure provision and the potential economic growth of Douala 4.

The subdivision of Douala 4 currently experiences a significant population growth with more than 10,000 new inhabitants per year.¹ On the one hand, this recent population increase can be explained by the arrival of a large population of IDPs, coming from the South-West and North-West Regions of Cameroon but also migrants coming from neighbouring countries (Nigeria, Central Africa Republic, Chad, etc.). 23,070 IDPs were estimated in Douala 4 in 2021 (i.e., 5.3 per cent of the subdivision's population). Douala 4 hosts the largest part of IDPs in the city due to its geographical situation – it is the main gateway to the city of Douala from the West part of Cameroon. This population pressure is entangled with the Anglophone crisis in the West Regions of the country. Therefore, the upcoming events will likely impact the population stagnation or increase in Douala 4, shaping the urban development of the city. These types of migration are coupled with rural-urban migrations of people coming to Douala mainly for employment opportunities and education. Circular and seasonal migrations also contribute to this pattern and need to be considered.

On the other hand, the city's growth will result from the movement of population within Douala. The process of metropolisation of Douala, with the reclassification of rural areas into urban areas on the outskirts of the city, and the high cost of life in the centre greatly participates in the growth and urban sprawl of the urban population (Kessides, 2006). In this respect, the growth of host communities will emphasise this urbanisation pattern.

As a result, scenarios must foresee demographic trends with the aim to consider possible adaptations to be put in place. These actions concern:

- Social inclusion of IDPs among host populations and between them;
- Gender equality (access to education and employment, social protection, reducing gender-

- based violence and young women prostitution);
- Employment opportunities for all;
- Access to adequate and affordable housing for all;
- Access to urban basic services (water, electricity, waste management) and social services (education and health) for all;
- Access to affordable and efficient public transportation for all.

Therefore, this parameter will be taken into account for the following analysis of the variables.

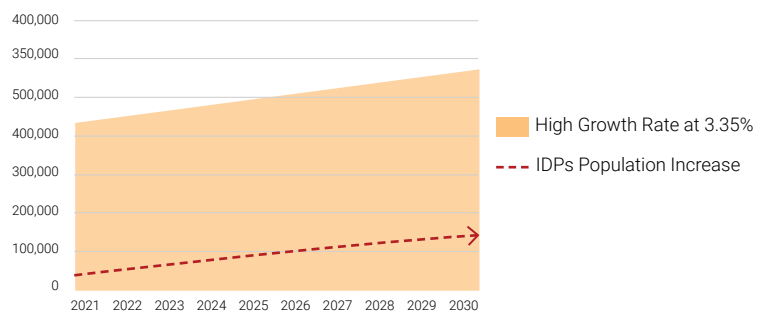


Fig. 6 Projected population growth of Douala 4
Source: UNHCR, UN-Habitat 2022

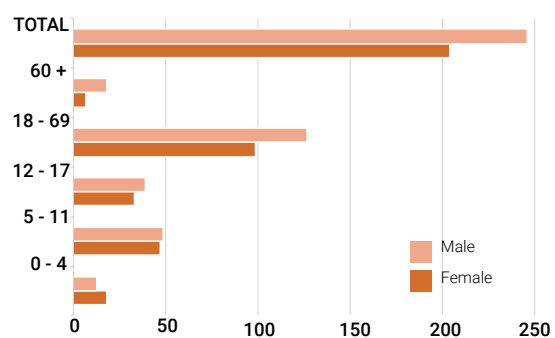


Fig. 7 Numbers of refugees by age in Douala
Source: UNHCR, UN-Habitat 2022

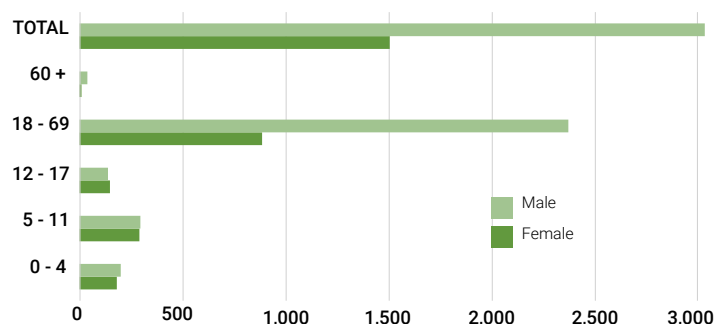
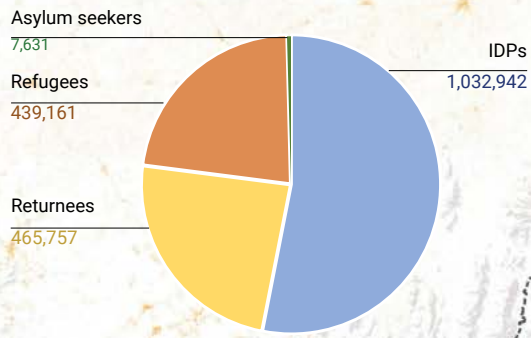


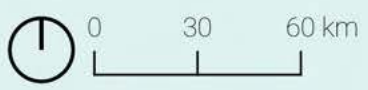
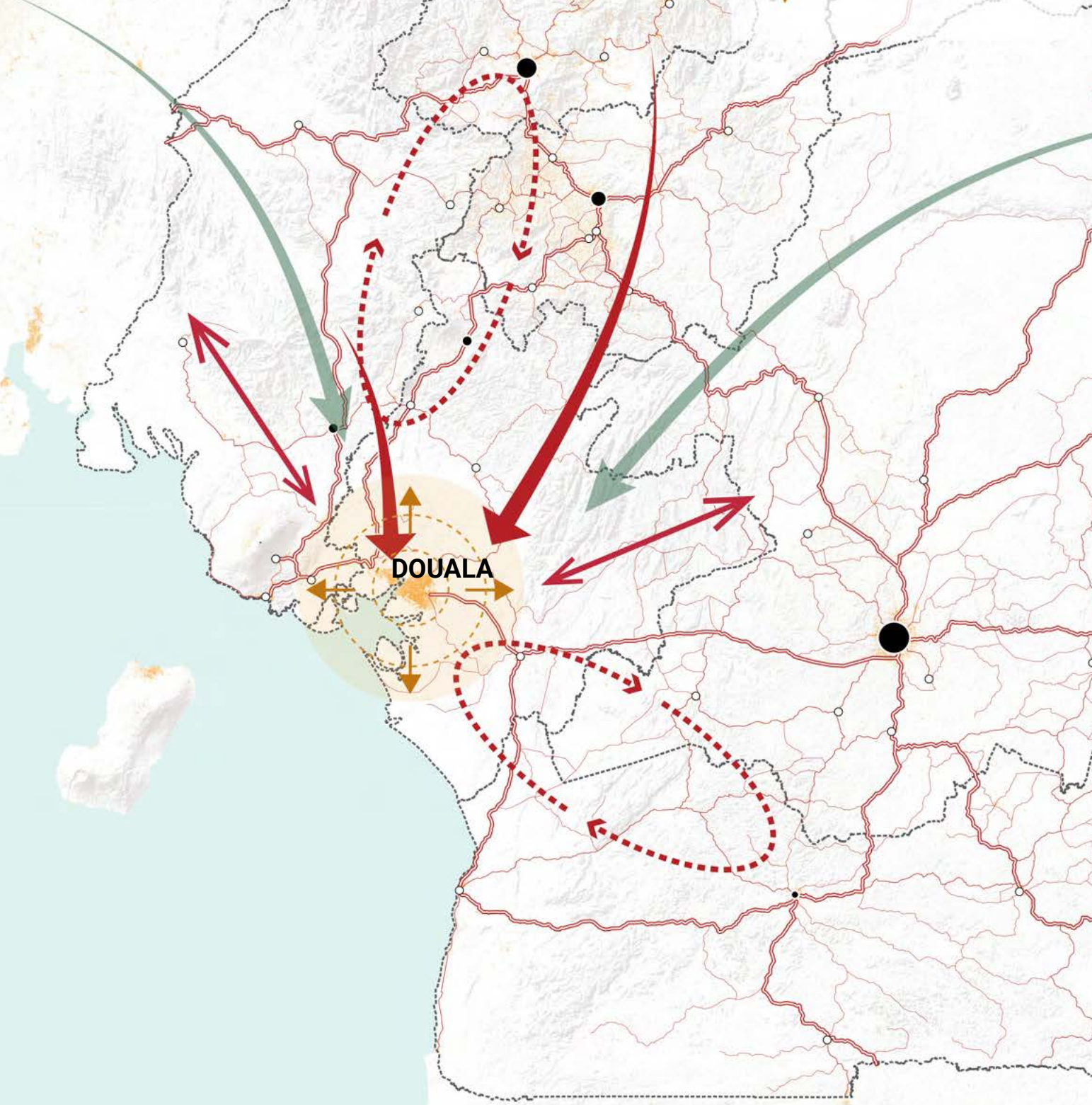
Fig. 8 Numbers of asylum seekers in Douala
Source: UNHCR, UN-Habitat 2022

Fig. 10 People of concern in Douala
Source: UNHCR, UN-Habitat 2021



LEGEND

- IDPs coming from the South-West and North-West Regions
- Migrants coming from neighbouring countries
- Seasonal migrations
- Rural-urban migrations (people in search of job opportunities and education)
- Urban sprawl : reclassification of rural areas into urban areas coupled with natural population growth



VARIABLE: URBAN FOOTPRINT

Natural population growth, as discussed previously, has the potential to affect the expansion of the urban footprint of Douala 4. This in conjunction with the density of the built areas will define how much more land needs to be developed to accommodate various potential outcomes of projected population growth.

Based on the clear assumption of a population growth projection defined previously with a rate of three per cent (Douala's current rate), Douala 4 could see an increase of 253,499 additional residents by 2030 (inclusive of both host and IDPs communities). This could result in different assumptions of additional land based on different densities and the location of growth:

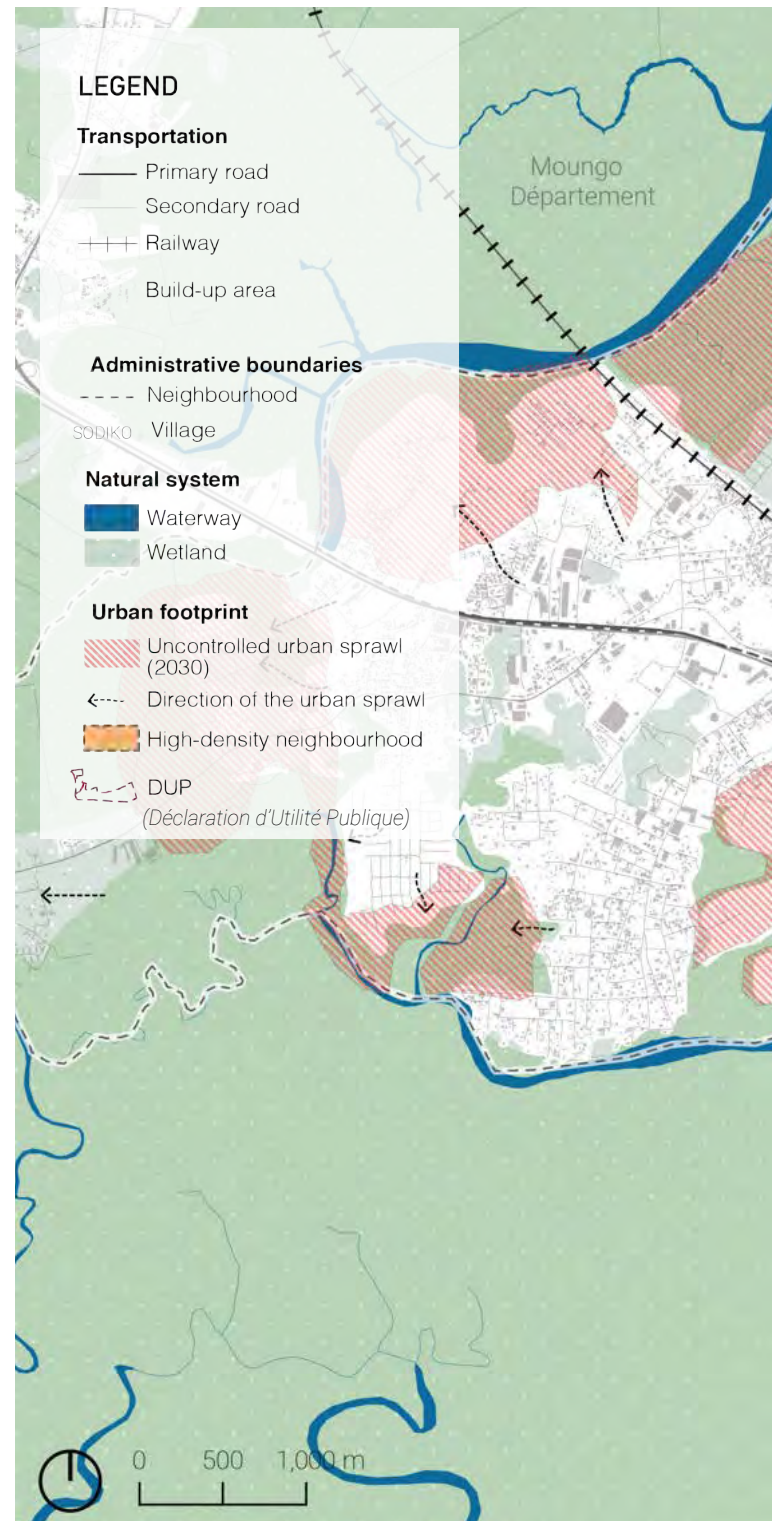
Population increase	Low density 5.000 p/km ²	Medium density 11.072 p/km ²	High density 15.000 p/km ²
High - 253,499	28 km ²	12 km ²	09 km ²

Table 1. Additional area required (km²) depending on density
Source: UN-Habitat

Douala 4 has an existing average medium density of 11.072 p/km². The density distribution among neighbourhoods is unequal. Populations often settle informally in neighbourhoods. 98 per cent of the displaced population and 62 per cent of the host population of Douala 4 is concentrated in six of the 20 neighbourhoods in the subdivision such as Mambanda, Ndobo, Ngwe, Bodjongo, and Bonambappé with a very high population density and poor access to services and housing. They often settle on land that is at a very high risk of flooding, making them even more vulnerable to land security and decent living conditions.

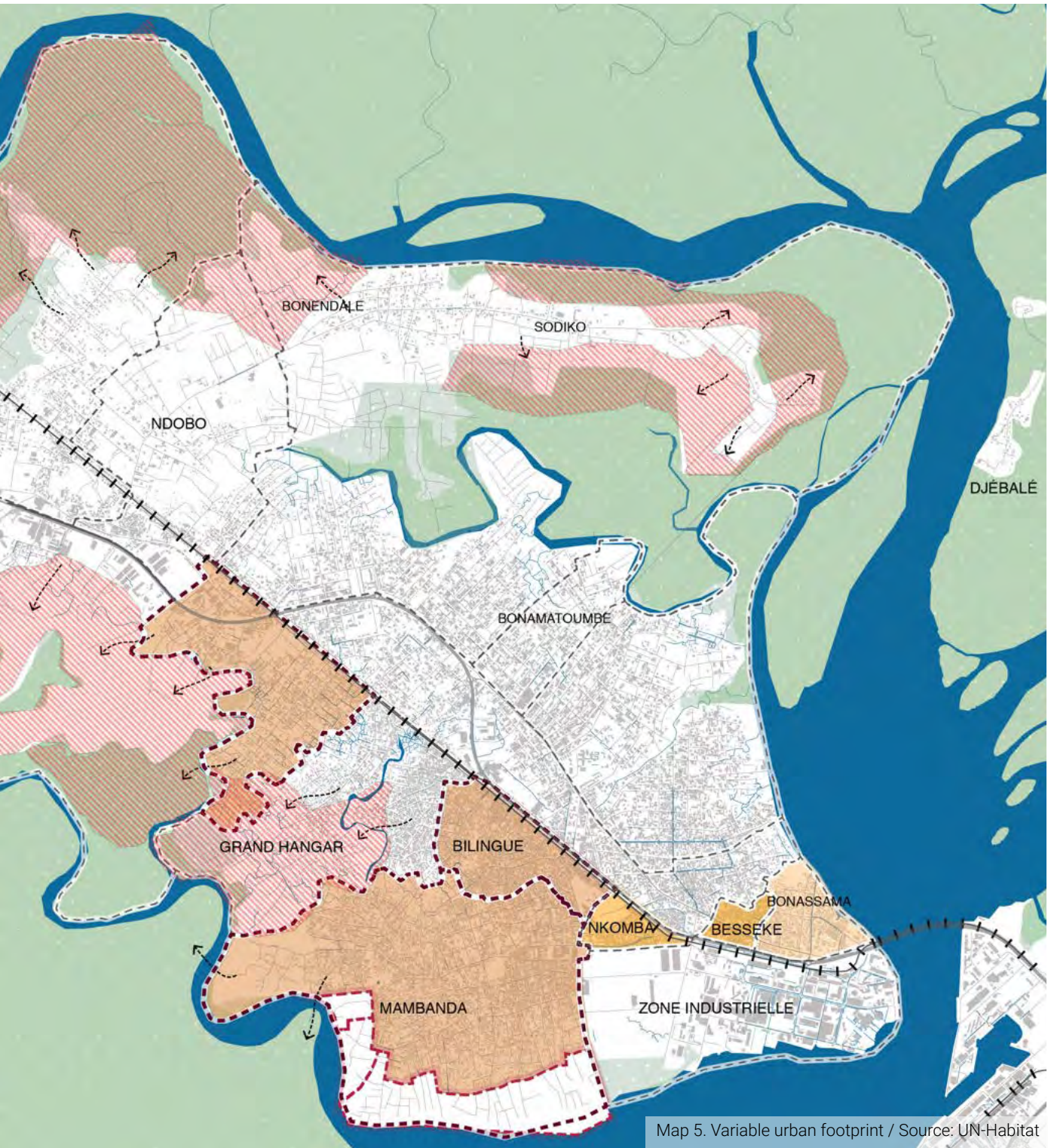
The urban sprawl of Douala has many socio-economic consequences on the Douala 4 subdivision: forests are cut down to make way for the multiplication of informal settlements, basic services remain inaccessible and their costs may increase, and mobility is not guaranteed because the road network has to be created and/or repaired.

Regarding the environmental and climatic situation and the extension of the PAD, Mambanda will be in a critical



situation because the available and secure (sanitary and legal) land will be limited. In addition, to meet the needs of the population, investments for the construction of housing, the extension of the infrastructure network and social facilities will have to be made.

While the projected growth of Douala 4 and its impact on the associated land requirement is itself a variable, a key sub-variable relates to where the projected expansion takes place and good decision-making on this is essential



to the sustainable growth of the area as a whole. There are three potential ways of expansion:

- Infill and vertical densification, this option is to increase the density of existing developed areas within Douala 4 by using vacant land or raising the heights of buildings. This has the benefit of being able to utilise existing infrastructure within the urban footprint however with the possibility of also increasing pressure and demand on those services if not well distributed already.

- Another option is the planned extension areas to promote densification at the same time.
- Uncontrolled expansion with the proliferation of informal settlements and the increase of the social tension.

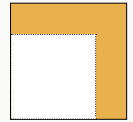
These options would involve the infill of the city's urban footprint, the use of vacant land and requiring additional land to accommodate the growth.

Outcome 1: Planned development based on high growth at high density

This outcome takes into account a high density equally distributed which means a higher density in neighbourhoods with low density and a managed density in the overcrowded neighbourhood such as the six main neighbourhoods hosting IDPs. Developing adequate vertical densification and infill of vacant land in these areas will limit the multiplication of informal settlements and the expansion of the subdivision. Indeed the additional land needed to accommodate the growth would be identified and planned efficiently and should be proactively considered in the establishment of spatial plans to sustainably direct the future growth and development of the area.

The identified areas should have a mix of uses and a qualitative and equitable offer of basic and social services. This control then results from an investment plan for infrastructures and services supported by legislation adapted to the needs of the community at a fair cost limiting impoverishment and environmental degradation.

This outcome aims to follow a development model that allows for the creation of a compact city and a preserved environment. Creating liveable settlements integrated into a wider municipal, regional and international system, while ensuring that the territory is well organised. The compact nature of the area also aims to preserve agricultural areas and ecosystems to ensure the resilience of a region.



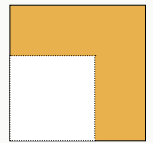
+ 23%
more land required

Outcome 2: Medium and current density as an average density of Douala 4

This outcome is the current trend of Douala 4 urban expansion. Current growth is not mastered, despite the urban planning documents, with informal neighbourhoods receiving a higher population and extensions encroaching on rural lands. Moreover this outcome considers one ongoing projects of urban renewal project and the densification of the Grand Hangar neighbourhood. These projects may prove to be effective in meeting current needs but in the long-term, they will be insufficient. Population growth and the attraction of the private sector

for available land risk aggravating social tensions and deepening existing inequalities.

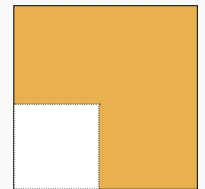
The current lack of land suitable for construction and the limited access to land lead vulnerable people to settle in rural and marshy areas and put a pressure on the few lands available.



+ 32%
more land required

Outcome 3: Unplanned development based on high growth at low density

This third outcome of low density is unlikely to happen and its results could seriously increase land degradation. The population will continue to increase regarding the natural growth and the migration from other regions, even if the growth of IDPs decreases or remain stable.



+ 70%
more land required



Photo 4. A street in Bonabéri
Source: UN-Habitat

VARIABLE: CATALYTIC PROJECTS

The city of Douala is considered the centre of the Cameroonian and Central African economy. As such, it has many strategic infrastructure projects at the regional and urban levels (Autonomous Port of Douala (PAD)), international airport, second bridge over the Wouri River, Douala East Road, Japoma sports complex, etc.). These various projects aim at improving its competitiveness and attracting investment. As for the Douala 4 subdivision, it has several socio-collective facilities intended, according to their purpose and coverage, to satisfy the daily needs of the population. However, the city of Douala is currently facing a few shortcomings that make it less internationally competitive.

The analysis of the infrastructure projects carried out during the Spatial profiling revealed projects planned at the metropolitan² and local levels. These include the following projects:

Metropolitan level	Douala 4 level
<ul style="list-style-type: none"> • BRT (Bus Rapid Transit) project in the city of Douala • Project of a new tramway • Extension of the water system • Kribi-Douala, Loum-Yabassi-Edea railroad project 	<ul style="list-style-type: none"> • Road asphaltting project • Tram project • Project for the rehabilitation of drains • Bodjongo and Mambanda market modernization project • Construction of a Communal Medical Centre • Project to build a sports complex in Bonamatoumbe and Bonassama • Modern bus station in Douala 4

Table 2. Infrastructure projects
Source: UN-Habitat

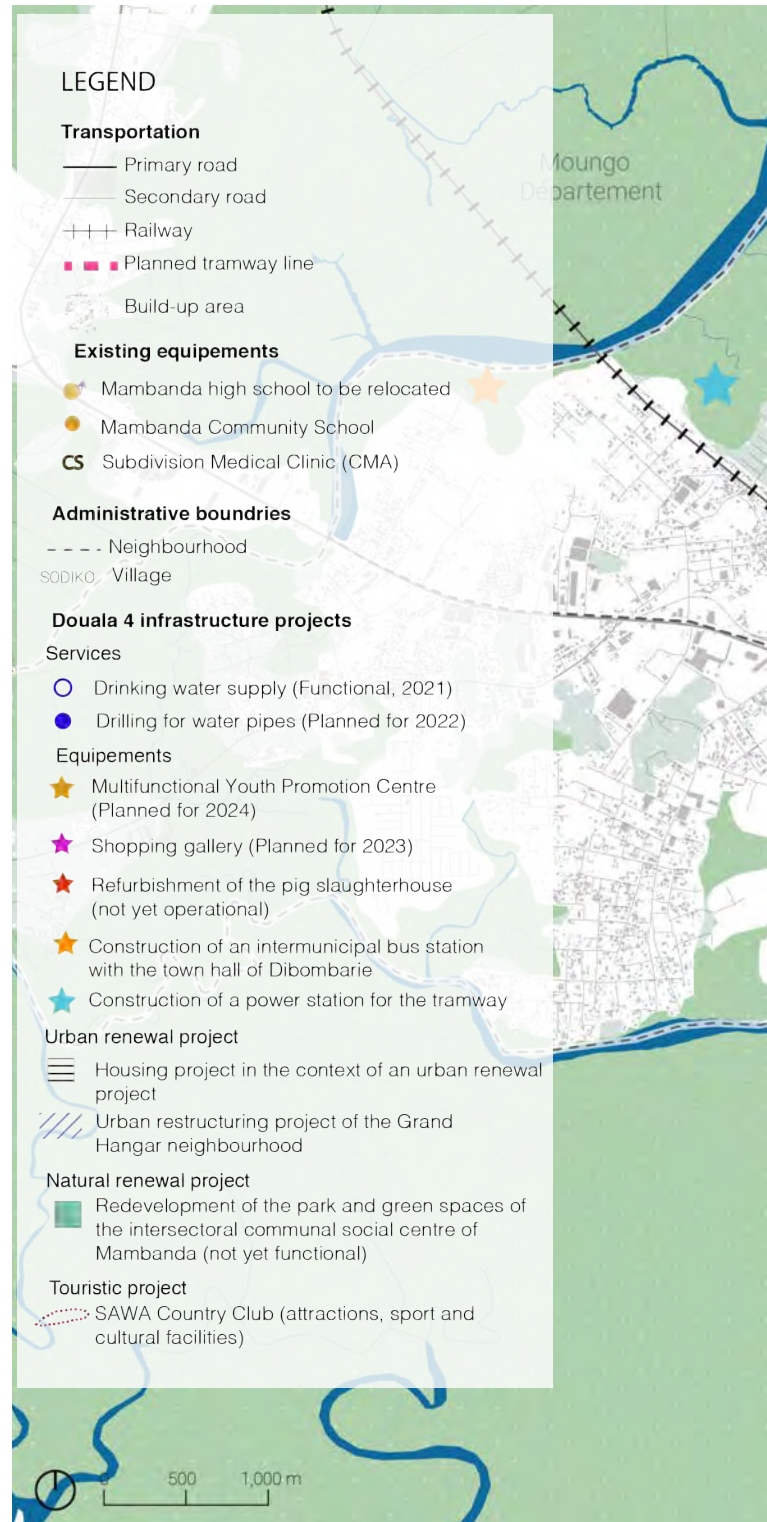
All these projects are anchored in the priority intervention sectors identified during the participatory urban profiling and visioning validation workshop, namely:

Strengthening transport infrastructure and developing intermodality

- BRT (Bus Rapid Transit) project in the city of Douala;
- Kribi-Douala, Loum-Yabassi-Edea railroad project ;
- Modern bus station of Douala 4;
- Road asphaltting project.

Improve access to basic and social services

- Road asphaltting project in the neighbourhood of the council;
- Project to extend the water network in the neighbourhoods of Douala 4;
- Project for the construction of a Communal Medical Centre subject to land availability;



- Project to build a sports complex in Bonamatoumbe and Bonassama.

Strengthening and diversifying economic centres

- Project to modernize the Bodjongo and Mambanda markets.

Although all these projects are important, those with a strong impact (catalyst) that can significantly boost development on a metropolitan scale in the city and locally in the Douala 4 subdivision are:

- BRT (Bus Rapid Transit) project in the city of Douala;



Map 6. Metropolitan and local infrastructure projects / Source: UN-Habitat

- The extension of the water and the paved roads;
- Douala 4 modern bus station project;
- Tram project.

The effective implementation of these projects will influence the future development of the city and the impact produced is likely to trigger other investments and infrastructure projects.

Each project on its own will yield specific benefits over time, however, the combined impact will be significant,

as they are mutually beneficial. Investment in these infrastructure projects will have a powerful multiplier effect as their implementation is likely to spur additional investment and infrastructure projects.

While there are other infrastructure projects planned for in and around the region, these catalytic of projects have been identified as being particularly impactful to the future growth of the area.

Two typologies of catalytic projects have been identified that are planned and unplanned projects, if there were

implemented, would transform Douala 4 into a strategic location. These projects will increase the economic development potential of Douala 4, increase the demand to live and work in this location and allow for greater investor confidence. According to the Council of Douala 4 two main programmes will have a transformative impact on Douala 4: mobility and housing projects.

Catalytic Project N°1: The improvement of the access to transportation out of the city and urban mobility

a) Improving Urban Mobility in the City of Douala through the Bus Rapid Transit (BRT) System

Douala's growing population increases pressure on the available transport infrastructure; traffic jams are intensifying. According to the World Bank, the bus network accounts for less than 1 per cent of trips. The Bus Rapid Transit (BRT) project aims to facilitate travel for the population with a strong potential for job creation. The projected layout of the BRT line does not consider Douala 4; however, the subdivision will benefit from the indirect impacts of the implementation of this important infrastructure by generating new economic dynamics and migration to the urban subdivision, including Douala 4. World Bank researchers demonstrated in 2020 that once the BRT is in place²:

- Access to employment will increase by 138 per cent among the poor.
- The number of city residents accessing a public hospital within 45 minutes will increase from 43 per cent to 58 per cent.
- The share of women who reach commercial areas within 45 minutes will increase from 71 per cent to 80 per cent.

The population of Douala 4 will benefit from the jobs created and the ease of movement in the city.

b) Strengthen transport infrastructure through the Douala 4 modern bus station project.

The Douala 4 modern bus station project at Bekoko aims to enhance the attractiveness of the subdivision, by providing it with an appropriate working environment for transporters and users, to increase the council's tax revenues. It is envisaged as an interface between the Douala 4 council and the West, North-West and South-West Regions. Commercial, leisure and cultural activities

are likely to be integrated. This project will also play an important role in social cohesion as a place for meetings and exchanges. It should be noted that this project is in line with the operationalization of the National Development Strategy 2020-2030 (SND 30), which prescribes, among other things, the construction of transport infrastructure for the sustainable development of the subdivisions and Regions.

c) Providing a new offer of mass transport public within the city : Tramway project

The tramway project was recently adopted on September 2022 and confirmed by the Mayor of Douala. The 18 km route provides for a line serving the Agip crossroads in Douala 4, at the level of the industrial area, to the subdivision of Douala 1 (Bali neighbourhood). Work is planned to start in 2023, using the existing railway, which is currently used to transport goods between the port and the Douala 4 industrial area. It will connect one of the subdivisions in the centre of Bali, where many companies have recently settled down, to Douala 4. This service will relieve congestion on the current roads, strengthen the public transport offer, and improve transport conditions for commuters. The tram project will trigger new economic dynamics and a requalification of the surroundings of the tram station planned near the Douala 4 industrial zone.

Catalytic Project N°2: The urban renewal project at Grand Hangar

The Grand Hangar urban renewal project is an initiative aiming to create social and functional mixity. It consists of diversifying and providing affordable housing with access to amenities. The project includes social facilities, green spaces, the upgrading of roads and commercial spots. It will respond to a part of the current urgent housing needs in informal settlements and quick to implement, but this project will be insufficient in the future regarding demographical growth. The urban renewal of informal settlements of the subdivision will contribute to its attractiveness. New economic activities will also be able to be located. This nature of projects could represent a tool to improve the living conditions and to support the social mix in Douala 4.

Outcome 1: Unstructured Development of Douala 4

This outcome takes into consideration as an assumption that minimal projects will be implemented. The city of Douala 4 continues to face several shortcomings that prevent it from being competitive at the sub-regional and international levels on the one hand, and from improving the living conditions of the population on the other hand. Therefore, there will be few new employment opportunities and the living conditions of many residents may be precarious.

**MINIMAL PROJECTS
ARE IMPLEMENTED****Outcome 2: Inequal development of Douala 4**

If partial projects are implemented in Douala 4 and Mambanda, the priority sector will be the transportation projects according to the assessment of the current subdivision budget, providing potential economic growth and improving the accessibility to other polarities in Douala. It will open up Douala 4 and it will support the implementation of other projects at a smaller scale as a transformative impact. The lack of investments in urban services and housing could increase the pressure on basic services, the proliferation of private facilities and equipment and the increase of informal settlement, especially with the expected growth of the population.

**PARTIAL PROJECTS
IMPLEMENTED****Outcome 3: Organized and balanced development of Douala 4**

The optimal scenario will be the implementation of all the projects. The implementation of transportation projects and access to energy and housing will catalyse knock-on benefits such as local socio-economic development, providing diverse livelihoods, housing, and the stabilisation of the cost of living.

**ALL PROJECTS
IDENTIFIED AT THE
METROPOLITAN AND
LOCAL LEVELS ARE
IMPLEMENTED**

VARIABLE: LOCAL ECONOMIC DEVELOPMENT

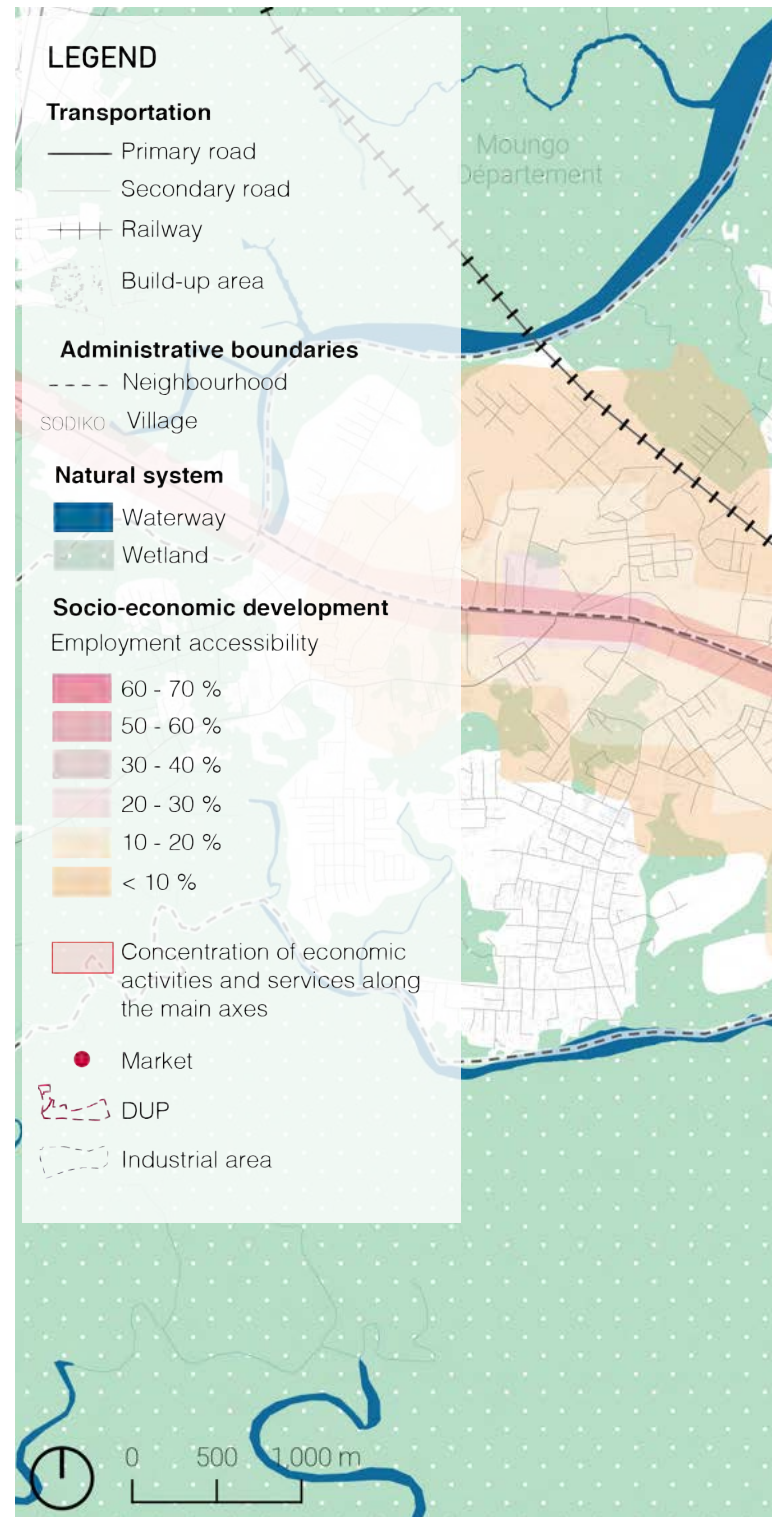
The local economic development of the subdivision Douala 4 is a key variable to alleviate poverty and foster social inclusivity. This is a crucial aspect of the optimal scenario for the coming years.

Recently, Cameroon experiences high inflation and a rise in the rate of public debt distress (28.8 per cent of GDP in 2015 to 46 per cent in 2021). Projections estimate economic growth to reach 4.3 per cent in 2023 and inflation to remain below 3 per cent due to the continuation of the price control system. Nevertheless, without the financial support of the State and an increase in the GDP, Cameroon will face significant economic distress in the following years owing to the global situation. This trend will directly impact households and local economic activities in Douala, the economic capital of Cameroon. The main economic centres in Douala are located in the city centre (the Central Business District and the Port of Douala mainly host tertiary and banking activities and the headquarters of large companies) and in the Western part of the city (industrial zones, railway station), where formal jobs are concentrated in these areas. Generally, shops and unlicensed street vendors settle in every neighbourhood along the main roads while markets constitute major commercial centres. They embody social nexus among local populations and generate economic growth at the neighbourhood and subdivision scales.

Douala 4 constitutes an economic centre for primary and secondary activities concentrated in the port area of Bonabéri (Douala 4). However, a part of the population living in Douala 4 works in the informal sectors in the city centre, while inhabitants living in the Northern part of the subdivision commutes every day, transforming the subdivision into a dormitory town.

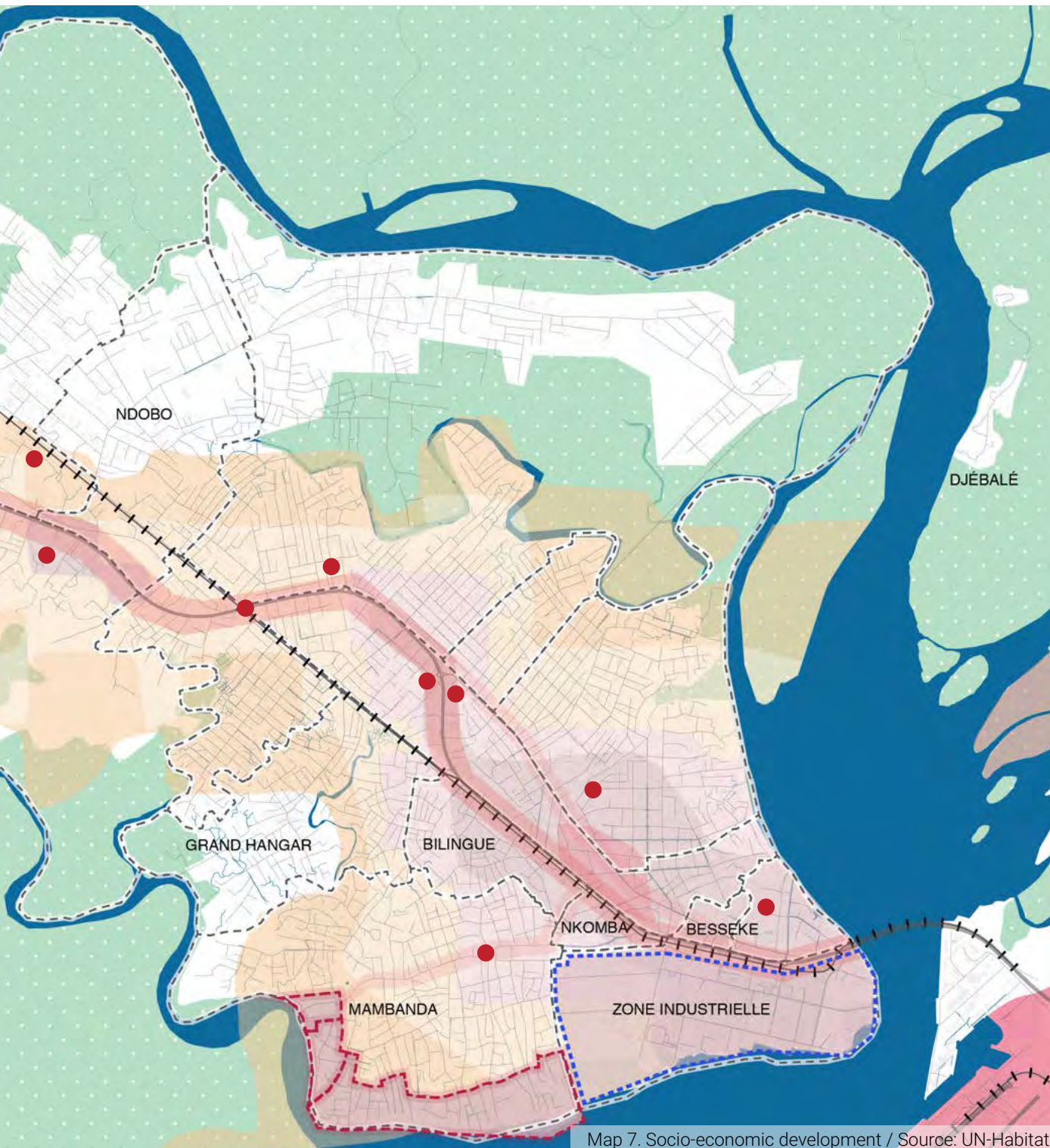
The main following points need to be considered to assess the socio-economic variable in the scenarios:

- **Major infrastructure projects** (e.g., tram railway, port) will impact the position of the subdivision of Douala 4 in the metropolisation process of the city.
- **State of the global and national economy** (inflation, debt): following the crisis of the COVID-19 pandemic and the international crisis context, the cost of living has significantly increased, with high petrol and basic products prices, impacting the poorest. Even if this is



a global trend, this variable needs to be considered in the scenarios as it strongly impacts households' living conditions and livelihoods.

- **Accessibility to economic centres** (distance/time, transportation network and offer): In Douala 4, people who live in informal settlements on the outskirts of the subdivision have limited accessibility to the main economic centres due to the condition of the road networks. This spatial isolation is correlated with limited economic opportunities. At the scale of the



Map 7. Socio-economic development / Source: UN-Habitat

city, Douala 4 remains isolated by the Wouri River as only one main road connects the subdivision with the city. In this respect, inhabitants of Douala 4 experience traffic congestion every day, must move a greater distance to access the main economic centres and need to spend more money on transportation. Their limited economic resources, the poor transport network and the limited offer of public transport increase the difficulties for them to access employment opportunities in these areas of the city.

- **The industrial zone of Douala 4** (efficiency and impact of investments within the subdivision) is a catalyst for investment but currently functions as a socio-economic and spatial enclave with little benefit to the residents of the subdivision. The existing local economic centralities in Douala 4 fail to meet the demand for employment. In general, the economic potential of Douala 4 could be further exploited, to benefit the local and vulnerable populations.

- **Gender inclusivity and equality** (prostitution, access to education, and job employment): Female IDPs often come alone or accompanied by their children to Douala 4 and struggle to support their livelihood. Many women and young adolescents turn to prostitution to support their livelihood and thus, have very limited access to education. This creates short-term and long-term challenges as de-schooling will reduce their employment opportunities in the future and maintain poor and unqualified jobs.
- **Social inclusivity/Job opportunities for all** (host communities and IDPs, female and male): The arrival of IDPs creates a new workforce but also new businesses (new shops recently multiplied in Douala 4). Therefore, offering equal socio-economic opportunities for both displaced and host communities is important to ensure social cohesion and peace between them.
- **Migrations (rural-urban continuum)**: Population migrations (circular, seasonal) participate in the African urban growth with cities, such as Douala, becoming great challenges for local administrations with few capacities. In this respect, many households have activities in both rural and urban economics (Kessiders, 2006). One should consider the rural-urban continuum within the economic development of Douala to address urban poverty.
- **Autonomous Port of Douala (PAD)** (creation of employment, displacement, distances): The extension of the PAD in the neighbourhood of Mambanda is a great opportunity to foster the creation of job opportunities for the local populations. This would significantly contribute to the economic growth of the neighbourhood and the subdivision of Douala 4 under certain conditions. The successful integration of the PAD within the urban development of Douala 4 (Outcome 3) depends on the following parameters:
 - *The employment of the local workforce.*
 - *The attraction of new businesses.*
 - *The development of shops nearby to address the daily needs of the workers (restaurants, shops, etc.).*
 - *Improvement of the road networks.*
 - *Access to the riverbanks for residents*

On the contrary, the weak integration of the PAD within the urban development of Douala 4 will reinforce the socio-economic enclave (Outcome 1 & 2). In fact, the *Déclaration Utilité Publique* (legal tool) will allow the PAD to :

- *Confiscate access to the banks of the Wouri river from the inhabitants of Mambanda – a source of income for fishermen.*

- *Displace many residents in Douala 4 and separate them from their community creating distress. This can lead to a loss of economic activity or an increase in the distances to be travelled as they will be relocated to a different neighbourhood of Douala 4.*

Outcome 1: Lack of the urban development resulting in limited access to employment opportunities for all

The absence of infrastructure modernisation and investments will keep Douala 4 in a precarious situation. The significant population growth (natural growth and migrations) will put pressure on the existing underdeveloped infrastructure, facilities, and services.

The difficulty to access economic centres due to congestion, poor road network and public transport provision will increase the enclave effect. This will be accentuated by the weak integration of the PAD, which

confiscates job opportunities and access to the riverbanks to the local populations.

Deterioration of the urban living conditions will create an insecure urban environment with the marginalisation of vulnerable populations, limiting job opportunities and attracting new businesses.

ECONOMIC DECLINE

Outcome 2: : Limited and uncoordinated urban development resulting in better but poorly diversified job opportunities for all

The slow upgrading of urban infrastructure (transportation, social facilities), basic facilities (water, electricity, waste collection) and the few urban renewal projects will constrain the urban development of Douala 4. This will limit the attraction and establishment of new businesses. Instead, shops and street vendors along the main road and in the industrial zone will mushroom.

Moreover, education programmes will be implemented but only accessible for a small part of the population. Therefore, the diversification of employments will remain weak with mainly low-skilled work

opportunities.

The lack of coordination among actors and the insufficient legislative framework will encourage companies to set up randomly, perpetuating urban divides. The few interventions to improve safety and pedestrian access to public space will limit economic animations in the streets.

The weak integration of the Port Autonome de Douala (PAD) within the subdivision will further accentuate the enclave effect with the displacement of people and the confiscation of the riverbanks (fishing activities).

**ECONOMIC STABILITY/
SMALL GROWTH**

Outcome 3: Sustainable urban development and diversified economic activities resulting in substantially improved access to job opportunities for all

The subdivision of Douala 4 will experience a balanced development of its urban infrastructure and services. Sustainable basic facilities will become accessible and affordable for all. The development of new transportation infrastructure (upgrading of the road network and public transport provision) will ensure better accessibility to economic centres and reduce urban divides. This will lead to a significant improvement in the urban living conditions of both IDPs and host communities, participating in the economic outreach of Douala 4.

The arrival of new populations will boost the local economy with the opening of new small and medium businesses (SMEs) and the presence of a large workforce (SIDA programme, 2022). IDPs can benefit from trainings and facilitated opportunities (e.g., partnerships, reserved

spot at the market). The equal socio-economic opportunities for both displaced and host communities will ensure social cohesion and harmony.

The extension of the PAD will provide new employments for a large part of the local population, playing the role of an economic booster. Its great integration within the subdivision will attract shops and touristic activities. The Wouri riverbanks will be accessible and enhanced through eco-tourism and the conservation and creation of natural areas.

Safe and animated public spaces will provide better visibility and access to employment for all, especially girls, women, and vulnerable communities. This will contribute to the reduction of prostitution coupled with better access to education for girls and young female adolescents.

**SIGNIFICANT ECONOMIC
GROWTH**

VARIABLE: DEVELOPMENT PROJECTS

Access to social facilities and basic services within the subdivision Douala 4 is a key variable to overcome precariousness and foster social inclusivity. This is a crucial aspect to guarantee decent living standards and create a good environment for economic development.

Access to social facilities

Generally, the subdivision of Douala 4 faces a shortage of social services such as school and health facilities — for instance, students must walk more than 30 minutes to access a school facility. Hence, private clinics and private schools mushroomed in the subdivision to address the lack of social services. However, residents must pay higher fees to access them: enrolment fees for public schools are between 15.000 and 38.000 FCFA (2.41 – 66.90 USD), while private schools' fees range between 50.000 and 1 million FCFA to enrol a child in elementary school. Due to these high fees, many families do not enrol their children in school. This is even more difficult for IDPs where schools in the Anglophone Regions have been closed for many months due to violent conflicts or the ones who fled or have lost documents, necessary to enrol in a school. Girls and young adolescents IDPs are also the most vulnerable. To support their households, they often do not go to school and are forced into prostitution to contribute to their livelihood.

To face this challenges, it is necessary to build new equipment to answer to the current and futur growth.

- **The densification of current schools and the construction of new ones**
- **The modulation of the price regarding the household's income**

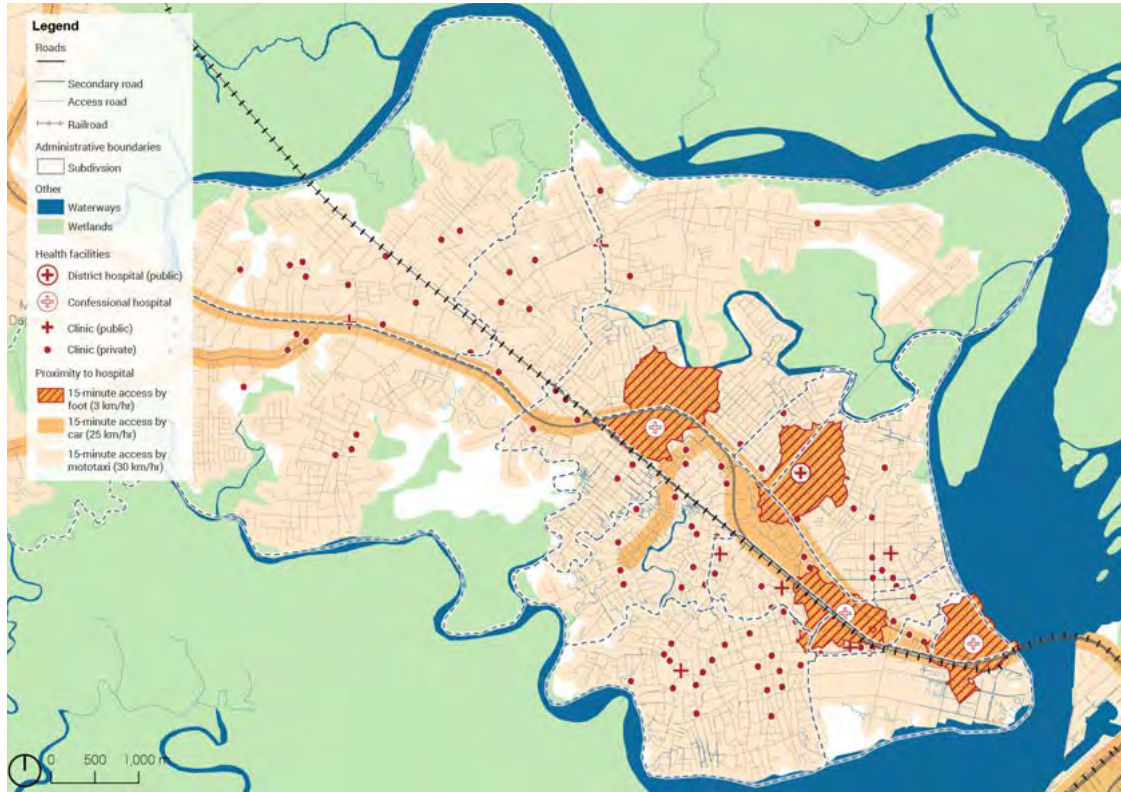
Access to basic services

Access to basic services remains limited in Douala 4 and is only concentrated along the main roads. Therefore, this accentuates the marginalisation of vulnerable communities living in informal settlements. In this respect, the improvement of basic services, and social facilities, and ensuring access for all to education constitutes a major issue for the socio-economic development of Douala 4, social inclusivity, gender equality and poverty reduction.

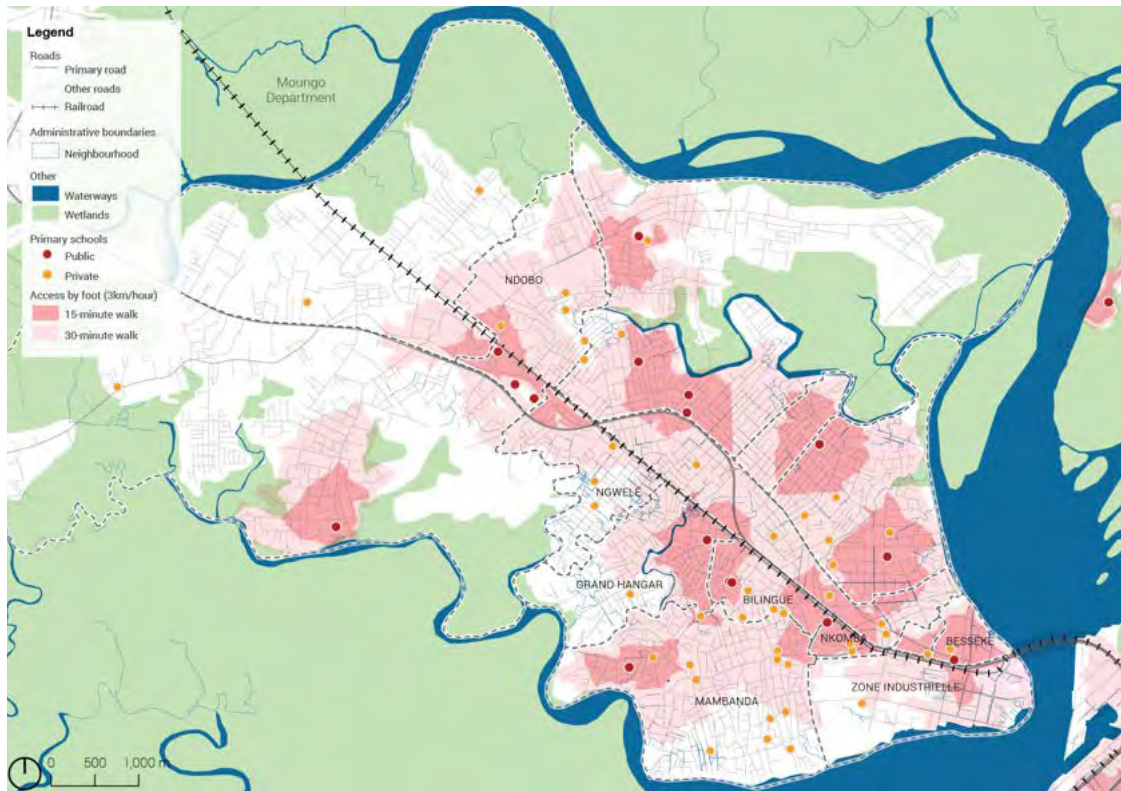
- **Creating a network of paved roads:** The paving of roads is essential for the connection of residents to economic centres that provide jobs and urban services. Road rehabilitation projects in the neighbourhoods of Douala 4 are planned for 2023, targeting informal settlements such as Mambanda. However, more remote neighbourhoods are excluded from these projects.

- **The improvement of access to basic services:** Basic infrastructure (drinking water and electricity supply, water purification, waste management, etc.) are elements that strongly influence the prosperity of cities and the quality of life of their inhabitants. The urgent need is also for access to basic services. In the planned projects, the extension of the water network is the only operation planned due to a lack of funding. However, the urban challenges identified in terms of waste treatment, sewage system and maintenance of drains, and electricity are major in Douala 4. Given the population growth, basic infrastructure will suffer from this new demographic pressure. Financing the extension of basic infrastructure is a lever for structuring the subdivision and the Mambanda neighbourhood.

- **The extension drinking water network in Douala 4 and Mambanda:** The extension of the water network in Douala 4 will enable households living in informal settlements to be supplied. This extension is also a step forward in the recognition of these neighbourhoods such as Mambanda. The installation of a basic infrastructure generally creates development and permanent housing around the network.



Map 8. Access to health facilities in Douala 4 / Source: UN-Habitat



Map 9. Access to education facilities in Douala 4 / Source: UN-Habitat

Outcome 1: Limited access to social services and basic services resulting in precariousness and marginalisation of the most vulnerable populations

There will be no investments in education and health facilities. The lack of good transportation services will make access to these services even more difficult, while costs remain high, preventing the most vulnerable from accessing these social services. Basic services will remain inadequate, especially in informal settlements. This will maintain strong inequalities within Douala 4 and maintain local populations in precarious and insecure conditions.

The poor urban development of the subdivision creates limited access to these services. This participates in the marginalisation of IDPs and vulnerable communities. High school drop-out rates (especially for girls) will disrupt economic growth and keep people in precarious situations. In this respect, the development of social and basic services must be a key element of the urban strategy of Douala 4.

**LIMITED ACCESS TO
SOCIAL SERVICES AND
BASIC SERVICES**

Outcome 2: : Inequal offer of social services and basic services resulting in a better due to a geographically and financially limited accessibility to these services for all

The subdivision will benefit from the building of new schools and health facilities and better access to basic services but without cost regulations.

better quality of basic services in some parts of the subdivision will improve the urban living conditions of local populations.

The creation of new schools will enable better access to education for both girls and boys, hence, reducing the prostitution of adolescent girls and young women. The

**LOW IMPROVEMENT IN
THE OFFER OF SOCIAL
SERVICES AND BASIC
SERVICES**

Outcome 3: Significant improvement of the offer and access of social services and basic services resulting in the improvement of living conditions with good accessibility for all

The subdivision will benefit from significant investments in schools, health facilities and access to basic services. The cost of these services will be regulated with the aim guarantee access for all. IDPs and vulnerable populations will receive support to access shelters and physiological and administrative support. Recreational areas in each neighbourhood will be developed.

reducing the prostitution of adolescent girls and young women. Better access to education and the implantation of recreational areas will accelerate the inclusion of IDPs communities. The coverage of basic services will be uniform throughout the subdivision and will be improved in priority in the informal settlements. This good and secure environment will contribute to the economic development of Douala 4.

The multiplication of social facilities in Douala 4 will provide better proximity to social facilities in each neighbourhood. This will increase the accessibility to education for both girls and boys, hence,

**SIGNIFICANT
IMPROVEMENT OF
THE OFFER OF SOCIAL
SERVICES AND BASIC
SERVICES**

VARIABLE: ENVIRONMENT AND CLIMATE CHANGE

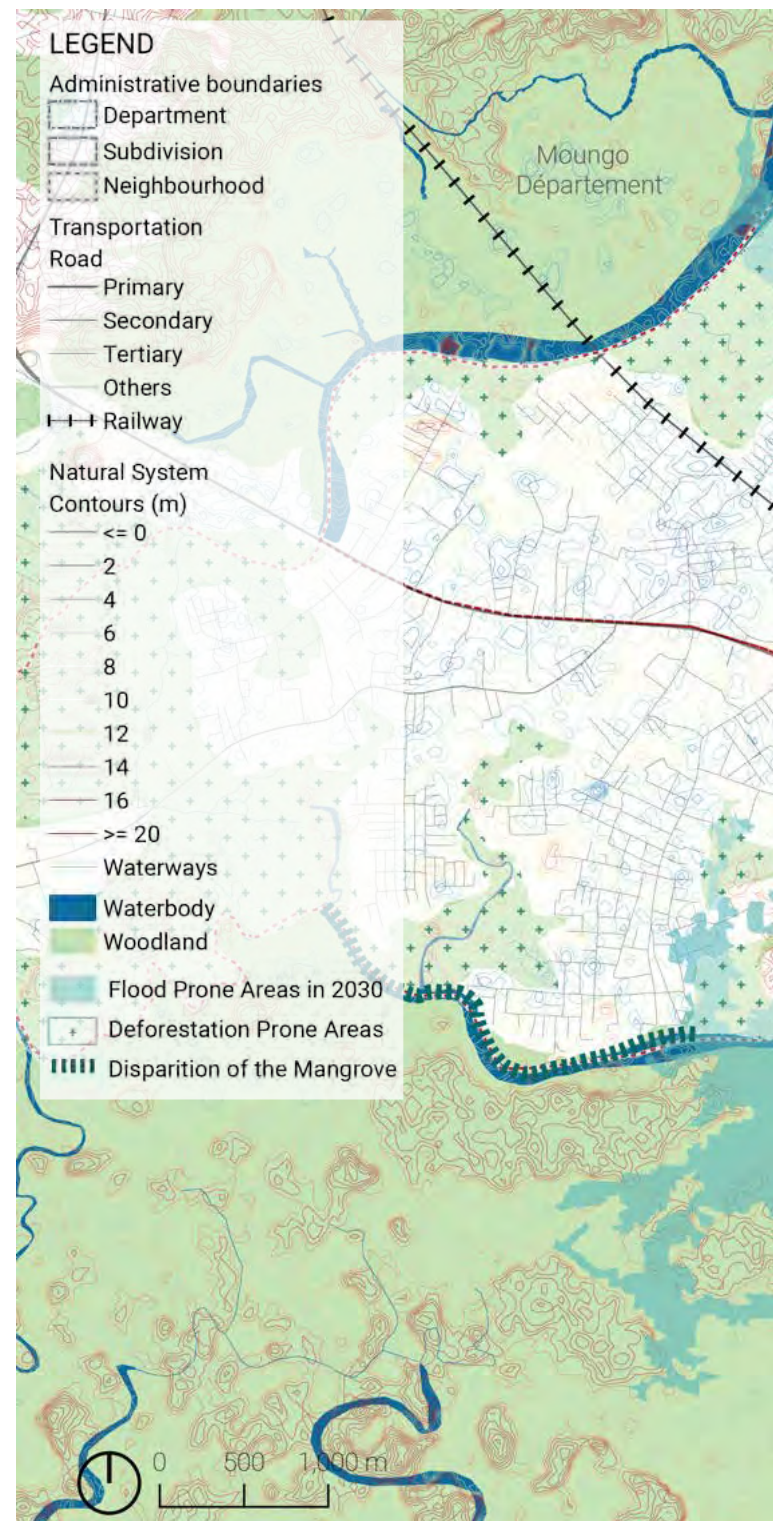
The subdivision of Douala 4 is an estuary zone located practically at sea level. The relief of the subdivision has a low altitude ranging from zero at the level of the mangrove to one meter at Mambanda, and to 2-3 meters at the tip of Bonendalé. The major impact of this relief on the territory is the presence of a significant number of wetlands.

The rise in sea level linked to the destruction of the mangrove, deforestation, and climate change, as well as flooding, constitute the main climatic risk in the neighbourhoods of the Douala 4 subdivision. The entire territory is a zone highly exposed to flooding (80.2 per cent of the built-up areas of Douala 4 present a very high risk of flooding). These floods cause significant material damage, amplified by the inadequacy of an efficient flood control system (limited drainage network, lack of maintenance of existing infrastructure, blockage due to solid waste, etc.). According to the "Land projected to be below annual flood level in 2030" map throughout Climate Central/ Kopp association, Mambanda and Grand Hangar, and other neighbourhoods are regarded as vulnerable.

The vulnerable populations living in Douala 4, especially in Mambanda settle in land non-suitable for construction (lowlands, mangroves, etc.), and find themselves highly exposed to climatic hazards (flooding). Climate change could therefore have serious repercussions on urban development, despite the measures taken by the municipality of Douala 4. These repercussions are social, economic, and environmental.

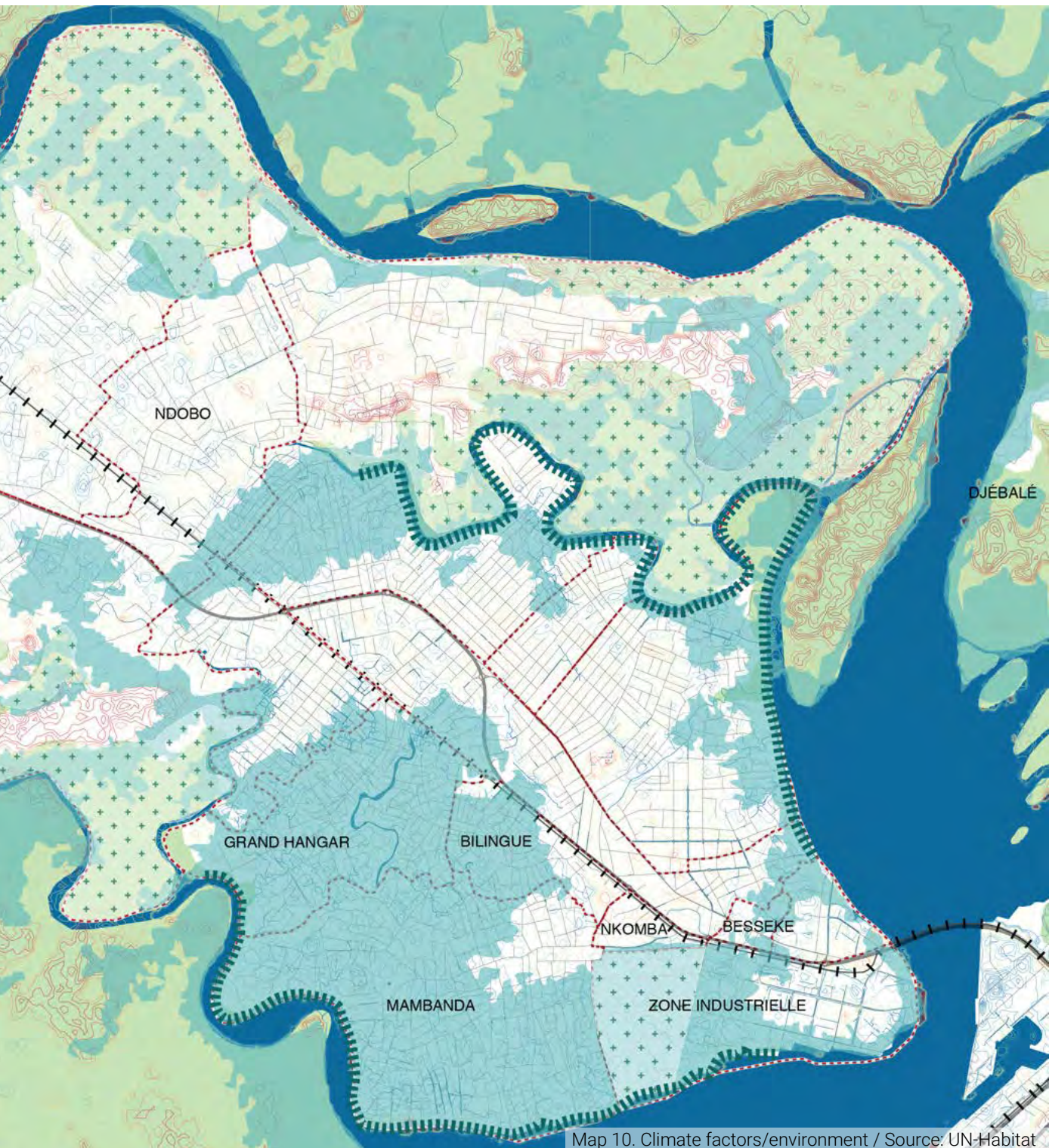
- **Social repercussions:** the flooding of certain neighbourhoods associated with the significant damage to housing and public infrastructures has led to a movement of people from these areas to other areas. The impacts may result in people seeking higher ground or alternative safe lands. There has also been an increase in water-borne diseases linked to the pollution of the water supply sources.

- **Economic repercussions:** populations dependent on agriculture and fish farming are suffering the effects of unexpected rainfall patterns. Heavy rains out of season lead to a decrease in agricultural production and subject the population to food insecurity. Similarly, heavy rainfall severely limits road connections and the mobility of people to places of service and commerce. Economic activity is slowing down. Water-related impacts may also limit the



accessibility and road connection to and within Douala 4 and Mambanda. Moreover, new infrastructure projects may be at high risk of sea levels rising by 2030.

- **Environmental impacts:** The influx of displaced people has a significant impact on available natural resources. The natural vegetation cover (mangrove, forest) is destroyed in favour of housing and infrastructure in the absence of systematic control of the installation of new constructions. In addition, the decrease in agricultural production leads to a decline in fish farming activities and



Map 10. Climate factors/environment / Source: UN-Habitat

pressure on marine biodiversity. Eventually, the absence of a waste collection and treatment system leads to heavy soil pollution.

The government of Cameroon has committed to the fight against climate change with several policy commitments. The National Climate Change Adaptation Plan (PNACC, 2015) constitutes the basic document of its adaptation policy. In addition to strategies at the national level, Douala city and Douala 4 are carrying out operational actions daily to curb the flooding

phenomenon. We note among others:

- **The establishment of a local observatory of climate change**, around Makèpè Missokè, through the Douala sustainable city program.
- **The sensitisation of the constructions in height**, rather than in width or spread out.
- **The regular cleaning of drains and the clearing of dwellings.**
- **The construction of drainage infrastructures** and the maintenance and cleaning of existing infrastructures.

- **The continuous sensitization of the population** on the health dangers linked to bad water drainage, etc.
- **Raising awareness campaigns** through workshops, and meetings with the inhabitants of Douala 4 about the benefits of the mangrove and the impact of deforestation.

These actions are punctual measures and are insufficient for the medium and long-term protection of the population. The combination of both adaptation and mitigation interventions is the most effective way to combat the short and medium-term impacts of climate change, and contribute to long-term climate change reduction goals.

Outcome 1: No climate change mitigation or adaptation actions are taken, resulting in increased vulnerability of populations.

If no measures are taken, the impacts of climate change will continue to worsen for the foreseeable future. Flood events will increase in severity and frequency, rising levels of damage to housing and infrastructure and causing greater numbers of injuries and deaths. Lands that have been identified

as being particularly flood-prone, such as Mambanda may eventually have to be abandoned due to the impact of constant severe flooding. Anthropogenic activities (obstruction of drains by waste, etc.) and uncontrolled expansion strongly contribute to accentuating these effects.

NO ADAPTATION OR MITIGATION MEASURES TAKEN

Outcome 2: Partial Climate change adaptation and mitigation measures are taken.

While these adaptation and mitigation actions can protect the local communities from some of the impacts of climate change, i.e., move people from flood-prone areas and improve flood protection in vulnerable areas such as building dikes, building parks, they do not fully result in an overall improved outcome. These

actions will have a low impact on the scale of Douala 4 and on the reduction of overall greenhouse gas emissions, which is necessary to slow climate change on a global level. As such, the situation is likely to continue to worsen, which impacts food security and livelihoods.

PARTIAL ADAPTATION MITIGATION MEASURES TAKEN

Outcome 3: Climate change adaptation and mitigation measures are taken to reduce vulnerability to impacts and to strengthen the adaptive capacity and resilience of the population.

Global dynamic contributing to strengthening climate resilience and encouraging the population to adopt adaptation and mitigation practices that will participate in reducing the impact of human communities on the effects of climate change in Douala 4.

In addition to stabilizing the current situation, the below activities will contribute to the potential reduction of the detrimental impact of climate change on the communities who live in Douala 4.

Here is an example of a list of non-exhaustive adaptation and mitigation measures that could be implemented:

- Institutional (establishment of specific regulations, development of climate change adaptation action plans, etc.).
- Physical (construction of protective dykes, renovation or construction of buildings better adapted to extreme weather conditions, evacuation, etc.).
- Communicational (awareness

message, etc.).

- Examples of mitigation measures to reduce the impact of human communities on the environment:
- Recovery of organic waste through composting (organic fertilizer).
- Promotion of alternative energies (photovoltaic, biogas).
- Promotion of the circular economy through the recycling and transformation of plastic waste.
- Control of land use.
- New forms of habitat (habitat on stilts, refuge zone in residences).
- Neighbourhood organization and digital alert system, etc.

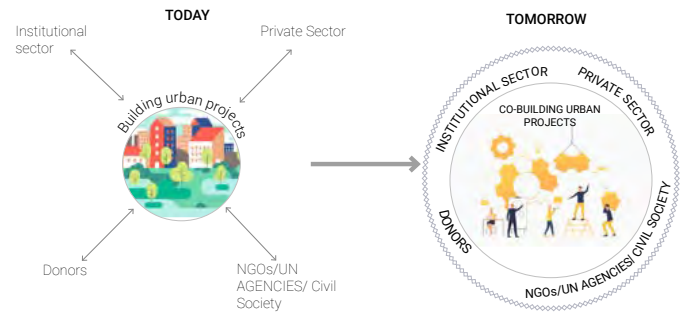
This systemic approach will both result in a reduction in environmental degradation and provide a more reliable and sustainable environment, enabling communities to spend their time on more productive and recreational activities. Overall, this outcome will help to support an increasingly resilient place for communities to live, with reduced insecurity around natural resources and natural hazards.

ADAPTATION AND MITIGATION MEASURES TAKEN

VARIABLE: URBAN GOVERNANCE

Coordination of actors

Urban governance in Douala involves a multitude of stakeholders whose coordination is not assured. Institutional actors, NGOs and the private sector are the main actors in Douala 4. Dialogue between these actors is currently weak, impacting the visibility and dissemination of information. The actions carried out by these actors often take place in isolation without any consultation with the other actors in the area. As a result, Douala reveals a patchwork of uses with no links and no coherence. Douala City Council has, however, set up an exchange platform for these actors, but it seems to be ineffective.



In Douala 4, the industrial zone is functioning as an enclave. In addition, the extension of the PAD will reinforce the urban division with the rest of the commune. To ensure sustainable development, coordination of entities is essential to follow a common and shared orientation. Partnerships between these actors need to be rethought and the methodology of intervention needs to be guided.

Outcome 1: A lack of coordination and coherence between projects due to the absence of dialogue between actors

In this outcome, the hypothesis studied is the absence of dialogue between institutional actors before the implementation of their interventions in the territory. Douala 4 could develop without a common vision and territorial cohesion. There is a risk that urban divisions will multiply at the cost of the inhabitants, who will be isolated. These

urban divisions also contribute to the impoverishment of Douala 4. Access to infrastructure and employment will therefore be limited. The lack of coordination between public actors can also lead to a slowdown in the implementation of projects intended to improve the living conditions of the population.

UNPLANNED AND UNSTRUCTURED PROJECTS IN A GLOBAL VISION

Outcome 2: Transparency and the visibility about the ongoing projects

This outcome analyses the hypothesis of improved communication between actors using the platform set up by the city of Douala. Information is disseminated, reducing opacity and unproductive exchanges. Each actor can adapt and take into account the projects registered on this platform. Urban

development is no longer a piecemeal process. However, this coordination, which is limited to the minimum, does not solve the problems of coherence. The construction of a common vision will not be possible for Douala 4 due to the lack of dialogue and partnerships between the stakeholders.

LACK OF LINKS BETWEEN THE PROJECTS

Outcome 3: A coherent articulation of projects resulting from the beginnings of assiduous coordination of actors

In this hypothesis, regular coordination of the actors thanks to different tools such as GIS mapping, and ad hoc organisation meetings would make it possible to anticipate and evaluate the needs of each actor before its intervention according to a common orientation of the territory. The objective

would be to collectively build a vision of the territory where each one can develop its potential in coordination with the others. Moreover, through this process, synergies between stakeholders could be thought of, contributing to the construction of new partnerships in the territory.

A COHERENT ARTICULATION OF PROJECTS

Civil Society Participation

The role of civil society in the creation and implementation of projects is necessary to better identify the needs of the population. The co-construction approach thus allows better adhesion of the population to the projects and a long life span of the latter. Indeed, the involvement of the inhabitants is currently limited to the urban diagnosis phase during field surveys by Cameroonian legislation. Other forms of involvement can be encouraged by the local authorities. Douala 4 carries out sporadic "coup poing" operations in collaboration with NGOs. It is deployed after the implementation of projects to involve civil society, such as the cleaning of drains. It seems

essential to ensure the life span of the infrastructures/ equipment and the support of the users to involve the inhabitants in all phases of the project (studies, implementation, maintenance).

<p>Outcome 1: Limited participation of civil society</p>	<p>LIMITED PARTICIPATION OF CIVIL SOCIETY</p>
<p>In this outcome, the hypothesis of having citizen participation would be limited to the field surveys. In the process of developing the project, the needs of civil society may be identified but they will be excluded from the choice and design of the project. There is a risk that the project will not gain support after its implementation and not match the real needs.</p>	
<p>Outcome 2: Ongoing involvement of civil society</p>	<p>ONGOING INVOLVEMENT OF CIVIL SOCIETY</p>
<p>This hypothesis highlights the possibility of integrating stakeholder participation in the different phases of the project but in a more spontaneous way. The legal obligation to involve the population during the diagnosis/study phase will be maintained, but during the following phases, participation could be more spontaneous depending on the political will. This random participation will serve to validate the project. The co-construction approach seems to be limited to a vision of consultation and information on the evolution of the project.</p>	
<p>Outcome 3: Participations in all phases of the project</p>	<p>PARTICIPATIONS IN ALL PHASES OF THE PROJECT</p>
<p>In this outcome, civil society participates in all aspects of the project construction process. The effects of this involvement lead to a better understanding of the citizens' needs and the construction of a common vision of the territory to facilitate the adhesion and the success of the project. The role of the inhabitant can be defined from the design of the project to its implementation and maintenance. The participation of civil society has a consultative role, in the co-design and validation of projects. Through different tools, citizen participation can be implemented (polls, surveys, listening platforms during the project, and workshops).</p>	

BUSINESS AS USUAL SCENARIO (BAU)

CONSTANT PARAMETER	OUTCOMES	Urban Footprint		Catalytic Infrastructure Projects
		2a. Additional Land	2b. Typology of Pattern	
STRONG GROWTH > +3 per cent/ year	Outcome #1	LARGE GROWTH - HIGH DENSITY 15.000 p/km ² (17 km ² required)	DENSIFICATION AND INFILL This option would involve the existing settlements, requiring additional land for growth: use vacant land suitable for development and consider densifying denser neighbourhoods and promote mixed land use. This has the benefit of being able to utilise existing infrastructure without pressuring already overcrowded neighbourhoods.	UNSTRUCTURED DEVELOPMENT OF DOUALA 4 due to the absence of implementation of the projects.
	Outcome #2	LARGE GROWTH - AVERAGE MEDIUM DENSITY 11.072 p/km ² (23 km ² required)	INFILL This option is to increase the density of existing developed areas within Douala 4 and use vacant land within the urban footprint but the expansion of informal settlement will continue without control.	INEQUAL DEVELOPMENT OF DOUALA 4 due to a partial implementation of the projects.
	Outcome #3	LARGE GROWTH - LOW DENSITY 5.700 p/km ² (51 km ² required)	UNCONTROLLED EXTENSION Despite the current urban planning documents limiting the urban sprawl, this option would involve the expansion of the existing settlements, requiring additional land for growth.	ORGANISED AND BALANCED DEVELOPMENT OF DOUALA 4 EXTENSIVE IMPLEMENTATION at the metropolitan and local level.

PROBABILITY	HIGHLY UNLIKELY	UN
IMPACT	SIGNIFICANT DETERIORATION	SLIGHT DE

If population growth remains at 3.0 per cent amongst host and IDPs communities without any recommended actions taken to address planning and development measures, Douala 4 will suffer and face many challenges.

Highly Likely Impact

According to the current trends in Douala 4 and the urban profile, by 2030, the built footprint will continue to expand in

an unstructured manner on the marshy, green and rural areas (West part) of Douala 4 and to keep on densifying the six neighbourhoods. Based on the current density of the population, which is at 11.072 p/km² and the current growth of the population, the pattern of the sprawl will significantly increase to 23 km². Due to the lack of regulation and control of land, informal settlements are likely to proliferate at the cost of the natural environment. Deforestation and soil and water pollution will continue,

VARIABLES			
Local Economic Development	Development Projects	Environment & Climate Change	Governance
<p>LACK OF IMPLEMENTATION OF ECONOMIC PROJECTS resulting in limited access to employment opportunities for all.</p>	<p>THE LACK OF INVESTEMENTS for urban services will lead to over capacity of all facilities and infrastructures and limited the access for the vulnerable communities.</p>	<p>NO SPECIFIC CLIMATE CHANGE MITIGATION AND ADAPTATION ACTIONS are taken leading to increasing vulnerability for local communities.</p>	<p>A LACK OF DIALOGUE in the design and implementation of the projects.</p>
<p>ECONOMIC STABILITY/ SMALL GROWTH resulting in better but poorly diversified job opportunities for all.</p>	<p>THE UNSUFFICIENT INVESTEMENT WILL ALLOW NEW CONSTRUCTIONS OF PLANNED SOCIAL EQUIPMENT It will improve the access to urban services. However, it will be insufficient to answer the growth of the population.</p>	<p>PARTIAL IMPLEMENTATION of mitigation and adaptation strategies.</p>	<p>A PRECARIOUS COORDINATION between the stakeholders of Douala 4, thanks to the shared information but without a commun vision.</p>
<p>SUSTAINABLE URBAN DEVELOPMENT AND DIVERSIFIED ECONOMIC ACTIVITIES The structuration of the economy dynamic will boost access to job opportunities.</p>	<p>A MAJOR INVESTEMENT AND ORGANISED IMPLEMENTATION The significant improvement of the offer of social services and basic services will result in the improvement of living conditions with good accessibility for all. A network of facilities will be created.</p>	<p>FULL IMPLEMENTATION of strategies mitigation and adaptation in high risks areas.</p>	<p>A COHERENT ARTICULATION OF PROJECTS resulting from the beginnings of assiduous coordination of stakeholders and the integration of the civil society at each step of the urban project.</p>
<p>DETERIORATION</p>	<p>SLIGHT IMPROVEMENT</p>	<p>SIGNIFICANT IMPROVEMENT</p>	<p>LIKELY</p>
<p>LIKELY</p>	<p>LIKELY</p>	<p>HIGHLY LIKELY</p>	<p>LIKELY</p>

leaving Douala 4 without its green lung and natural flood barrier. Fish farming and food crop production will decline, threatening the food security of the poorest people in the subdivision. In addition, the already inadequate basic infrastructure will be saturated and will not cover all the new settlements. Social facilities will not be able to meet the new demand, creating new inequalities within IDPs. Women and youth will struggle to survive by having informal jobs.

In addition to failing the urban services to address demographic trends, the deforestation of the mangrove will lead to floods and the intense rainfall resulting from climate change will lead to more frequent flooding. The maintenance and rehabilitation of the planned drains will be insufficient measures to block future flooding. By 2030, Mambanda, Bilingue, Grand Hangar, Sodiko village, industrial zone, and the riverfront of Besseke and Bonaminkano neighbourhoods will be flooded and under the sea level during the rainy





season. The lack of mitigation measures in Douala 4 will conduct to significant material damage and loss of life.

Due to a poorly optimised and organised transport system, congestion will worsen. Accessibility to mass transport will be limited as no measures are planned to improve its visibility and circulation within Douala 4. Measures to regulate freight transport will be poorly implemented, making traffic on the *Nouvelle Route* as difficult as ever. The arrival of the tramway is an opportunity, but there are no plans to consider its insertion. Moreover, economic development challenges will be exacerbated: pockets of poverty and inequality could multiply and increase. Despite the arrival of the tramway and the PAD zone, their urban insertion is not currently thought out and structured on the scale of Douala 4 to boost economic and social opportunities for the inhabitants. Future evictions for these projects are not planned in a coordinated manner. The social divide could therefore strengthen tensions within the communities. The industrial zone and the PAD, two economic poles of Douala 4, will continue to function in an isolated way, without including the surrounding populations.

In the end, the Mambanda neighbourhood will be more isolated and less connected to the other neighbourhoods and the city centre. IDPs will undergo this lack of cooperation and their living conditions will decline. This situation represents the business-as-usual scenario for Douala 4. In this scenario, the subdivision and neighbourhood will not achieve the vision formulated by the local community.

LEGEND

Transportation



-  Primary road
-  Secondary road
-  Railway
-  Build-up area

Administrative boundaries







-  Neighbourhood

SODIKO Village

Natural system




-  Waterway
-  Woodland

Forecast






-  Uncontrolled urban sprawl
-  Direction of the urban sprawl
-  Very high-density neighbourhood
-  Concentration of economic activities and services along the main axes
-  DUP - Economic and spatial enclave
-  Flooding zone (2030)

Douala 4 infrastructure projects



Services

-  Drinking water supply (Functional, 2021)
-  Drilling for water pipes (Planned for 2022)
-  Planned tramway line


Equipements

-  Multifunctional Youth Promotion Centre (Planned for 2024)
-  Shopping gallery (Planned for 2023)
-  Refurbishment of the pig slaughterhouse (not yet operational)
-  Construction of an intermunicipal bus station with the town hall of Dibombarie
-  Construction of a power station for the tramway


Urban renewal project

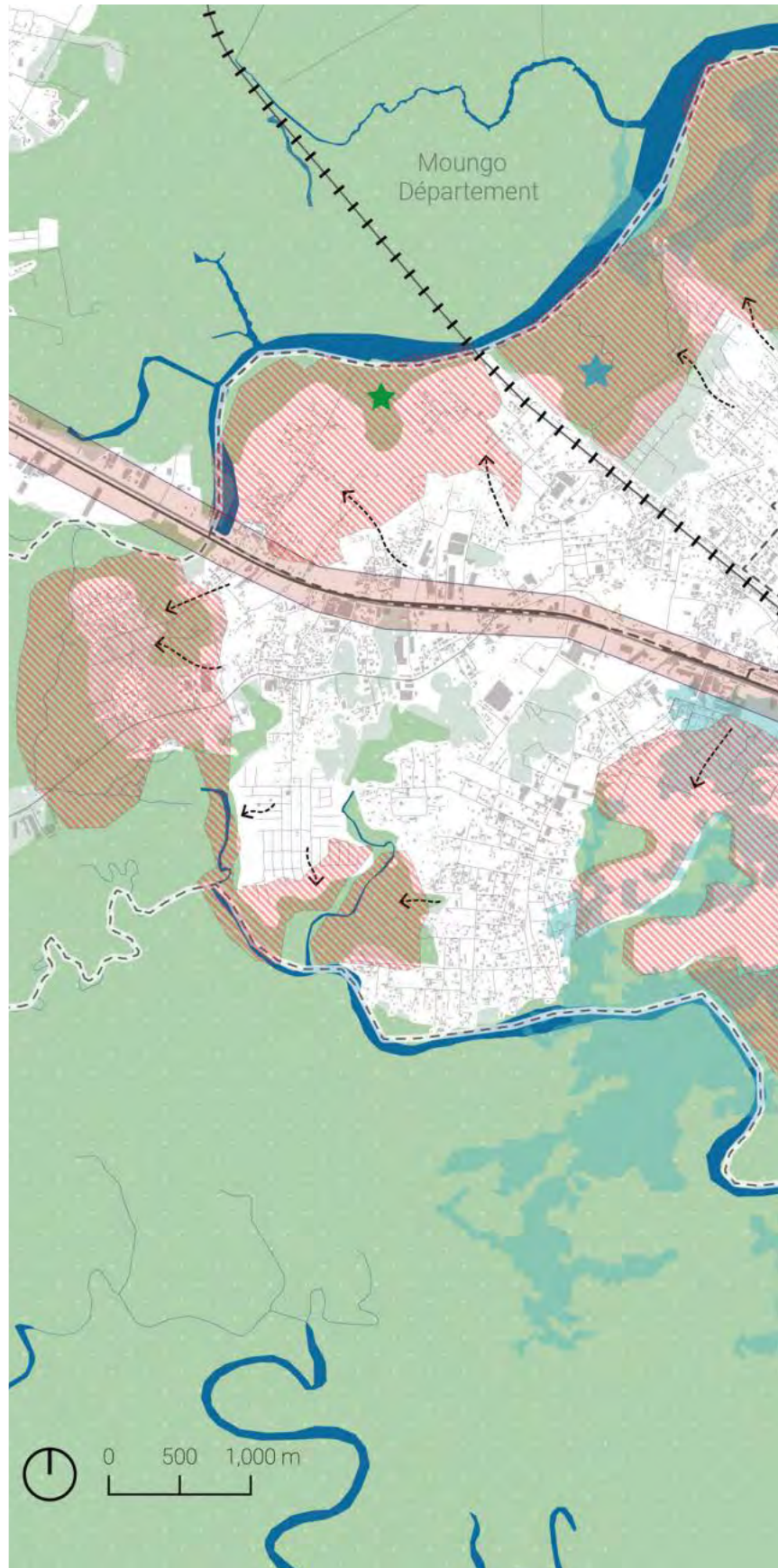
-  Housing project in the context of an urban renewal project
-  Urban restructuring project of the Grand Hangar neighbourhood

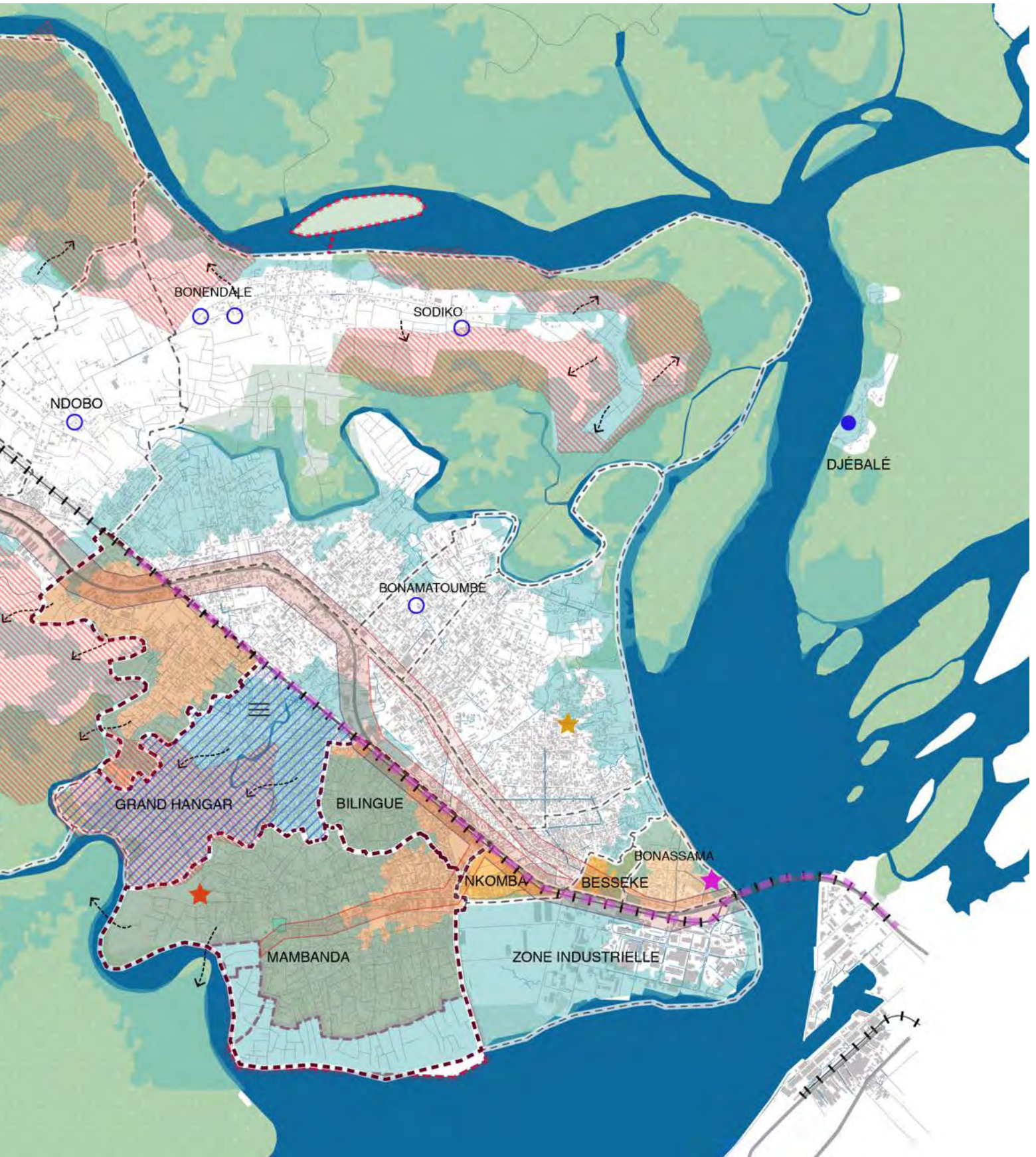
Natural renewal project

-  Redevelopment of the park and green spaces of the intersectoral communal social centre of Mambanda (not yet functional)

Touristic project

-  SAWA Country Club (attractions, sport and cultural facilities)





Map 11. Business As Usual Scenario
Source: UN-Habitat

OPTIMAL SCENARIO PLANNING FOR AN INCLUSIVE, LIVEABLE, AND SUSTAINABLE NEIGHBOURHOOD

CONSTANT PARAMETER	OUTCOMES	Urban Footprint		Catalytic Infrastructure Projects
		2a. Additional Land	2b. Typology of Pattern	
		Population Growth		
STRONG GROWTH > +3 per cent/ year	Outcome #1	LARGE GROWTH - HIGH DENSITY 15.000 p/km ² (17 km ² required)	DENSIFICATION AND INFILL This option would involve the existing settlements, requiring additional land for growth: use vacant land suitable for development and consider densifying denser neighborhoods and promote mixed land use. This has the benefit of being able to utilise existing infrastructure without pressuring already overcrowded neighborhoods.	UNSTRUCTURED DEVELOPMENT OF DOUALA 4 due to the absence of the implementation of the projects.
	Outcome #2	LARGE GROWTH - AVERAGE MEDIUM DENSITY 11.072 p/km ² (23 km ² required)	INFILL This option is to increase the density of existing developed areas within Douala 4 and use vacant land within the urban footprint but the expansion of informal settlement will continue without control.	INEQUAL DEVELOPMENT OF DOUALA 4 due to a partial implementation of the projects.
	Outcome #3	LARGE GROWTH - LOW DENSITY 5.700 p/km ² (51 km ² required)	UNCONTROLLED EXTENSION Despite the current urban planning documents limiting the urban sprawl, this option would involve the expansion of the existing settlements, requiring additional land for growth.	ORGANISED AND BALANCED DEVELOPMENT OF DOUALA 4 EXTENSIVE IMPLEMENTATION at the metropolitan and local level.
PROBABILITY		HIGHLY UNLIKELY		UN
IMPACT		SIGNIFICANT DETERIORATION		SLIGHT DE

If the population growth remains at 3.10 per cent, implementing the recommended actions to face the identified challenges, Douala 4 will become a resilient city.

Likely Impact

In this scenario, a sustainable and resilient city model adapted to Douala 4 will be proposed. This model recommends a compact city pattern to respond to future demographic growth, including measures to fight the

VARIABLES			
Local Economic Development	Development Projects	Environment & Climate Change	Governance
<p>LACK OF IMPLEMENTATION OF ECONOMIC PROJECTS resulting in limited access to employment opportunities for all.</p>	<p>THE LACK OF INVESTEMENTS for urban services will lead to over capacity of all facilities and infrastructures and limited the access for the vulnerable communities.</p>	<p>NO SPECIFIC CLIMATE CHANGE MITIGATION AND ADAPTATION ACTIONS are taken leading to increasing vulnerability for local communities</p>	<p>A LACK OF DIALOGUE in the design and implementation of the projects.</p>
<p>ECONOMIC STABILITY/ SMALL GROWTH resulting in better but poorly diversified job opportunities for all.</p>	<p>THE UNSUFFICIENT INVESTEMENT WILL ALLOW NEW CONSTRUCTIONS OF PLANNED SOCIAL EQUIPMENT. It will improve the access to urban services. However, it will be insufficient to answer the growth of the population.</p>	<p>PARTIAL IMPLEMENTATION of mitigation and adaptation strategies.</p>	<p>A PRECARIOUS COORDINATION between the stakeholders of Douala 4, thanks to the shared information but without a commun vision.</p>
<p>SUSTAINABLE URBAN DEVELOPMENT AND DIVERSIFIED ECONOMIC ACTIVITIES The structuration of the economy dynamic will boost access to job opportunities.</p>	<p>A MAJOR INVESTEMENT AND ORGANISED IMPLEMENTATION The significant improvement of the offer of social services and basic services will result in the improvement of living conditions with good accessibility for all. A network of facilities will be created.</p>	<p>FULL IMPLEMENTATION of strategies mitigation and adaptation in high risks areas.</p>	<p>A COHERENT ARTICULATION OF PROJECTS resulting from the beginnings of assiduous coordination of stakeholders and the integration of the civil society at each step of the urban project.</p>
UNLIKELY	LIKELY		HIGHLY LIKELY
DETERIORATION	SLIGHT IMPROVEMENT		SIGNIFICANT IMPROVEMENT

risks of flooding amplified by climate change. Vertical densification, the control of urban expansion areas and the improvement of mobility are regarded as solutions to face the challenge of mixing and balancing land use while encouraging decent and affordable housing

for all, a sustainable economy and the preservation of biodiversity. The proposed tools and projects will be implemented by 2035.

DOUALA 4

Controlling population growth and urban expansion

Due to the current rate of population growth (3.10 per cent) in Douala 4, the followed strategy is:

- the vertical densification (infill) of already overcrowded neighbourhoods,
- the vertical densification and the housing lot project in vacant and low-density land, and controlled urban area.

In this case, the additional surface area required to meet population growth will be 17 km² (or +43 per cent). Different tools can be deployed to implement these goals.

Urban renewal programmes can be applied in the six densest neighbourhoods, mainly composed of informal settlements. These programmes combine vertical densification and diversity of uses with a greater social mix. The projects integrate mixed housing (social and private housing), a wide variety of services such as shops on the ground floor or social and health facilities as well as public spaces. New centralities will be created allowing easy access for inhabitants to services and facilities. To support the diversification of the housing offer, housing estates can be developed in less dense areas such as Sodiko village, Bonambappe, Bonamatoumbe, and Bonjongo, while preserving the mangrove forest bordering these neighbourhoods. Densification will take place along the main roads – *La Nouvelle Route* and *L'Ancienne Route* - where transport will be developed, promoting a mix of uses and spaces.

Better access to basic services

These projects must include the reinforcement and structuring of basic services. Drinking water, wastewater and energy networks, as well as the organisation of waste collection and treatment, must be improved in existing neighbourhoods. Innovative solutions such as partnerships between the informal and private sectors for waste recycling and renewable solutions (solar energy or biomass), for example, could complement the existing offer and compensate for recurrent power cuts.

Improvement and diversification of transport modes

The efficiency of these actions is supported by an improvement in mobility sector through the extension of the road network and the optimisation of the transport offer. The creation of a road network (average of 40 km of roads) will open up the informal settlements and relieve the current network by creating

alternative routes, for example for freight transport. In addition, intermodal nodes /mobility will be created and organised to provide a transport offer accessible to all. These nodes are located on *La Nouvelle Route* and *L'Ancienne Route* and near the economic centres. Bus, taxi and motorbike taxi stations along the *Nouvelle Route* and near the tram line will be designed. The reinforcement of public transport supported by visible signage will allow better legibility and more fluid information for the residents. A mini-bus service entering the informal settlements will reinforce the offer after the renovation of the road network.

In addition to motorised means of transport, inter-urban transport will be provided by tram and river transport. There are plans to revive passenger transport on the railway line between the administrative centre and Bonaberi. River transport to move from the centre of Douala 4 to the island of Djebalé as well as to the centre of Bonanjo will be developed to relieve congestion on the main roads.

To complete these means of transport, it is important to develop soft mobility, given the modal share of pedestrians. A pedestrian green corridor (along the developed channels and riverbanks) and the rehabilitation of roads with pavements linked by quality public spaces will constitute the various structuring elements of the pedestrian network. This pedestrian network will connect centralities within Douala 4.

Local economic development

The inhabitants will thus have access to the economic centres that provide jobs. These will be multiplied and prioritised between the local centres and those that radiate out to the scale of Douala 4, or even Douala. This network will enable the diversification of economic services and jobs. Building partnerships with the economic stakeholders (Industrial Zone, PAD and other actors) of the area will be a key step. For example, partnerships between the informal and private sectors will make it possible to create new jobs while supporting the vulnerable population. This can take the form of trainings and a minimum percentage of people recruited locally.

The eco-tourism mentioned during the workshops will be able to become part of Douala's economic strategy to enhance its green potential and create a resilient city for Douala.

"*Negotiated*" urban planning can be put in place to avoid

economic enclaves: public actors can negotiate with the industrial zone and the PAD to avoid urban divisions and maintain access to the banks of the Wouri River for all. Mixed urban sequences, i.e. a section whose compositional elements converge towards the same overall unity, will be developed within and on the edge of the industrial zone and PAD (parks, green corridors, small shops areas, access to the riverbanks).

Access to social facilities for all

The living conditions of the inhabitants will be improved by the addition of new health, education and social facilities.

Given the current shortage of school facilities, existing schools can be expanded by several floors. Furthermore, according to the legislation, it is possible to build new school facilities, especially kindergartens and primary schools, depending on the number of the population. The primary and nursery schools have 67,749 pupils, mainly in the private sector. For primary schools, 456 students, or 93% of the total number of students enrolled in Douala 4 are enrolled in private schools. The enrolment rate of girls in primary school in all private and public schools represents about 49% in Douala 4. However, girls from IDP families are marginalized from the school system.

As regards health infrastructure, given the growth in the population, local health centres will be built in neighbourhoods where there are no hospitals, close to public squares. Each neighbourhood will have to be provided with at least one primary school and one health centre. Accessibility to health care will be improved by the creation of a mobile medical fleet that will be able to travel to neighbourhoods that are difficult to access, such as Mambanda. The mobile medical fleet will park at intersections, transformed into public squares twice a month for basic care.

The construction of equipment for IDPs such as social and reception centres to integrate them properly to Douala 4 society and into the host community will be a tool for the Council to manage the flux of IDPs.

Development and preservation of natural areas

The residents' living conditions, including vulnerable populations living in areas at risk, will also be improved by the implementation of blue, and grey infrastructures and nature-based solutions (NBS) to fight rising water levels and flooding. Hybrid infrastructures (dykes + green promenade) will be developed on the eastern and

PRESERVE AND VALUE THE NATURAL HERITAGE



DEVELOP INTERMODALITY



FOSTER ECONOMIC DEVELOPMENT



VERTICAL DENSIFICATION

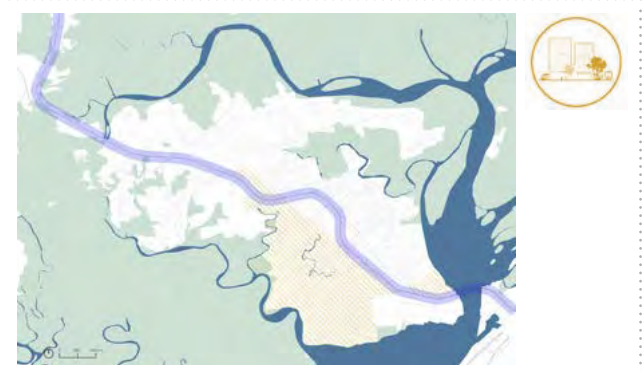


Fig. 9 Measures and action to be implemented
Source: UN-Habitat

LÉGENDE

Transports

- Route principale
- Route secondaire
- Chemin de fer

Limite administrative

- - - Quartier

Système naturel

- Cours d'eau
- Zone naturelle (sans constructions)

- | | |
|---------------------------|-------------------------------------|
| Marché/Commerces | Centrale électrique pour le tramway |
| Accès piéton | Hôpital existant |
| Gymnase | CSI existant |
| Navette fluviale | Station de bus régionale |
| Embarcadere / Débarcadere | Halle de marché |

1. RENFORCER LES INFRASTRUCTURES ROUTIÈRES POUR FACILITER LES ÉCHANGES INTERCOMMUNAUUX ET LE BON FONCTIONNEMENT DES ACTIVITÉS ÉCONOMIQUES

Améliorer la route principale (Nouvelle Route)

- Développement d'une nouvelle ligne de tramway
- Développement de nouveaux nœuds intermodaux
- Renforcement des nœuds intermodaux existants
- Amélioration des stations de bus existantes
- Amélioration de l'équipement routier (trottoirs, éclairage, caniveaux, végétation)

Développer l'intermodalité

- Mobilité douce: liaisons avec les centralités économiques
- Transport fluvial
- Nouvelles routes asphaltées et pavées

2. PROTÉGER ET VALORISER L'ENVIRONNEMENT AFIN DE GARANTIR UN CADRE DE VIE DURABLE, SAIN, ET SÛR

Protéger les aires naturelles / Prévenir des catastrophes naturelles

- Protection et restauration des aires naturelles (mangroves, bois, berges du fleuve Wouri)
- Installation de digues (matérielles ou naturelles)
- Parc (bassin de rétention dans les zones inondables)

Valoriser le patrimoine naturel / Développer l'éco-tourisme

- Développement du port (espace public, activités commerciales)
- Éco-tourisme (activités fluviales, protection de la nature) et amélioration des conditions de vie pour tous
- Assurer un accès aux rives du Wouri pour tous
- Couloirs verts: promenade plantée le long des branches du Wouri

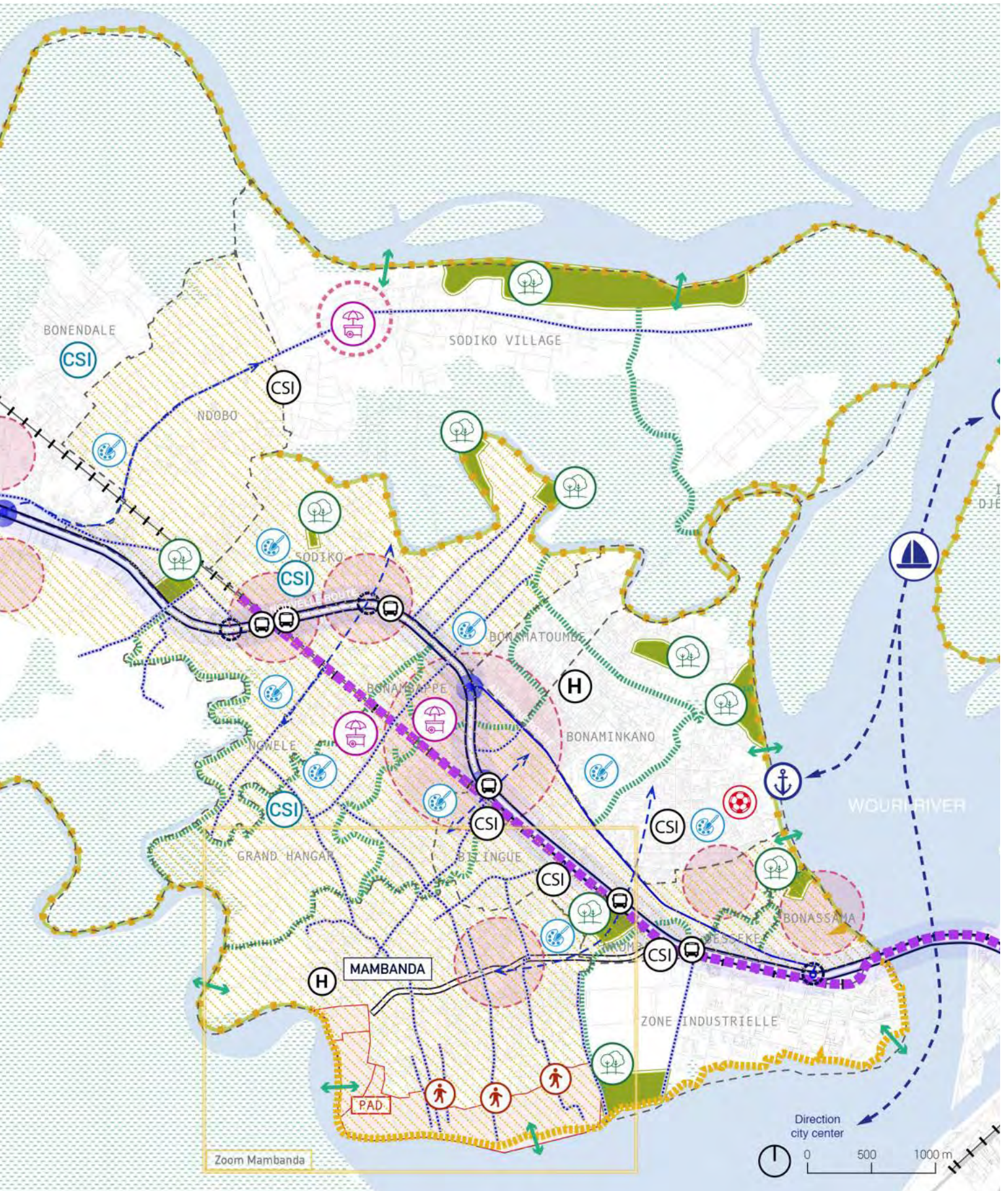
3. AMÉLIORER LES CONDITIONS DE VIE ET LES ÉQUIPEMENTS URBAINS AFIN DE GARANTIR UN ENVIRONNEMENT URBAIN INCLUSIF ET RÉSILIENT

- Développement de nouvelles centralités économiques
- Renforcement des centralités économiques existantes
- Port Autonome de Douala - Urbanisme concerté
- Centres communautaires, culturels et bibliothèques
- Centres de santé intégrés (CSI)

4. ASSURER L'ACCÈS DE TOUS À UN LOGEMENT ADÉQUAT, SÛR ET ABORDABLE ET AUX SERVICES DE BASE

- Rénovation urbaine: fonctionnelle et logement mixte dont logement accessible pour tous et densification verticale
- Densification verticale le long des axes structurants
- Mambanda, quartier prioritaire





Map 12. Optimal Scenario for Douala 4
Source: UN-Habitat

western banks). Eight green spaces can be created which will be composed of retention ponds and will preserve the mangrove. They will be built in dense neighbourhoods and housing estates. The “urban forests” identified on the map will be on the edge of neighbourhoods, close to the shoreline to encompass the mangrove, as in Bojongo. Other mitigation measures will be applied: organisation of citizens, text alerts by mobilising telephone operators, etc.

The development of green spaces and the green corridor (30km) will make it possible to enliven this pedestrian itinerary with sports activities such as the creation of a second category *Parcours Vita* or sports facilities along the banks. The riverbanks (44km of banks to be upgraded) could be developed to encourage ecotourism and recreational activities.

In this scenario, it is planned to develop 1.29 km² of green space (including existing spaces to be enhanced and the creation of new green spaces).

Strengthening citizen participation and community activities

Cultural, recreational and social spaces will be developed through two mechanisms: community and cultural houses, and reception centres. The community and cultural centres will be the link between public institutions and civil society. The public institutions will be able to organise consultations to gather proposals or requests from citizens. These places will also ensure the cohesion of the inhabitants because they will be available to the inhabitants to organise cultural events, study spaces and libraries, and animate neighbourhood life. To manage the arrival of IDPs in good conditions and strengthen inter-neighbourhood solidarity, each neighbourhood of Douala 4 will have to be equipped with a reception centre for IDPs, which will be part of a network of centres managed by the Douala 4 Council.

By providing compact spaces, promoting social mix and access to services, and improving basic infrastructure, a solid, sustainable urban foundation will be laid in the Douala 4 subdivision, thus fostering an environment conducive to economic development (SDG 1,8) and improving overall living conditions (SDG 3, 11).

MAMBANDA- PILOT AREA

Managing population growth and urban expansion

The principles deployed in Douala 4 will be applied to the Mambanda neighbourhood, which is considered as a priority neighbourhood. It will experience a growth rate of 3 per cent according to estimates (UN-Habitat stat), increasing the population from 139,686 to 189,741 people by 2030.

Mambanda is one of the six densest neighbourhoods that will be subject to an urban renewal and restructuring project. Mixe-use land and vertical densification will be at the heart of the project to control urban sprawl to islands, marshy zones and informal housing. These projects will include shop centralities, public spaces and social facilities to meet the needs of the growing population.

Given the expansion of the PAD to the southern shores of Mambanda, it will be necessary to anticipate the movement of people who will either move to the north of the district or settle in the neighbouring districts. To this end, the construction of new housing and the densification of existing buildings along the asphalt road will be planned in place of makeshift housing. Social support will be offered to rehouse vulnerable people living in the areas at risk through the IDPs reception centre. This will be located on the main road near the primary school to ensure good visibility and easy access.

Better access to basic services

These housing projects will include the extension of basic service networks. Green energy can be experienced to complete the main network and waste collection points can be set up. Recycling awareness-raising exercises can be implemented in schools. The Douala Council 4 has planned an extension of the water network which will be important to extend to all the blocks of the district. Drains will be installed by 2032 and the scouring of the drains will have to be monitored and the population involved.

Local economic development

Access to the river will be maintained and developed through mixed urban sequences. These sequences will be designed to encourage new economic activities (eco-tourism, leisure, shops) and to preserve the fish farming areas. In addition, a section of the tramway

will cross Mambanda, and the densification of the surrounding area will allow a new economic dynamic to be created that will provide jobs. Other commercial lines will be created close to public spaces (squares, gardens or green corridors), within the PAD zone and near the central road and the tram line. Commercial places will be reserved for IDPs and a subsidy may be granted to them, according to their income. The new markets, as economic and social places for IDPs, will constitute strong local economic centres.

Improvement and diversification of transport modes

The means of transport will be optimised thanks to a system of communal mini-buses which will make it possible to link the various neighbourhood together. On the central road of Mambanda, bus and motorbike taxi stations will be provided to organize intermodality and improve passenger comfort and security. To reinforce the mobility offer, a pedestrian network will serve the main intermodal nodes. The pedestrian network will aim to reduce the urban divide between functional areas.

Access to social, educational and health facilities for all

Following the national grid of urban facilities, this hypothesis foresees the construction of an additional primary school to respond to the current saturation and anticipate future needs. Within the framework of this expansion framed by the DUP, it is planned to move the bilingual high school of Mambanda. The UN-Habitat team suggests its installation in the south of the neighbourhood on the same axis and densifying it on several floors.

The health facilities will be reinforced and the current CMS will become a subdivision hospital. Public spaces will be created at the intersections of the paved streets to accommodate the mobile health fleet to provide basic health care. Recreational facilities will be highlighted by the construction of a gymnasium and leisure parks, and a community and cultural centre that will offer recreational activities outside the Douala 4 consultations.

Development and preservation of natural areas

Vacant spaces and wastelands will be transformed into green spaces (urban forests, or parks) and will represent a natural barrier to fight against flooding, as the entire Mambanda neighbourhood is likely to be flooded by 2030 at the worst assumption. Twelve

parks with retention basins and the green corridor will be developed, allowing circulation between the different areas of the district. Green and playful urban sequences are planned within the 6.5 km PAD perimeter to blur the urban divides of the rights of way.

The implementation of the desired principles in Douala 4 for the priority neighbourhood of Mambanda defines the actions and urban projects to be deployed to strengthen the resilient and sustainable model of Douala 4. In addition, each neighbourhood will be able to apply the Douala 4 principles according to the context and realities on the ground. This methodology can then be deployed in the five other neighbourhoods experiencing the same dynamics.

LEGEND**Transportation**

- Primary road
- Secondary road
- Railway
- New tramway line

Administrative boundaries

- - - Neighbourhood
- Block

Natural system

- Waterway
- Natural zone (no constructions)

Equipments

- Chiefdom of Mambanda
- Reception centre for IDPs
- Market / Shops
- Existing integrated health centre (CSI)
- Bilingual high school
- Private secondary school
- Private kindergarten or primary school
- Private kindergarten and primary school (groupe scolaire)

1. STRENGTHEN TRANSPORTATION INFRASTRUCTURE TO FACILITATE INTER-COMMUNAL EXCHANGES AND THE GOOD FUNCTIONING OF ECONOMIC ACTIVITIES**Improve the main road**

- Development of new intermodal hub
- Improvement of road equipment (sidewalks, lighting, gutters, vegetation)

Develop intermodality

- Soft mobility: Linkage to economic centres
- New paved road

2. PROTECT AND VALUE THE ENVIRONMENT TO ENSURE A SUSTAINABLE, HEALTHY, AND SECURE ENVIRONMENT**Protect the natural resources / Prevent climate hazards**

- Protection and restoration of natural spaces (mangroves, wetlands, Wouri river shoreline)
- Installation of dykes (material or natural)
- Park (works as a natural retention pond in flooding areas)

Value the natural heritage / Develop ecotourism

- Port development (public spaces, commercial activities)
- Eco-tourism (river activity, natural protection) and improvement of the living environment for all
- Ensuring access to the waterfront for all
- Green corridors: planted walk along the channels of the river

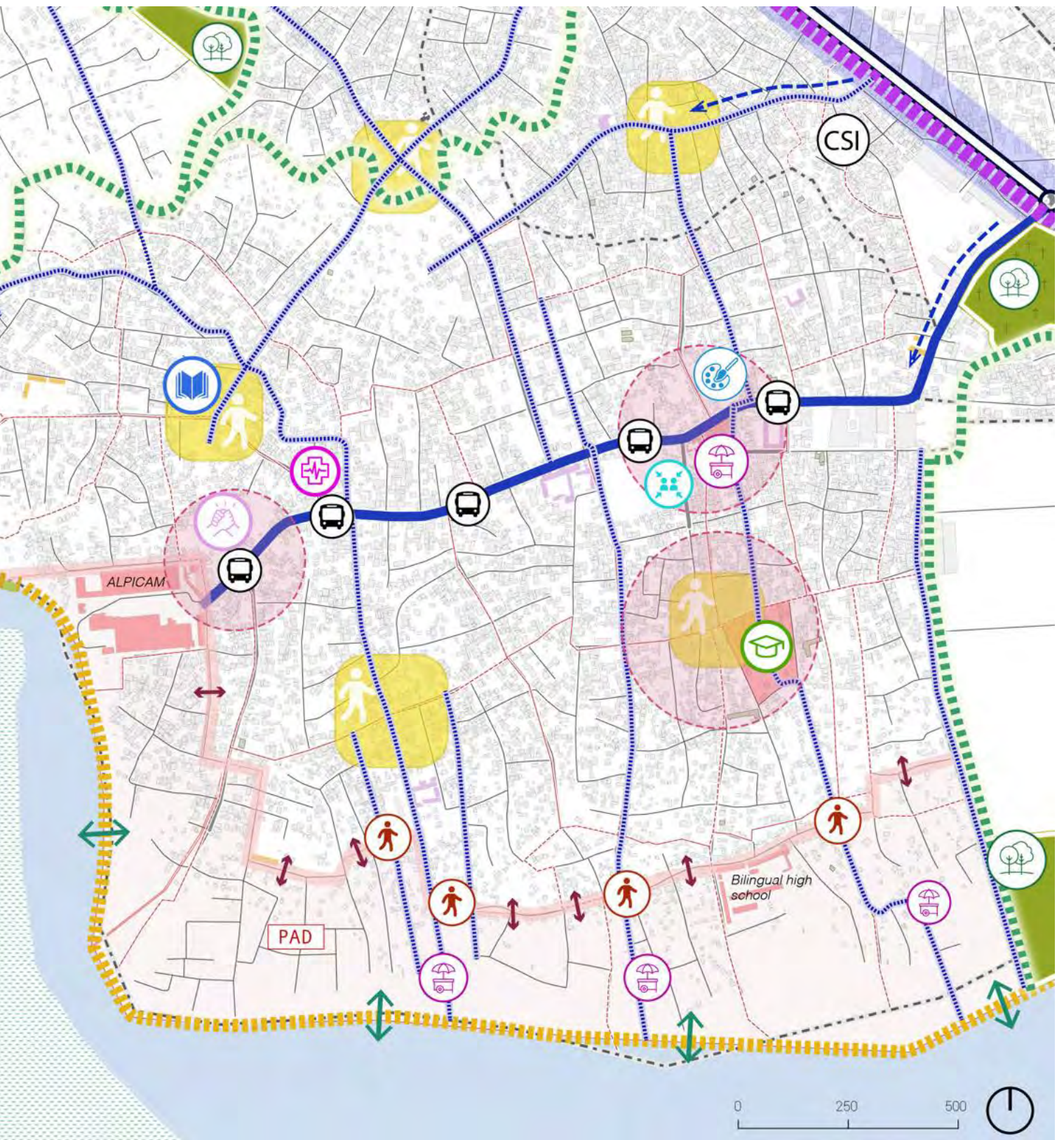
3. IMPROVE THE LIVING CONDITIONS AND URBAN AMENITIES TO ENSURE AN INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE URBAN ENVIRONMENT

- Strengthening of existing economic centralities
- PAD - Concerted urban development
- New community, cultural centres and libraries
- Transformation of the current CMA into a hospital
- Relocation and densification of the bilingual high school of Mambanda
- Extension of the primary school
- Visual and physical porosity
- Pedestrian access
- Transformation of crossroads into public squares

4. ENSURE FOR ALL TO ADEQUATE, SAFE AND AFFORDABLE HOUSING AND BASIC SERVICES

- Urban renewal: functional and housing mix + vertical densification + accessible housing for all
- Vertical densification along the main roads





Map 13. Optimal Scenario for Mambanda
Source: UN-Habitat

FROM THE OPTIMAL SCENARIO TO THE LIST OF PROJECTS

RATIONAL

Based on the urban visioning and the optimal scenario six major urban intervention programmes for Douala 4 and the Mambanda neighbourhood are highlighted:

- Basic Infrastructure.
- Environment.
- Mobility.
- Housing and Densification.
- Social and Cultural Facilities,.
- Economic Development.

The development of these programmes, led to the identification of projects that would need to be implemented in the next 10 years and beyond to ensure the sustainable urban development of Douala 4 and Mambanda.

THE PROCESS OF IDENTIFICATION OF NEEDED PROJECTS

In order to assess the projects that need to be implemented in priority in the next 10 years, a scoring matrix was developed (Annex A). The objective of the scoring matrix is threefold:

- Assess likely impacts of the projects proposed by UN-Habitat vis-à-vis the sustainable urban development of Douala 4 and Mambanda.
- Prioritise the projects according to their transformative impact on the social, environment, economic, and spatial aspects, their urgency, as well as the alignments with the existing governmental plans. The final scoring of each project considers the assessments of the local community representatives and key local stakeholders of the subdivision of Douala 4.
- Assess the capacities (spatial planning, institutional, funding, implementation) of the subdivision of Douala 4 for UN-Habitat to better tailor interventions and provide targeted recommendations.

THE IDENTIFICATION OF NEEDED PROJECTS

The optimal scenario has listed of 40 development projects based on local stakeholders and communities' need assessment, UN-Habitat team's expertise, financial and technical feasibility, and the available capacities of the subdivision of Douala 4.

The matrix exercise listed **17 needed projects** that scored above 65/100 (Annex A). These 17 projects are part of the Basic Infrastructure.

Mobility.

Environment.

Housing and Economy Development.

After listing these 17 projects and defining their main orientations, each project was phased to understand how it can be implemented. The phasing of these projects is shown in the table below and was determined on the basis of the technical capacity of the town hall and related projects currently being carried out by Douala 4.

After discussions with the municipality, the UN-Habitat team narrowed the list of 17 projects to those most mature and could be legally implemented at the city and subdivision levels. The selection has brought to light 12 projects which will be presented in the action plan in the following chapter. These 12 projects were detailed on the basis of their maturity and the possibility of implementing them according to the capacity of the municipality.

17 NEEDED PROJECTS (> 65)	PHASE (YEARS)
BASIC INFRASTRUCTURE	
Water supply and sewerage network improvement	0 - 4 years
Electricity network improvement	0 - 4 years
Solid waste management (SWM) system	0 - 4 years
Development of information and communication technologies (ICTs)	0 - 4 years
MOBILITY	
New paved and upgrading of existing roads	0 - 4 years
Intermodal hub / Urban integration	Beyond 5 years
ENVIRONMENT	
Ecological restoration of mangrove swamps	0 - beyond 5 years
Digital solutions for climate actions	0 - 3 years
Extension and renovation of drainage system	0 - 3 years
Construction of hybrid dykes	0 - 3 years
Construction of parks including retention ponds	3 - beyond 5 years
HOUSING	
Housing development and upgrading	1 - beyond 5 years
Urban renewal programme	2 - beyond 5 years
Vertical densification along the main axis (Nouvelle route and Ancienne route)	0 - beyond 5 years
Land tenure security (pooling of land titles and production of common land titles)	1 - beyond 5 years
ECONOMY	
Local economic development (LED) of Douala 4	0 - 5 years
Development of sustainable economic activities and eco-tourism	Beyond 5 years

Fig. 10 List of needed projects

03

STAKEHOLDER ENGAGEMENT

SCENARIO WORKSHOP METHODOLOGY



Photo 5. A group of participants during the workshop
Source: UN-Habitat

Following the workshop organised on 12 April, 2022 dealing with the presentation of the challenges and opportunities and the construction of the urban vision, a technical committee on 9 September, 2022 was conducted to validate the variables and the scenario “business as usual”. After this Cotech, a workshop was organised on 20 September, 2022. This workshop focused on the presentation of the “business as usual” scenario and was followed by a group exercise to co-build the optimal scenario.

The participatory workshop was attended by the Mayor of Douala 4 and his team, representatives of the ministries (MINHDU / MINEPAT / MINDDEVEL / Ministère des Transports), the city of Douala, Douala 4, the private sector, UN agencies, civil society associations, representatives of the Mambanda neighbourhood and internally displaced person representatives of Mambanda – 46 people

participated in this participatory workshop.

The workshop aimed to validate the urban vision presented in the first part, then to share the stakes of a business-as-usual scenario and finally to work together to draw and define the priority actions for Douala 4 and the pilot neighbourhood Mambanda.

The workshop was structured around two main phases:

- The session was introduced by the representative of the sub-prefect and the mayor of Douala 4 who underlined the collaboration with the team in charge of the Douala 4 Municipal Plan. The session continued with a detailed presentation of the objectives of the mission by the UN-Habitat team, the progress and timetable of the study, and the major themes of the urban profile including the vision part. Then the variables and the scenario BAU were presented and the question and answer session started.



Map 14. Map produced during the workshop by a group of participant
Source: UN-Habitat

• The group work of the workshop was dedicated to the part of the scenario, which consists in building together the optimal scenario for Douala 4 and Mambanda within the next five to ten years following the 6 identified variables. Each group was able to express its ideas and discuss them and the exercise showed that the participants were converging toward a list of actions according to a timescale (short term - 0 to 3 years, medium-term - 3 to 5 years, long term – up 5 years to 10 years).

Following the presentation, the interactive working session was organised as follows: the 46 participants were divided into six groups composed of people from different backgrounds. People were not gathered by institutions or sectors to foster richer exchanges. A focus was hold for women to express and underline their ideas. Each group had a map of Douala 4, and each participant had a questionnaire to help and guide them in their

discussions. The questionnaire was structured around two exercises: first the scoring of the variables based on their priorities, then another exercise to localize the priority actions following the given timescale. For the second exercise, the UN-Habitat team raise awareness through the participants that the identified actions should be classified according to a realistic point of view to be implemented on the ground, taking into account the conditions and the legal process. Each group was supervised by a facilitator who was a member of the UN-Habitat team or one of the focal points of the Cityhall of Douala 4. The groups were able after a long discussion to locate on the map the key places where actions should be implemented following the timescale.

DATA AND RESULTS OF THE SCENARIO WOKSHOP

First activity

The first activity of the workshop took place after the participants had validated the six variables identified and presented by the UN-Habitat team. Participants prioritised the variables at the level of Douala 4 and Mambanda. They were asked to explain their choice but only a few groups justified their ranking. Each group was composed of different actors to facilitate discussion to obtain results that were representative of all stakeholders. Nevertheless, these results remain limited as they only convey the views of the actors and communities present at the workshop and do not represent the entire population of Douala 4. In an excel sheet (annex A), the UN-Habitat team gathered the results to define the average ranking. Table 2 (p. 80) synthesises the results of the different groups.

Results and discussion

The prioritisation of the variables was far from unanimous among the different groups despite the diversity of participants in each group. The table, in this respect, represents the overall ranking. The results differ between Douala 4 and Mambanda: the variable Urban governance is at the top of the list for Douala 4, while the variable Catalyst infrastructure projects is the first variable raised in Mambanda. This confirms that Mambanda faces specific challenges. Nevertheless, the socio-economic development variable and the equipment variable were ranked third and fifth respectively, both at the scale of Douala 4 and Mambanda. Despite the different average ranking of the variables, both Douala 4 and Mambanda face similar challenges that need to be addressed concomitantly.

Participants stressed the importance of access to affordable and adequate housing—one of the main priorities and difficulties when one settles in Douala 4. Access to basic needs and services remains the main priority when participants justified the ranking of the variables. In this respect, coordination between stakeholders is crucial to achieving good urban governance development of the

city. The preservation of the environment coupled with the development of catalyst infrastructure projects contribute to the attractiveness of the subdivision while ensuring a liveable environment for its inhabitants. For each variable, participants listed common actions to be implemented:

- Urban governance: improvement of the coordination between actors, creation of an exchange platform for better communication with citizens, and organisation of training workshops for the municipal staff.
- Catalyst infrastructure projects: transport infrastructure development (roads, railway, waterways), improvement of intermodality, development of fish farming.
- Socio-economic development: construction of social housing, an extension of the PAD, construction of factories, hostels, and control of the informal sector.
- Urban sprawl: vertical densification, restructuring/renovation of informal neighbourhoods.
- Equipment: construction of schools, health centres, centres for IDPs, market facilities, games rooms, recreational areas, improvement of access to basic services (water, electricity, household waste management).
- Environment: preservation of the mangrove, development of the banks of the Wouri, construction of dykes, raising awareness of climate change.

Conclusion

The scenario-building process took into consideration the variety of perspectives expressed by the stakeholders during the workshop. The optimal scenario is the result of the combination of the data collected during the workshop and the expertise of the UPIMC team. This participatory approach promoted by the UPIMC programme aims to ensure an inclusive, liveable, and sustainable subdivision and neighbourhood.

Rank	SCALE		COMMON VARIABLES
	DOUALA 4	MAMBANDA	
1	Urban governance	Catalyst infrastructure projects	
2	Catalyst infrastructure projects	Environment	
3	Socio-economic development	Socio-economic development	Socio-economic development
4	Urban sprawl	Urban governance	
5	Equipment	Equipment	Equipment
6	Environment	Urban sprawl	

Table 3 – Average ranking of the variables by participants at the BAU scenario validation workshop
Source: UN-Habitat

Second activity

The second activity during the workshop was the localization of actions according to the timescale (map. 12, p. 82-83). Following this workshop, the UN-Habitat team synthesised these actions under common orientations.

The participants focused on short-term actions grouped into three variables:

- Infrastructure: improving the road, water and electricity networks;
- Basic social services: by building schools, a health facility, and a reception centre for IDPs;
- The environment: reforestation and awareness-raising among the population on the preservation of the mangrove.

In the medium term, the participants chose to ensure the preservation of the environment through the construction of a waste treatment unit and the development of drains to combat flooding and climate change. Moreover, they underlined the need to implement catalytic projects such as building multimodal transport and rehabilitating roads to improve traffic flow.

In the long term, participants focused on real estate projects through the construction of social housing and the implementation of land development operations to control urban expansion.

In Douala 4 and the Mambanda neighbourhood, the priorities of the population were the same in the short and long term. In the medium term, the participants requested the improvement of market facilities and social equipment, while in Douala 4 District, they highlighted the preservation of the environment and the implementation of catalytic projects

It is important to underline that actions were proposed by each group but in a disparate way. The following concerns were raised: awareness and preservation of the mangrove, the creation of a police watch, the development of playgrounds and the construction of sports facilities.

Thus, the table 3 presents a summary of the common actions that were retained following the workshop:

	SHORT TERM	MID-TERM	LONG TERM
ACTIONS	Development and maintenance of roads	Establishment of multi-modal transport	Construction of social housing
	Extension of water and electricity networks + drains	Construction of new roads	Construction of dykes
	Creation of a health centre	Construction of a waste and sewage treatment plant	Development of new energy sources
	Construction of a reception centre for IDPs	Construction of market facilities and other economic spots	Restructuring of the Mambanda neighbourhood
	Reforestation	Development and construction of recreational centres	Completion of housing Estate operations and social housing
	Vertical densification	Development of drains Construction of a community centre	Construction of a cultural centre and sport facilities
	Construction of nursery and primary schools	Construction of health centres	

Table 4 – Action plan by participants at the BAU scenario validation workshop
Source: UN-Habitat

LEGEND

Transport

- Main road
- Secondary road
- + + + Railway

-  Build-up area

Administrative boundaries

- - - Neighbourhood
- SODIKO Village

Infrastructure projects in Douala 4




Services

- Extension of the electricity network
- Extension of the drinking water network


Equipment

-  Playground
-  Commercial equipment
-  Community House
-  Cultural Center
-  Reception and orientation centre for IDPs
-  Primary School
-  Health centre
-  Waste treatment plant

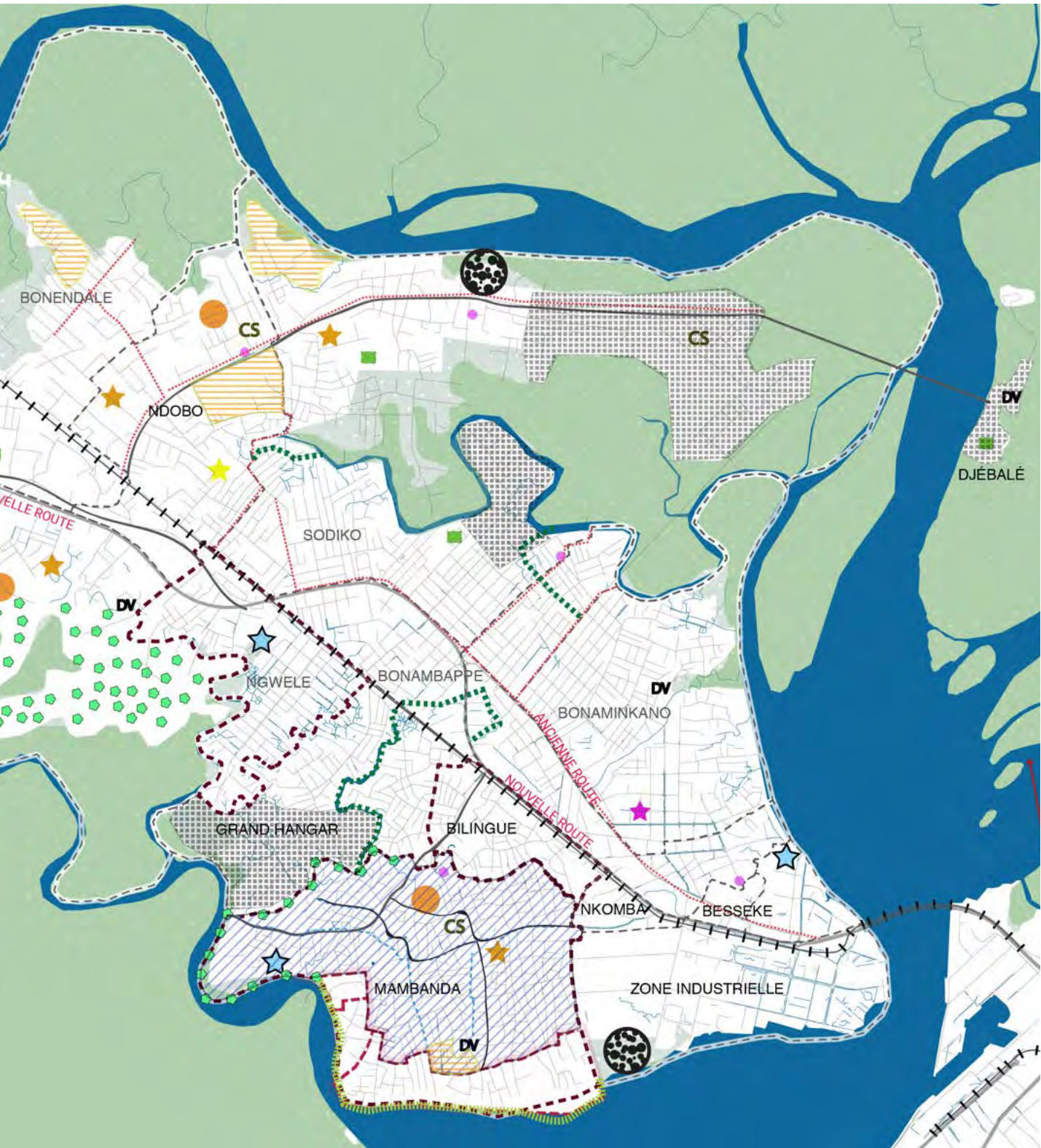
Urban renewal project

-  Social housing project
-  Urban restructuring project
-  Subdivision project
- DV** Vertical densification area

Natural features

-  Reforestation
- Drains to be constructed
- Dyke to be constructed





Map 15. A synthesis of the actions resulted from the workshop
Source: UN-Habitat

COTECH AND LOCAL COMMUNITY SCORING

ANALYSIS OF THE SCORING MATRIX

Filling of the matrix: Methodology

The scoring framework drew on a participatory approach by collecting local stakeholders and civil society representatives scores of the development projects. On 22nd November 2022, the UN-Habitat team organised a technical meeting (COTECH) with local stakeholders of the municipality of Douala 4. The team presented the results of the scenario-building process, including the variables, the optimal scenario, and the list of development projects. The second part of the meeting focused on the scoring of the projects. First, participants scored and debated the overall transformative impact of the different projects based on their knowledge of the local context. Finally, the UN-Habitat team collected and reported the scores in the scoring matrix.

The projects assessment by civil society representatives took place during the Scenario validation workshop (p. X). To simplify the process of the scoring matrix, the participants were asked to list and classified the priority actions to be implemented in the five next years (short, medium and long term) to ensure a sustainable urban development of Douala 4.

Limitations

One must be aware that the scoring of the matrix by the different stakeholders conveys the majority rather than a consensus.

Analysis and justification of the scoring

- **Basic Infrastructure Projects (score: 66, 68, 69):** Basic infrastructure projects constitute a top priority for the subdivision of Douala 4 in the next year. Both representatives of the civil society and Douala 4 stakeholders stressed the urgency to provide basic infrastructure in all neighbourhoods and for instance the high impact of the extension and upgrading of the water system. Improving the solid waste management system coupled with awareness-raising on waste maintenance and management is crucial to reduce health risks, especially with the high demographic growth and pollution. Overall, the development of basic infrastructure will improve the living conditions of Douala 4 residents.
- **Mobility projects:**
 - Upgrading and extension of the road Network (score: 71): Most participants claimed that the construction and upgrading of the road network will have a significant transformative impact as this is necessary to implement other projects.
 - Intermodality (score: 65): Therefore, projects concerning public transportation, intermodality, and soft mobility received a lower score.
- **Resilient infrastructure (score: 71):** Participants suffer from floods in their daily life, preventing them to move to their work or other facilities. Moreover, they realised that if no actions are taken, a large part of Douala 4 will be under water in the next years, which justify the high score of these projects. They stressed the importance to develop awareness campaigns among local populations.
- **Housing (score: 67, 74):** The housing development and upgrading project received a high score while urban renewal projects received a lower score as they directly target only inhabitants living in informal settlements, including IDPs and other vulnerable populations. Land tenure security remains a concern and will have a strong impact in terms of housing accessibility and affordability.
- **Economic development (score: 69, 66):** All participants agreed that the diversification of economic activities was important to boost the local economy of Douala 4.
- **Social and recreational projects (score 51, 61, 59):** Health equipment, social and recreational projects with a positive impact on health received a good score. There is a substantial lack of health infrastructure in the subdivision. The upgrading of Mambanda CMA into an hospital and the construction of new integrated health centres (CSI) will respond to the needs of the population in the neighbourhood and its surrounding. It is important to raise awareness among vulnerable populations, especially women and girls who very often fail to access social and health services.
- **Local capacities programme (score: 56, 57):** Civil society representatives scored very high every local capacity project and digital tools (GIS) which was not the case for Douala 4 representatives. Both

suggested that the establishment of a zoning map will have a high impact.

Results and discussion

Eventually, the overall scoring of the different projects by the UN-Habitat team remains similar with the scoring of the different stakeholders added. The scoring by the UN-Habitat team brings more nuances and information about each transformative impact that will be useful in the investment cards. The projects highly scored refer to the priority projects in terms of urgency and transformative impact (i.e., which need to be implemented as soon as possible). This is an important step in the development of the Action plan as the implementation of the priority projects must start during the phase 1 (i.e., the first three years).

Limitations

Some projects, such as capacity programmes or education equipment, have a strong but indirect transformative impact, therefore, they did not receive a high score in the matrix. It is urgent to develop social and health facilities in Douala 4 despite their low environmental, spatial, and economic impacts. As a result, the prioritisation of the projects does not necessarily describe the urgency of the situation and limits to provide an operational vision as it is mainly based on impact assessment and not technical considerations.

CONCLUSION

The scoring matrix prioritised the projects based on their transformative impact on the sustainable development of Douala 4. **11 priority projects with a score above 65** have been highlighted:

- **Basic infrastructure:** Water & sewerage networks upgrading, Electricity network upgrading, Solid waste management system (SWMS), New technologies of information and communication (NTIC).
- **Mobility:** Upgrading of the road network, Intermodality development project.
- **Environment:** Resilient infrastructure divided into 5 projects (grey, blue and green).
- **Housing:** Housing development and upgrading, Vertical densification of public land, Land tenure security, Urban renewal programme.
- **Economic development:** Eco-tourism, Local economic development programme.

Among the 17 priority projects, 12 priority projects have been further detailed into investment cards

with the support of financial experts considered as the most mature to develop: Water & sewerage networks upgrading, Electricity network upgrading, Solid waste management system (SWMS), New technologies of information and communication (NTIC), Upgrading of the road network, Resilient infrastructure, Housing development and upgrading, and Urban renewal projects.



Photo 6. Participants filling the scoring matrix during the technical committee
Source: UN-Habitat

STAKEHOLDER COLLOQUIUM “PRESENTATION OF THE URBAN PRIORITY PROJECTS IN DOUALA 4, FOR A RESILIENT SUBDIVISION IN THE FUTURE DOUALA METROPOLIS”

METHODOLOGY OF THE COLLOQUIUM

The stakeholder colloquium on the “Presentation of priority urban projects in Douala 4, for a resilient subdivision in the future Douala Metropolis”, was held on January 12, 2023, in the city of Douala and by videoconference. 40 participants attended the event, including local stakeholders of the subdivision of Douala 4, donors, investors and financiers. This symposium was articulated around two steps:

Step 1 - Presentation of the priority projects

This step was devoted to the presentation of the Spatial profile, the Strategic urban vision, the Optimal scenario, and the priority urban projects to consolidate the action plan. The presentation of the challenges aimed to raise awareness among donors and investors of the high urgency of the interventions to be carried out in the subdivision of Douala 4.

Step 2 - Thematic roundtables

The priority projects, grouped into six thematic categories, represented the areas of intervention of international funding agencies, local financial institutions, and private actors. Each roundtable was devoted to a theme and was moderated by a facilitator from the UN-HABITAT team. During this step, each participant had the opportunity to go through the six roundtables to learn more about the priority projects developed for each identified theme:

- Theme 1: Basic infrastructure
- Theme 2: Economic and commercial development
- Theme 3: Environment
- Theme 4: Housing and housing mix
- Theme 5: Mobility
- Theme 6: Social and recreational equipment

The roundtables promoted the identified priority projects and brought together the actors of the territory interested in the projects to create synergies between actors with similar interests, with a view to pooling efforts for the development of Douala 4.

The following tools were used during the symposium:

- **Benchmark** of similar projects that have already been implemented in other African cities (Examples: project to acquire 20 river units to strengthen operations on the Congo River, mangrove restoration project in Mozambique, urban seedling program in Dakar, etc.);

- **Thematic maps** to localise the priority projects on a specific theme at each phase (short, mid, long);
- **Investment maps** containing all the information about the project (description, objective and challenges, outputs, beneficiaries, impact, partners, life cycle, timeline, finances, project viability);
- **Optimal Scenario Map** showing growth planning and resilient development of Douala 4;
- **Phasing maps** illustrating the different phases of project implementation in the short, medium, and long term.

At the end of the symposium, participants filled out a satisfaction questionnaire allowing the UN-Habitat team to identify priority projects and themes that were of particular interest.

RESULTS OF THE COLLOQUIUM

Response rate

The UN-Habitat team registered about 40 participants in person and about 10 by videoconference. 27 participants filled out the satisfaction questionnaire which represents a response rate of 67.5 per cent, ensuring the representativeness of the different actors in the result analysis. More than 60 per cent of the participants were satisfied with the format of the symposium and the tools presented.

Themes of interest

The stakeholders have demonstrated their interest in all the themes presented during the symposium with a very high interest in the mobility theme (66.7 per cent) and basic infrastructure theme (63 per cent). The other themes received a similar rate ranging from 37 per cent to 44.4 per cent - the economic development theme being the one with the lowest interest rate.

Regarding the list of priority projects resulting from the matrix, some of them such as the local economic development programme did not raise much interest. On the other hand, the participants have pointed out

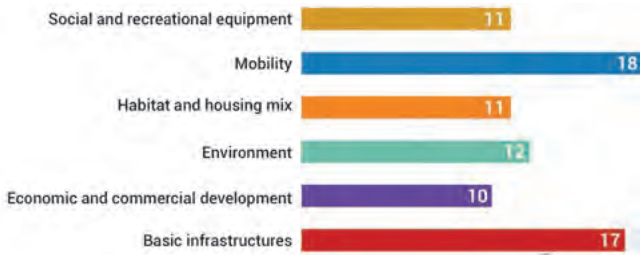


Fig. 11 Themes of interest / Source: UN-Habitat

projects considered as non-priority to be implemented urgently (housing and social and recreational equipment).

Projects of interest

Looking at the figure below, project n°1 (improvement of the water and sewerage network) and n°4 (improvement of the road network) stand out with an interest rate higher than 60 per cent. The mobility and basic infrastructure programmes have obtained an interest rate of over 60 per cent.

Stakeholders also underlined a strong interest in the project related to the solid waste management system (59.3 per cent) as well as the urban renewal programme (51.9 per cent).

The priority project n°7 related to the development of Information and Communication Technologies (ICTs) does not seem to have attracted the attention of the participants. Only 11 per cent of the participants showed interest in this project. ICTs project should be

considered as a cross-cutting component of the other six priority projects. It can easily be integrated into all these projects and bring a very significant added value.

In addition to these pre-identified projects, stakeholders suggested several interventions:

- **Land planning:** searching for available land plots, securing communal land, and resolving land conflicts. However, the resolution of land conflicts begins with land reform at the national level.
- **Economic integration of IDPs:** development of an economic integration and empowerment programme for IDPs. A project that focuses only on IDPs could create tensions with the host community, which may feel slighted in its territory. Nevertheless, all the listed projects aim to improve living conditions for IDPs.
- **Governance:** Capacity building of the subdivision in project implementation, projects on empowerment of vulnerable populations and entrepreneurship. These projects can be a component of each priority project aimed at training municipal staff. Projects aimed at empowering vulnerable populations will be integrated directly into economic development and health projects as a focus of intervention.

The symposium succeeded in attracting the interest of nearly 77 per cent of the participants to support the implementation of at least one priority project.

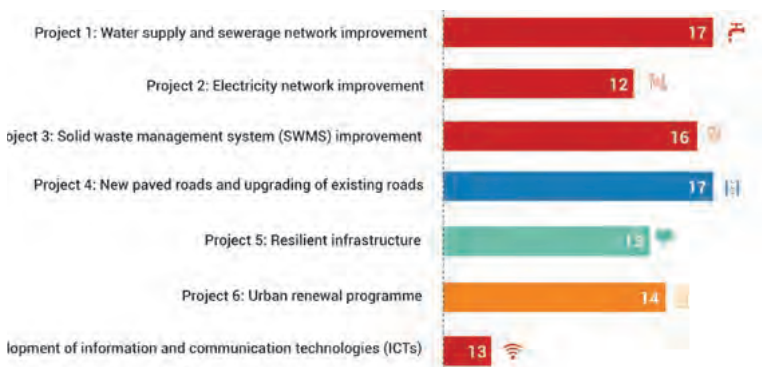


Fig. 12 Projects of interest / Source: UN-Habitat

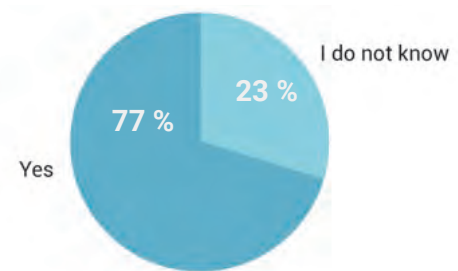


Fig. 13 Percentage of interest in the implementation of priority projects / Source: UN-Habitat



CONCLUSION

The colloquium on the "Presentation of priority urban projects in Douala 4, for a resilient municipality in the future Douala Metropolis", has underlined four projects of high interest among the identified priority projects:

- **Improvement of the water supply and sewerage network improvement;**
- **Improvement of the road network;**
- **Solid waste management system;**
- **Urban renewal programme.**

Based on the results of the event, the UN-Habitat team in close collaboration with the subdivision of Douala 4 and the city of Douala improved the approach strategy and organised bilateral meetings with private and public donors.

This step will be preceded by the finalisation of the action plan of the optimal scenario.

04

THE BLUEPRINT FOR IMPLEMENTATION DOUALA 4 ACTION PLAN

Translating the Optimal Scenario into Catalytic Actions in Douala 4 Subdivision

PHASING

RATIONAL

Translating the strategic recommendations proposed in the optimal scenario into implementable actions has led to a detailed action plan that tackle identified challenges in the spatial profile.

This action plan is a tool, a roadmap for the municipality and will guide the municipality's interventions, enabling it to focus its budget accordingly, and other key stakeholders' actions. This document aims to help the coordination between the stakeholders to ensure the good implementation of the projects. It is **a tool to channel investments into priority areas to meet the urgent needs of both displaced and host communities**. For this reason, the action plan would need to be updated every year to ensure the most efficient and cost effective way to deliver the highest possible impact.

As mentioned earlier, 17 needed projects with a score above 65 have been highlighted. However, only the most mature projects were selected to be underlined. 12 priority projects have been further detailed into investments cards as they can be implemented within the short term phase (first five years) of the optimal scenario action plan to achieve the urban vision for Douala 4, except the last project (12) that will start after the achievement of the others:

- 1) Water supply and sewerage network improvement,
- 2) Electricity network improvement,
- 3) Solid waste management system (SWMS) project,
- 4) Development of information and communication technologies (ICTs),
- 5) Improvement of the road network,
- 6) Ecological restoration of mangrove swamps,
- 7) Digital solutions for climate action,
- 8) Extension and renovation of the drainage system,
- 9) Construction of hybrid dykes (including development of the Wouri banks public space),
- 10) Construction of parks with retention ponds,
- 11) Urban renewal programme: urban renovation projects,
- 12) Development of sustainable activities and eco-tourism.

The action plan builds on the interlinkages between the projects in terms of feasibility, timeline and available capacities. **The action plan phases all the projects**

listed in the optimal scenario and develops into more details the 12 priority projects.

The phasing is divided into three timeframes: short (0 - 2 years), medium (3 - 5 years) , and long term (beyond 5 years). Some projects will last for several years and will spread out of more than one timeframe.

- **Short term timeframe:** This category encompasses critical and high urgency projects written, such as basic infrastructure (water, electricity, waste collection, and ICTs), the improvement of the mobility network and the construction of new social facilities (education and health facilities). The projects written in yellow in the table next page are the priority projects. These projects must be implemented from zero to two years (included) as it is an urgent need and necessary to implement the medium and long term projects. Some projects can start from now because the municipality has the experience to manage these projects.
- **Medium term timeframe:** This category comprehends projects that require first the improvement of basic infrastructure and accessibility (housing), and other less urgent projects such as the development of the green corridor. These actions must be taken infrom three to five years. The priority projects are indicated in pink in the table next page.
- **Long term timeframe:** This category includes both high and low priority long-lasting projects. Many projects will continue after five years of implementation, such as housing and capacity building projects, and others will start beyond five years. For instance, intermodal hubs and communal mini-bus services will be implemented after the construction of new roads, upgraded bus line and the extension of the electricity network. The priority projects are indicated in blue in the table next page.

In each timeframe, projects are classified into six thematic categories:

- Basic infrastructure
- Environment
- Social and recreational equipment
- Economic development
- Housing
- Mobility

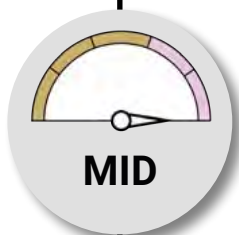
In the next section, all the projects will be localised and phased in the next five years and the 12 priority projects will be detailed into concrete actions.

**TOWARDS DOUALA 4 SUBDIVISION OPTIMAL SCENARIO
ACTION PLAN (5 YEARS AND BEYOND)**



SHORT TERM PHASE (0 - 2 YEARS)

- Water supply and sewerage network improvement
- Electricity network improvement
- Solid waste management system (SWMS) project
- Development of information and communication technologies (ICTs)
- Improvement of the road network
- Bus line upgrading
- Ecological restoration of mangrove swamps
- Digital solutions for climate action
- Extension and renovation of the drainage system
- Construction of hybrid dykes and development of the Wouri riverbanks
- Urban renewal programme
- Vertical densification of public land along the main roads
- Autonomous Port of Douala (PAD)
- Local economic development (LED) of Douala 4
- Creation of IDPs reception centres
- Creation of health centres and mobile medical units
- Primary schools and kindergarten creation and upgrading
- Bilingual Mambanda high school relocalisation and upgrading
- Information, education and communications services for health, education promotion and environmental awareness
- Improvement of the subdivision's capacity to design, plan and implement social programmes and to monitor the effect of such programmes
- Technical assistance for the coordination of actors (ad hoc organisation) / trainings of local technical staff



MID TERM PHASE (3 - 5 YEARS)

- Electricity network improvement
- Solid waste management system (SWMS) project
- Development of information and communication technologies (ICTs)
- Improvement of the road network
- Green corridor for pedestrian / cycle track network
- Extension and renovation of the drainage system
- Construction of dykes
- Construction of parks with retention ponds
- Housing development and upgrading
- Vertical densification of public land along the main roads
- Urban renewal programme
- Local economic development (LED) of Douala 4
- Community, cultural centres and libraries development
- Recreational and sport projects
- Transformation of Mambanda's CMA into an hospital
- Creation of health centres and mobile medical units
- Vita trail
- GIS portal implementation
- Information, education and communications services for health, education promotion and environmental awareness
- Improvement of the subdivision's capacity to design, plan and implement social programmes and to monitor the effect of such programmes
- Technical assistance for the coordination of actors (ad hoc organisation) / trainings of local technical staff
- New technologies of information and communication (NTIC)







LONG TERM PHASE (BEYOND 5 YEARS)

- Intermodal hub / urban integration
- Communal mini-bus services development
- River shuttle service development / Piers and landing stages construction
- Urban agriculture
- Public space
- Development of sustainable activities and eco-tourism
- Community, cultural centres and libraries development
- Recreational and sport projects
- GIS portal implementation
- Online exchange platform, newsletters
- Technical assistance for the coordination of actors (ad hoc organisation) / trainings of local technical staff



OPTIMAL SCENARIO OF DOUALA 4 SUBDIVISION

GLOBAL PHASING OF THE 40 DEVELOPMENT PROJECTS

THEME	PROJECT	YEAR 0	YE
	Water supply and sewerage network improvement		
	Electricity network improvement		
	Solid waste management system (SWMS) project		
	Development of information and communication technologies (ICTs)		
	New paved roads and upgrading of existing roads		
	Bus line upgrading		
	Ecological restoration of mangrove swamps		
	Digital solutions for climate action		
	Extension and renovation of the drainage system		
	Construction of hybrid dykes		
	Land tenure security (pooling of land titles and production of common land titles)		
	Vertical densification along the main axis		
	Creation of health centres and mobile medical units		
	Creation of IDPs reception centres (<i>outside of the perimeter of renewal projects</i>)		
	Primary schools and kindergarten creation and upgrading (<i>outside of the perimeter of renewal projects</i>)		
	Bilingual Mambanda high school relocalisation and upgrading		
	Autonomous Port of Douala (PAD)		
	Market hall		
	Local economic development (LED) of Douala 4		
	Information, education and communications services for health, education promotion and environmental awareness		
	Improvement of the subdivision's capacity to design, plan and implement social programs and to monitor the effect of such programmes		
	Technical assistance for the coordination of actors (ad hoc organisation) / trainings of local technical staff		
	Zoning map		
	GIS implementation		
	Green corridor for pedestrian / cycle track network		
	Construction of parks with retention ponds		
	Housing development and upgrading		
	Urban renewal programme		
	Community, cultural centres, and libraries development		
	Creation of a tourism office and art center		
	Recreational and sport projects		
	Transformation of Mambanda's CMA into an hospital		
	Vita trail		
	Development of sustainable activities and eco-tourism		
	Intermodal hub / Urban integration		
	Communal mini-bus services		
	River shuttle service development / Piers and landing stages construction		
	Urban agriculture		
	Public space		
	Online exchange platform, newsletters		

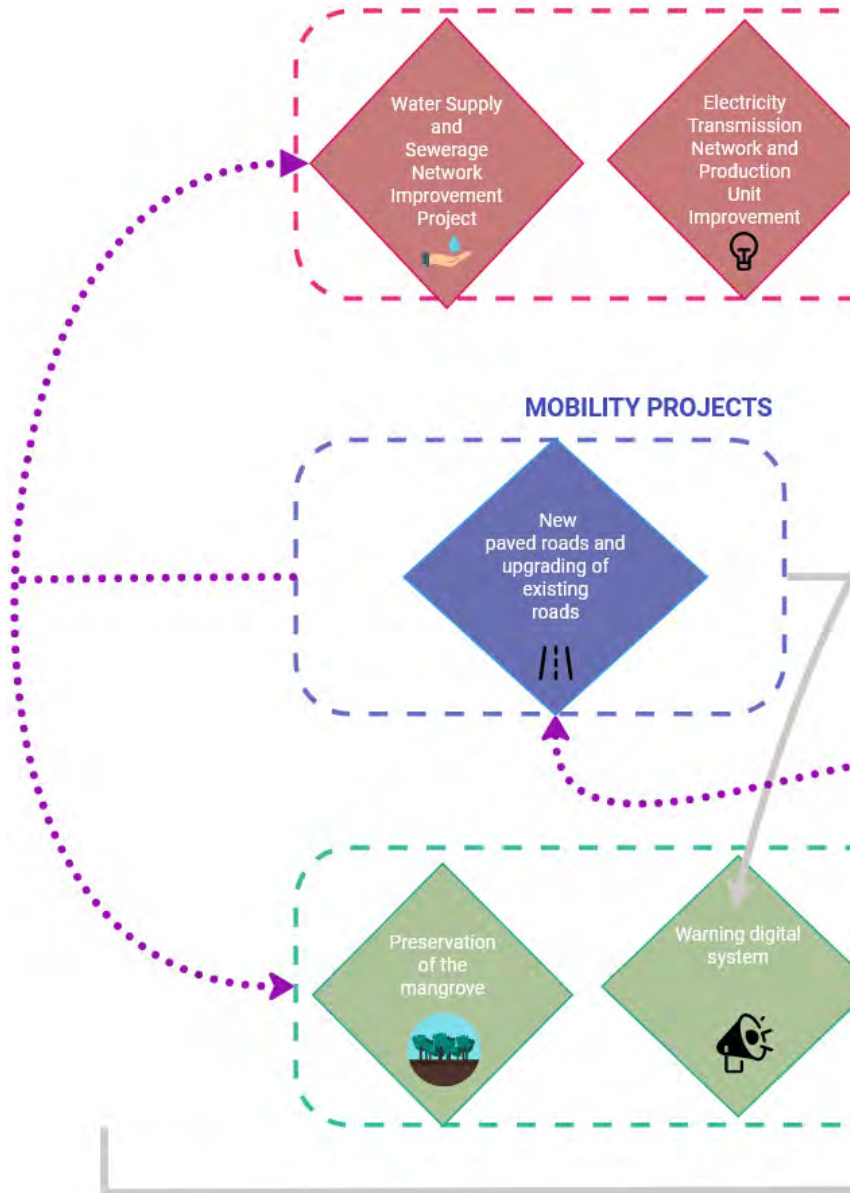
 Basic infrastructure
  Environment
  Social and recreational equipment
  Housing
  Mobility
  Economic and commercial development

 Priority project

INTERLINKAGES BETWEEN THE 12 PRIORITY PROJECTS

- Basic infrastructure
 - Housing
 - Environment
 - Mobility
 - Social and recreational equipment
 - Economic and commercial development
- Implementation of the project dependent on another project
- Implementation of the project at the same time to another one

The projects identified can be interdependent in their implementation to ensure efficiency, and financial and operational optimization. Basic infrastructure projects are the foundation for other priority projects. The road and basic infrastructure projects, as well as the resilient infrastructure and housing projects can be carried out simultaneously.



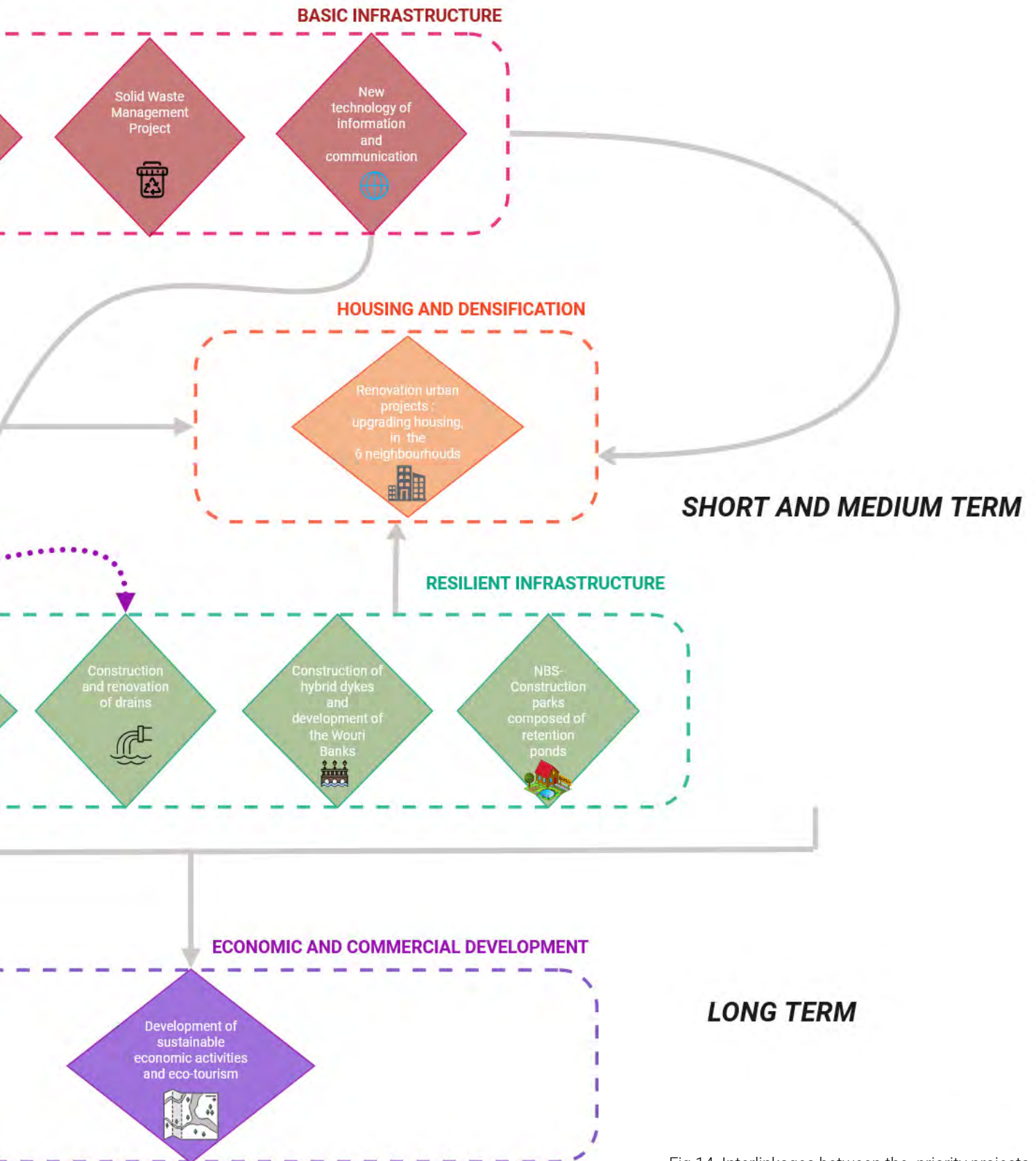


Fig 14. Interlinkages between the priority projects
Source: UN-Habitat

I. Short-Term Phase (0 - 2 years included)

The short-term phase grasps the most urgent and mature priority projects required to achieve the optimal scenario which will benefit both displaced and host communities. Moreover, the municipality of Douala 4 has enough experience in basic infrastructure and road network projects to prepare the implementation phase from the current year. These projects are classified in thematic programmes.

These projects include:











- **Basic infrastructure** (water, electricity, waste collection, and ICTs).
- **Mobility projects** (new roads and upgrading of the existing network and the upgrading of the existing bus line).
- **Resilient infrastructure** (restoration of mangrove swamps, digital solutions for climate action, construction of drains and dykes and development of the Wouri riverbanks).
- **Social equipments** (education, health facilities and

IDPs reception centres)

- **Economic and commercial projects** (Autonomous port of Douala and the economic and commercial development of the subdivision).
- **Housing projects** (vertical densification, housing development and upgrading, and urban renewal programme).
- **Capacity building projects.**

This section only covers the actions for the implementation of priority projects of the short-term phase (basic infrastructure, mobility projects, resilient infrastructure, housing development and upgrading) while the phasing maps localised all the needed projects.

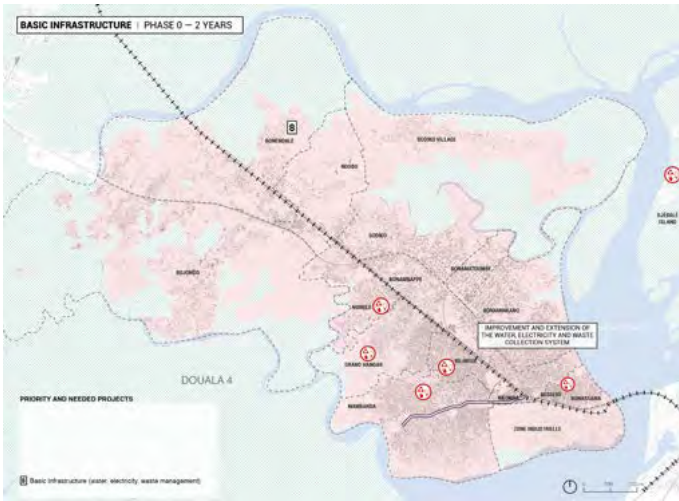
Spatial and time overlaps between projects aim to make best use of the available resources, capacities and competencies of Douala 4 to ensure cost effectiveness, efficiency and maximise the impact of the above mentioned projects.

THEME	PROJECT	TIMEFRAME			
		YEAR 0	YEAR 1	YEAR 2	YEAR 3
	Water supply and sewerage network improvement				
	Electricity network improvement				
	Solid waste management system (SWMS) project				
	Development of information and communication technologies (ICTs)				
	New paved roads and upgrading of existing roads				
	Bus line upgrading				
	Ecological restoration of mangrove swamps				
	Digital solutions for climate action				
	Extension and renovation of drainage system				
	Construction of hybrid dykes				
	Creation of health centres and mobile medical units				
	Creation of IDPs reception centres				
	Primary schools and kindergarten creation and upgrading				
	Bilingual Mambanda high school relocalisation and upgrading				
	Autonomous Port of Douala (PAD)				
	Market hall				
	Local economic development (LED) of Douala 4				
	Information, education and communications services for health, education promotion and environmental awareness				
	Improvement of the subdivision's capacity to design, plan and implement social programs and to monitor the effect of such programmes				
	Technical assistance for the coordination of actors (ad hoc organisation) / trainings of local technical staff				
	Zoning map				
	GIS implementation				
	Vertical densification along the main axis				
	Housing development and upgrading				
	Urban renewal programme				

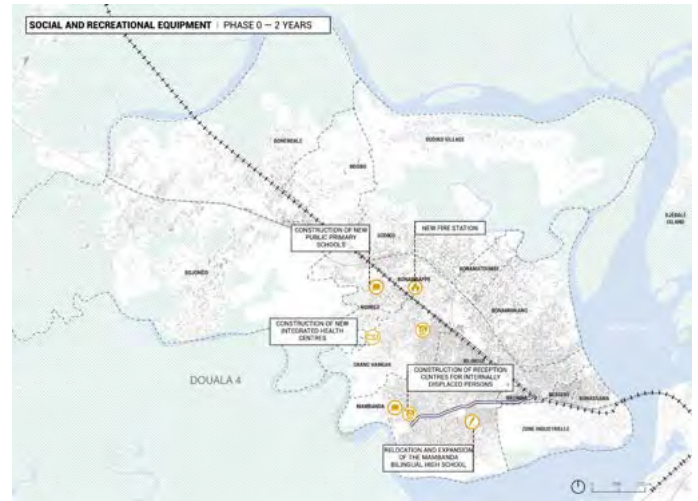
	Basic infrastructure		Environment		Social and recreational equipment
	Housing		Mobility		Economic and commercial development



Table 6. Short-term phasing projects
Source: UN-Habitat



Map 16. Basic infrastructure short-term projects



Map 17. Social and recreational short-term projects



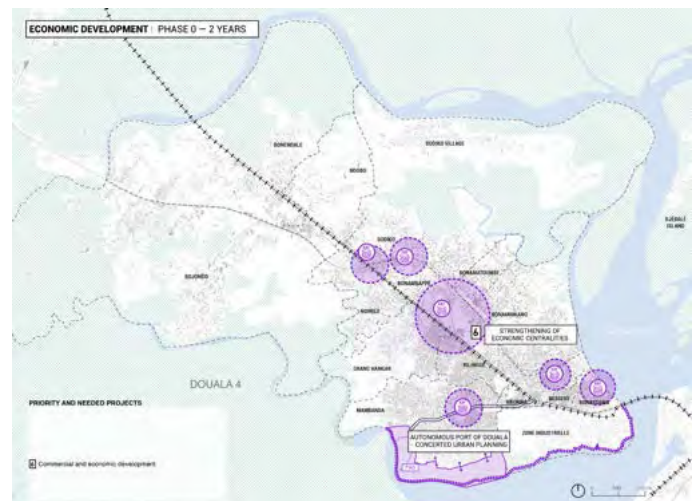
Map 18. Mobility short-term projects



Map 19. Housing short-term projects



Map 20. Environment short-term projects



Map 21. Economic Development short-term projects

Actions for 0 - 2 years

The upgrading and extension of basic services (water, electricity, waste management, and ICTs) in critical areas should go hand in hand with the extension and improvement of the mobility network and the construction of drains. The feasibility study must comprehend this package of projects to ensure cost and time effectiveness of the work construction.

The location of the new bus stations should be identified prior to the construction of the new roads to be linked to the electricity and ICTs networks. The improvement of the various networks will take into account other related city-wide projects, such as the tramway line and its integration into the urban fabric.

The good implementation of both basic infrastructure and mobility projects will enable the start of various housing projects in the next step: vertical densification along the structuring axis, housing development and upgrading. Moreover, the strengthening of basic infrastructure will be linked to the construction of dykes to reduce the risks of flooding and the development of the Wouri banks (hybrid spaces).

The development of a warning digital system to inform people of natural hazards need to be implemented simultaneously with the ICT system.

The restoration et preservation of mangrove swamps will participate in the promotion of good living conditions in Douala 4 and will benefit the renewal projects of the six informal neighbourhoods by creating a resilient environment for all.

This set of projects will improve the living conditions of both host and displaced communities by creating a lively, resilient, and secure environment day and night, participating in the protection of the environment and residents' health and wellbeing. The development of economic programmes will create job opportunities for all, diversify the local economy and reduce poverty.

LEGEND

Transportation	Administrative boundaries
— Primary road	- - - Neighbourhoods
— Secondary road	Natural system
+++ Railway	Waterway
	Natural area (no constructions)

PHASE 0 — 2 YEARS

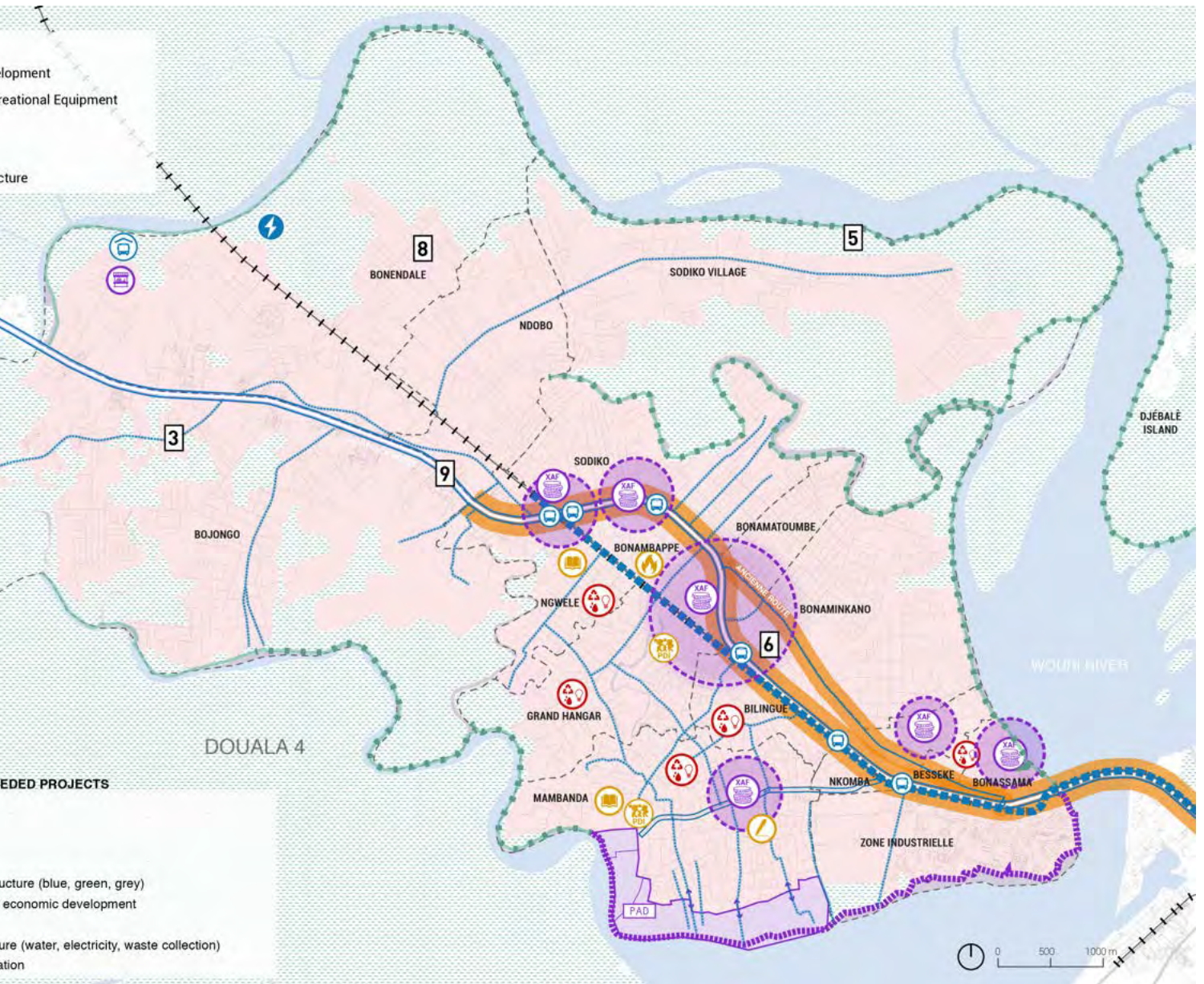
Basic Infrastructure	Basic Infrastructure (water, electricity, waste collection)
Social and Recreational Equipment	Reception centre for IDPs
	Relocalisation and upgrading of the Mambanda bilingual high school
	New public primary school
	New integrated health centre (CSI)
	Fire station
Mobility	New asphalted roads and upgrading of the existing road network
	Upgrading of the existing bus line
	New regional bus station
	Development of the new tramway line
	Power station for the tramway
Environment	Hybrid dykes
	Development of the Wouri banks
	Protection and restoration of natural spaces (mangroves, forest areas)
Economic Development	Commercial and economic development
	Autonomous port of Douala (concerted urban planning)
	Development of the banks of the port and the industrial zone
	Market hall
Habitat	Vertical densification
	Urban renewal
	Habitat improvement and construction of new housing units



YEAR 0

Identify the available resources and capacities of Douala 4 for the implementation of the basic infrastructure, mobility and housing projects and resilient infrastructure, by conducting the assessment of the budget of Douala 4 and the CUD to evaluate the funds available.

Based on this financial analysis, the next step will be to mobilise resources from interested investors. Mandate entrusted to a technical design office (BET).



Map 22. Short-term actions / Source: UN-Habitat

YEAR 1

YEAR 2

Conduct the feasibility study by a BET in the different neighbourhoods regarding all the priority projects and conduct a local economy mapping and analysis for the local economic development of Douala 4.

Develop the concept and detailed designs by a BET for the water and sewerage network, electricity network, ICTs, sewerage and waste collection system, drains, road and sidewalk infrastructure, bus line, construction of dykes, development of the Wouri riverbanks and warning digital solutions.

Prepare the construction RFP to hold the bidding process and select the contractors.

Launch the RFP for the construction of all these projects.

Contract a company and implement the construction work.

OVERVIEW OF THE SHORT-TERM ACTIONS



WATER SUPPLY AND SEWERAGE NETWORK IMPROVEMENT

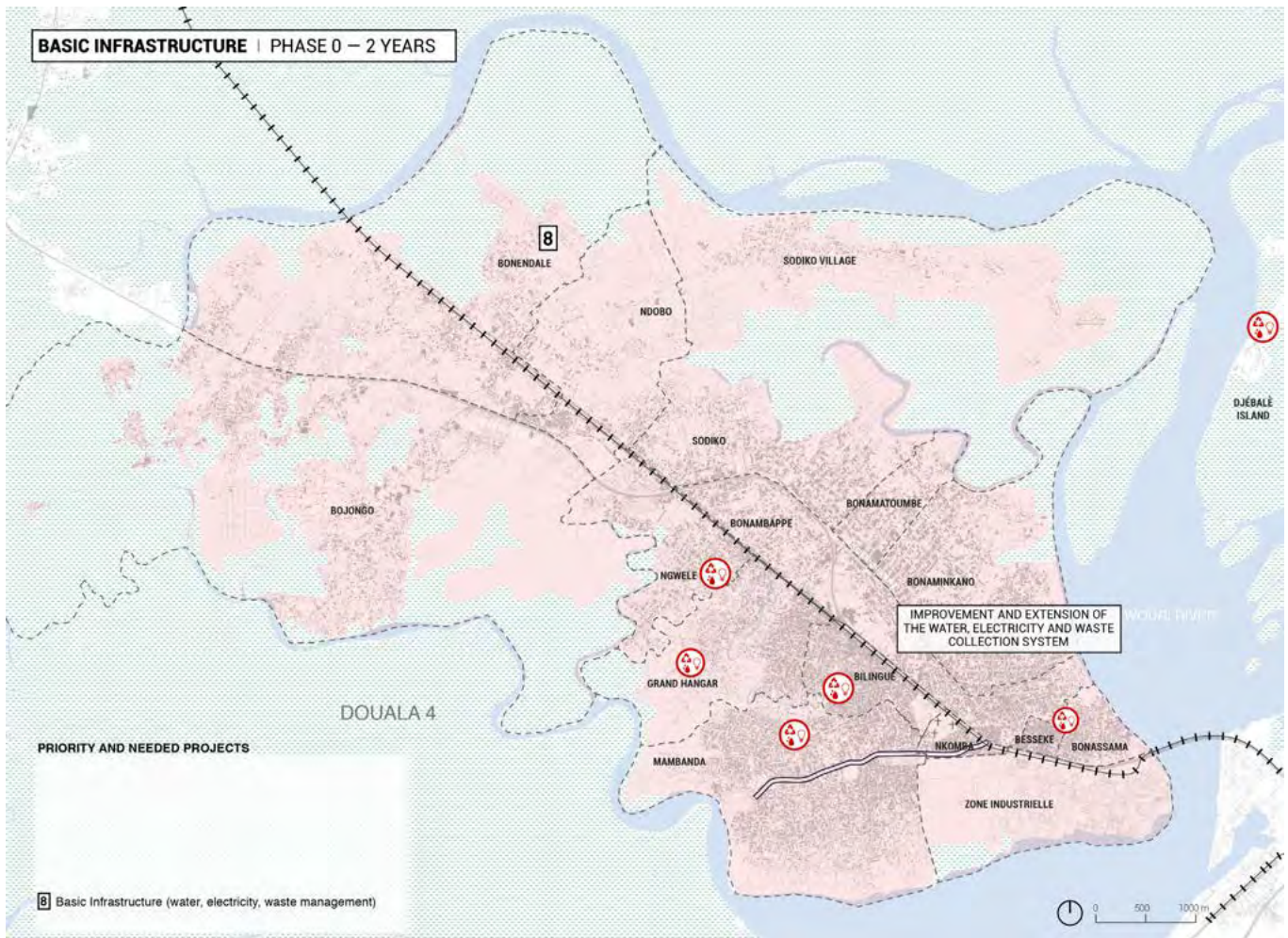
Short Term Actions

- Develop temporary public water fountains in areas currently without access to drinking water.
- Develop temporary water points to ensure access to drinking water during construction work.

	Actions	Year 0	Year 1	Year 2
01	Preliminary design and cost-benefit analysis (engineering and environmental studies).			
02	Prepare the project budget for the upgrading of the existing water network and its extension in the informal settlements.			
03	Prepare the Design RFP for the bidding process and announcing the bid. The RFP must include conducting a detailed technical assessment, identify needed pipe's specifications including pipe diameter and material for the upgrading/extension of the water and sewerage existing networks, developing the design, and preparing the construction RFP.			
04	Hold the bid evaluation and selection; Contract negotiation and awarding.			
05	Technical assessment and studies.			
06	Implementation of the construction work.			

Project Partners

- **Owner and implementer:** CAMWATER (Cameroon Water Utilities Corporation) and the CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



Map 23. Basic infrastructure short-term projects
Source: UN-Habitat

Objective

The project aims to improve the efficiency of the existing water supply and sewerage network and to urgently extend and develop drinking water pipe networks in the identified critical areas of Douala 4 without access to drinking water.

Impact and Beneficiaries

The scope of the project is to improve access to drinking water for both host and displaced communities in Douala 4 (433,500 residents) with a focus on 290,445 residents i.e., 67 per cent of the local population of Douala 4 (UPIMC, 2021) living in informal settlements. The project will directly improve the living conditions and the livelihoods of residents of Douala 4 by providing secure and reliable access to drinking water, ensuring a reliable supply of clean water, and developing sustainable water sources.

This project will participate directly in the reduction of urban poverty (SDG 1) and the promotion of well-being (SDG 3) by ensuring secure, affordable, and sustainable access to drinking water for all (SDG 6), contributing to the promotion of an inclusive, safe, resilient, and sustainable subdivision (SDG 11).



ELECTRICITY NETWORK IMPROVEMENT

Short Term Actions

- Develop temporary public lighting in areas currently without access to the electricity grid.

	Actions	Year 0	Year 1	Year 2
01	Preliminary design and cost-benefit analysis (engineering and environmental studies).			
02	Prepare the project budget for the improvement of the existing electricity network and its extension in the informal settlements.			
03	Prepare the Design RFP for the bidding process and announcing the bid. The RFP must include conducting a detailed technical assessment, identify needed power lines' specifications for the the improvement of the existing electricity network and its extension, developing the design, and preparing the construction RFP.			
04	Hold the bid evaluation and selection; Contract negotiation and awarding.			
05	Technical assessment and studies.			
06	Implementation of the construction work.			

Project Partners

- **Owner and implementer:** ENEO (energy company of Cameroon) and the CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.

Objective

The project aims to improve the efficiency and reliability of the electricity transmission network, production unit, and system management and support Douala 4 in ensuring adequate electricity supply.

Impact and Beneficiaries

The goal of this 5-year project is to reduce the number of people suffering from cutting power by ensuring an affordable and reliable access to electricity supply (SDG 7). This project will benefit the total population of Douala 4 (433,500 residents) with a focus on 290,445 residents i.e., 67 per cent of the local population of Douala 4 (UPIMC, 2021) including 23,070 IDPs, i.e., households currently without formal access to the electricity grid.

The improvement of the transmission electricity network will prevent the use of polluting fuels, reduce air pollution,

and promote the well-being for both host and displaced communities (SDG 3). It is a step forward to develop renewable and clean energy in the coming years (solar, biogas, SDG 13).

The expansion of the street lighting network across Douala 4 will promote social inclusivity and community building, creating a secure and lively environment day and night. The inclusion of girls and women in public space will directly promote gender equality and women's empowerment (SDG 5, 10). This project is a powerful social tool that will foster social inclusivity between host and displaced communities.

The building of transmission infrastructure will also generate economic activity for the implementer and subcontractors, and local communities.



SOLID WASTE MANAGEMENT SYSTEM (SWMS) PROJECT

Short Term Actions

- **Raising awareness:** Develop and implement outreach programmes and campaigns to improve communities awareness and participation.
- **Temporary waste collection points:** Develop temporary waste collection points to gradually change inhabitants’ habits and include the participation of the residents.

	Actions	Year 0	Year 1	Year 2
01	Waste audit (identify type of waste, volume, waste streams, targets for waste reduction).and create a waste management action plan.			
02	Preliminary design and cost-benefit analysis (engineering and environmental studies, (assess current waste collection practices, identify recyclable, designate space allocated for waste management).			
03	Prepare the Design RFP for the bidding process and announcing the bid. The RFP must include conducting a detailed technical assessment, identifying needed local capacities (staff, trainings), number of collection points and material necessary (containers, trucks, bins, waste disposal, etc.), developing the design, and preparing the construction RFP.			
04	Hold the bid evaluation and selection; Contract negotiation and awarding.			
05	Technical assessment and studies.			
06	Implementation of the action plan.			

Project Partners

- **Owner and implementer:** HYSACAM (Cameroon Public Sanitation Company) and the CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.

Objective

The project aims to improve the SWM system of Douala 4 to provide a hygienic and healthy environment to all residents, protect natural areas and change the culture of waste handling.

Impact and Beneficiaries

The project will ensure Douala 4 self-sufficiency in solid waste management. This will directly participate in the protection of the environment (SDG 13) and residents’ health and wellbeing (SDG 3) through effective waste management measures. Indeed, this project will prevent contaminating water, spread of diseases, and reduce risks of flooding (SDG 6).

These interventions will offer a more secure and resilient urban environment to all residents. It will likely create new jobs for local populations within waste services, recycling, and recovery sectors in Douala 4. It is also a great opportunity to create partnerships between formal and informal sectors. Eventually, this project will improve the living conditions of Douala 4 while fostering its local economy and promoting social inclusivity.



DEVELOPMENT OF OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTs)

	Actions	Year 0	Year 1	Year 2
01	Preliminary design and cost-benefit analysis (engineering and environmental studies).			
02	Prepared the project budget for the implementation of the NTIC.			
03	Prepare the Design RFP for the bidding process and announcing the bid. The RFP must include conducting a detailed technical assessment, identifying required technologies and material (hardware, optical fiber, radio, TV, etc.), developing the design, and preparing the construction RFP.			
04	Hold the bid evaluation and selection; Contract negotiation and awarding.			
05	Technical assessment and studies.			
06	Implementation of the construction work.			

Project Partners

- **Owner and implementer:** CAMTEL and the CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.

Objective

The project aims to improve access to effective and affordable information and communication technologies (ICTs) services, to strengthen the economic and residential attractiveness of Douala 4, the legal, regulatory and institutional framework for developing ICTs accessibility and to develop local capacity for ICTs management.

Impact and Beneficiaries

Improving access to efficient and affordable ICTs will promote local economic development in Douala 4 (SDG 8) and also strengthen institutions (SDG 16). It will stimulate innovation and entrepreneurship, increase productivity, facilitate linkages between local, regional and international markets and provide access to new technologies. The project will improve communication facilities at the household level. This will reduce social inequalities (SDG 10) and facilitate access to online services that are not available in the area (education programmes, government applications, etc.).

The improvement of ICTs will also improve access to the internet and telephone communications for businesses and shops in Douala 4, thus reducing the territorial divide.

NEW PAVED ROADS AND UPGRADING OF EXISTING ROADS

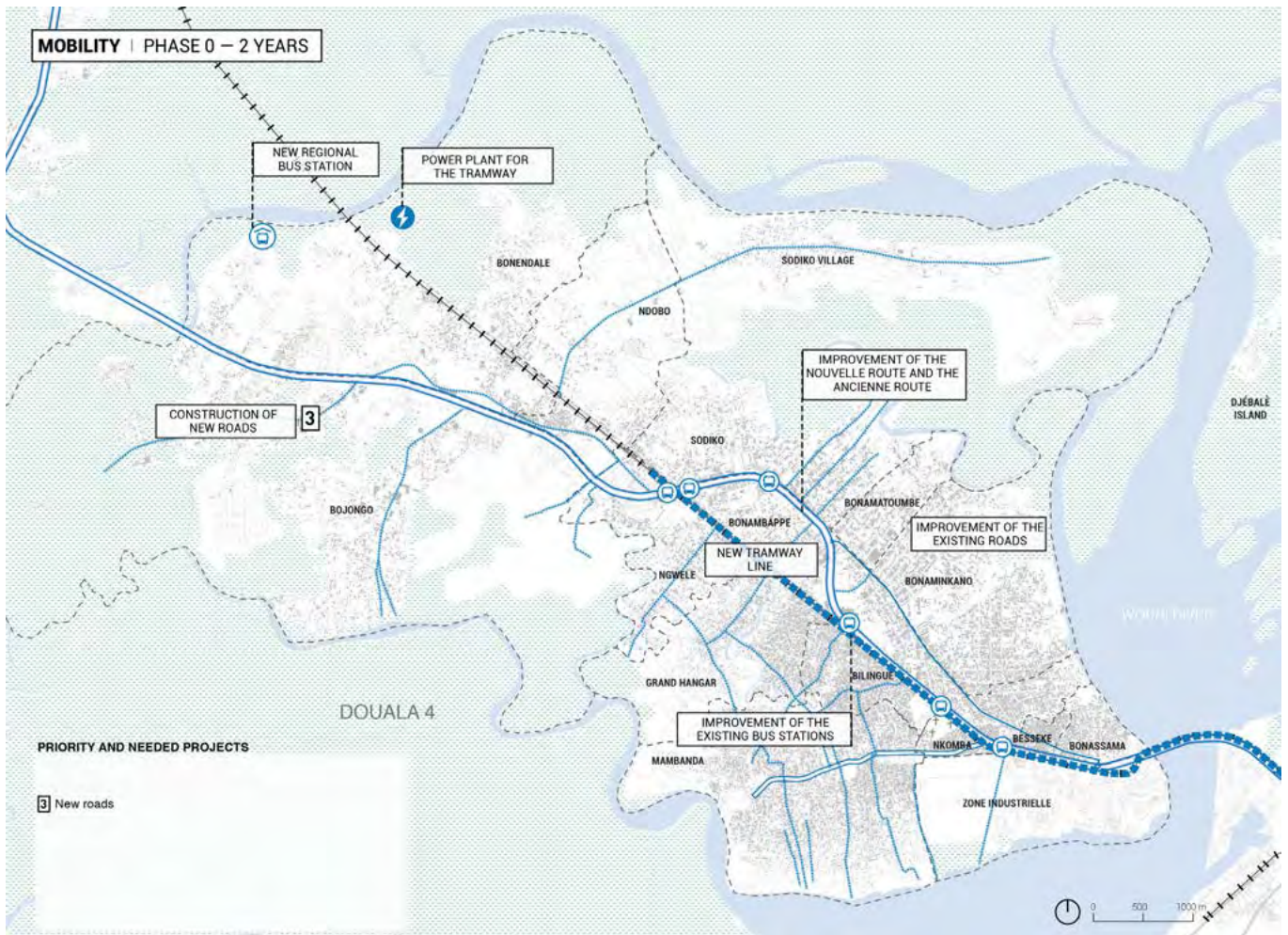
Short Term Actions

- Testing new roads with temporary signage before work construction to start.
- Improving the signage for directions, sidewalks and pedestrian crossings

	Actions	Year 0	Year 1	Year 2
01	Preliminary design and cost-benefit analysis (<i>assessing the current and future traffic patterns, (road condition evaluation, pavement conditions assessment, safety and traffic control equipment survey, etc, engineering and environmental studies).</i>)			
02	Prepare the project budget for the improvement of the road network and its extension in the critical areas in each neighbourhood (<i>including the improvement and construction of new roads, sidewalks, diversification of the modes of transportation, bicycle paths, tree planting).</i>)			
03	Prepare the Design RFP for the bidding process and announcing the bid. The RFP must include conducting a detailed technical assessment in each neighbourhood, identifying road/sidewalk surfaces' specifications (primary, secondary, tertiary) including, social and environmental studies, permeable coating in areas with high flood risks, developing the design and planning.			
04	Hold the bid evaluation and selection; Contract negotiation and awarding.			
05	Technical assessment and studies.			
06	Implementation of the construction work.			

Project Partners

- **Owner and implementer:** CUD and CAD 4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINTRANSPORTS, and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



Map 24. Mobility short term projects
Source: UN-Habitat

Objective

The project aims to meet the mobility needs, improve the road network connecting residential areas, economic centralities and strategic social facilities, to diversify non-motorised means of transport to the residents (bicycles, pedestrian) and to participate in the decongestion of the subdivision. It will ensure the connection within Douala 4 and with the other subdivisions of Douala to support its attractiveness and meet the needs by 2030.

The subdivision of Douala 4 and local communities emphasised the urgent need to asphalt and to renovate the road network. The project will develop an organised network that will unlock neighbourhoods characterised by informal settlements where displaced people and vulnerable populations live (SDG 3 and 5). The intervention will improve mobility, living conditions, and access

to job opportunities and social equipment within and outside the subdivision, reducing poverty and inequalities (SDGs 1, 8, 10, 11).

The improvement of road network needs to be permanent and aligned with the other projects. The development of new types of soft mobility, such as bicycles, will strive to create new city-wide partnerships (SDG 17).



ECOLOGICAL RESTORATION OF MANGROVE SWAMPS

	Actions	Year 0	Year 1	Year 2
01	Assessment of on-site conditions: Understanding the autecology (individual species ecology) of the mangrove species at the site Understanding the normal hydrologic patterns that control the distribution and successful establishment and growth of targeted mangrove species / Assessing modifications of the original mangrove environment that currently prevent natural secondary succession (recovery after damage).			
02	Initiating a Preservation/Rehabilitation Programme and Partnerships (recognition and common understanding of the degradation, stakeholders and local communities' involvement).			
03	Develop a restoration plan for active restoration including hydrological rehabilitation (reforestation if necessary and possible) with the participation of local stakeholders and inhabitants and monitoring for at least 5 years.			
04	Prepare the project budget for the restoration of mangrove swamps in the critical areas.			
05	Prepare the Design RFP for the bidding process and announcing the bid. The RFP must include conducting a detailed technical assessment, identifying the required capacities (staff, trainings), material (seedling production), techniques used, and site accessibility, developing the design and planning.			
06	Hold the bid evaluation and selection; Contract negotiation and awarding.			
07	Conduct a detailed technical assessment for each site (custom-tailored solutions). Prepare and finalize the detailed design drawings and planning.			
08	Prepare and hold the bid evaluation and selection; Contract negotiation and awarding.			
09	Implementation of the protection and restoration work.			

Project Partners

- **Owner and implementer:** CUD and CAD 4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINEP, and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.

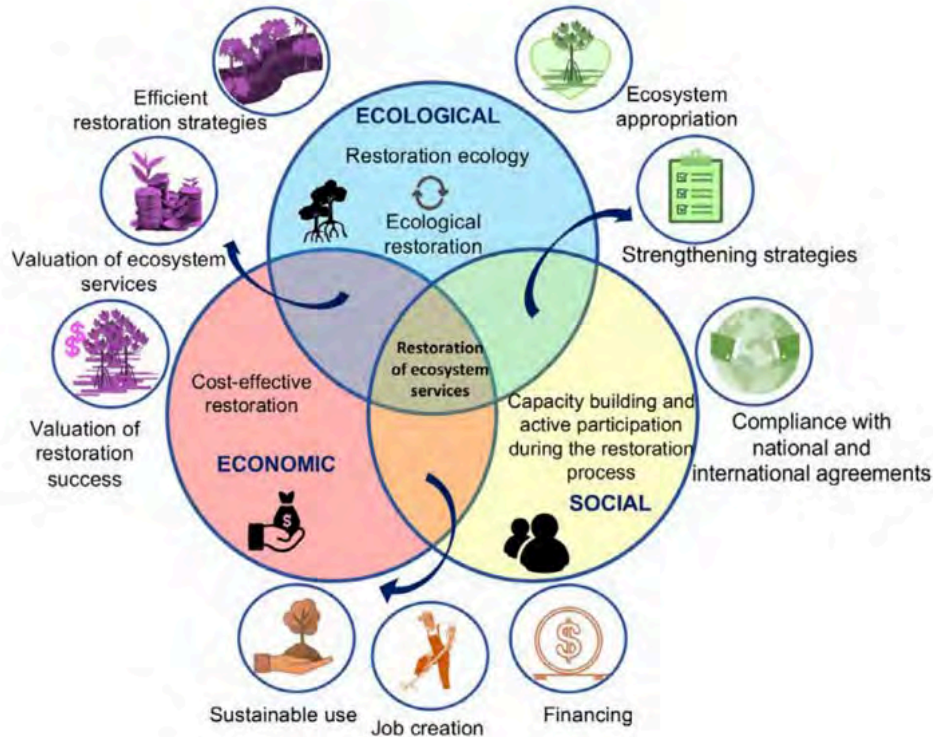


Fig. 15 Importance of integrating ecological, social, and economic components throughout the ecological restoration process.

Source: Teutli Hernández, C., et al. (2020). Mangrove ecological restoration guide: Lessons learned, p.6.

Objective

The United Nations has declared **2021-2030 as the Decade of Ecological Restoration**. The project aims to actively protect and restore mangrove swamps of Douala 4 to address social challenges such as climate change mitigation and conserving biodiversity⁴.

Impact and Beneficiaries

The mangrove suffers from coastal erosion, increased sea level, deforestation, fires and agricultural with consequences on water resources that affect both the mangrove and the populations. This project will protect the coast, the populations and their quality of life (SDG 14,15).

The participation of local communities will ensure the sustainability of the project, pursuing social welfare and economic viability. However, mangrove restoration goes hand in hand with its protection. On the one hand, human activities on these natural areas must be regulated to protect mangrove swamps: it is also important to raise awareness among local populations of the importance of this ecosystem to ensure the sustainability of the project. On the other hand, the protection and restoration of the mangrove will participate in the protection of the physical environment and its populations by reducing the effects of flooding (SDG 13).



DIGITAL SOLUTION FOR CLIMATE ACTION

Short Term Actions

- Use different means of communication to disseminate information in real-time: social networks, radio

	Actions	Year 0	Year 1	Year 2
01	Preliminary design and cost-benefit analysis (assessment of the existing network, equipped neighbourhoods without/ with network, connection).			
02	Prepare the project budget for the creation of new network and its extension in the critical areas in each neighbourhood.			
03	Prepare the Design RFP for the bidding process and announce the bid. The RFP must include conducting a detailed technical assessment in each neighbourhood, identifying cable surfaces' specifications according to the local context.			
04	Hold the bid evaluation and selection; Contract negotiation and awarding.			
05	Technical assessment and studies.			
06	Implementation of the construction work.			

Project Partners

- **Owner and implementer:** CUD and CAD 4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CAD4, mobile operators, and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.

Objective

The project consists in relying on the extension and improvement of the NICT network to be able to broadcast alerts and real-time information on flood episodes and their consequences locally via telephone communication channels. The project will improve the living conditions of residents by informing them of potential risks and the state of the roads for the safety of their traffic and will inform residents about traffic.

Impact and Beneficiaries

During the various workshops, flood risks were mentioned as a priority to be addressed. Flood risks are concentrated mainly in informal settlements where housing is precarious and the healthcare system poor. The lives of the residents are threatened by these recurrent floods given the quality of the non-compliant infrastructure to withstand the floods and the inadequacy of the drainage network. The alert program is one of the communication tools to help people organize, beforehand to

minimize loss of life and collateral damage (SDG 3, 11). Radio, social networks, and the sending of text messages by mobile operators could complete the awareness-raising system. This project is the first step in a resilient infrastructure programme. It can be implemented quickly with the collaboration of the private sector.



EXTENSION AND RENOVATION OF THE DRAINAGE SYSTEM

Short Term Actions

- Cleaning once per month the existing drains
- Collecting waste at collection points near housing

	Actions	Year 0	Year 1	Year 2
01	Preliminary design and cost-benefit analysis (assessment of the existing network, identified the localization to equip neighbourhoods, engineering analysis).			
02	Prepare the project budget for the construction new and rehabilitation of drains.			
03	Prepare the Design RFP for the bidding process and announce the bid. The RFP must include conducting a detailed technical assessment in each neighbourhood, identifying drain surfaces' specifications according to the local context.			
04	Hold the bid evaluation and selection; Contract negotiation and awarding.			
05	Technical assessment and studies.			
06	Implementation of the construction work.			

Project Partners

- **Owner and implementer:** CUD and CAD 4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINEP, and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



Map 25: Extension and renovation of the drainage system by 2030.
Source: UN-Habitat, 2022

Objective

By 2030, several neighbourhoods are at risk of being below sea level and suffering from coastal erosion regarding mangrove deforestation. The construction of grey infrastructures is intended to dyke the effects of rising waters and reduce flooding in coastal neighbourhoods. The dikes design will have to include a hybrid and reversible aspect including walking itineraries and submersible green public spaces to make the coast permeable and accessible to residents.

Impact and Beneficiaries

The construction of a hybrid provides several functions: protection and recreation following flood cycles. The reflection on the multiplicity of functions and uses will make it possible to mitigate urban cuts and ensure access to the river by the residents (SDG 3, 11, 13, 15). The objective

is to stimulate an appropriation of the banks by changing the perception of hazards that the river can represent. Pedestrian routes and recreational areas (e.g gardens) will be able to enliven the rivers to diversify the activities developed. These spaces could be based on an architectural approach called *biomimicry* (SD3, 9).

The construction of these grey infrastructures will improve and secure the living conditions of the residents and offer them new public spaces to enjoy.

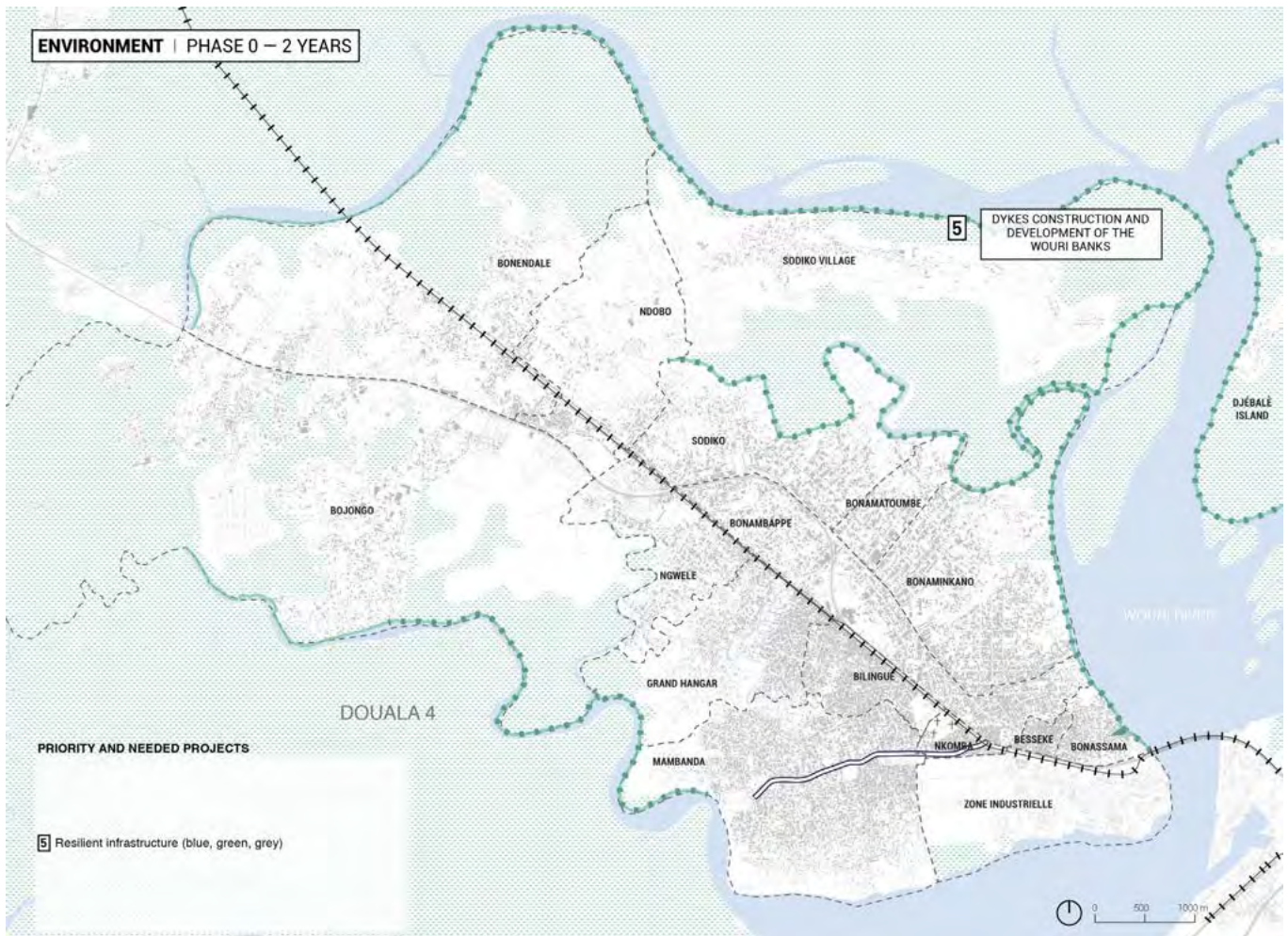


CONSTRUCTION OF HYBRID DYKES

	Actions	Year 0	Year 1	Year 2
01	Preliminary design and cost-benefit analysis (assessment of the length and width of the riverbanks and best recreational practices to develop).			
02	Prepare the project budget for the construction hybrid dykes.			
03	Prepare the Design RFP for the bidding process and announce the bid. The RFP must include conducting a detailed technical engineering assessment, environmental studies, land tenure and social study, and design public spaces).			
04	Hold the bid evaluation and selection; Contract negotiation and awarding.			
05	Technical assessment and studies.			
06	Implementation of the construction work.			

Project Partners

- **Owner and implementer:** CUD and CAD 4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINEP, and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



Map 26. Construction of dykes
Source: UN-Habitat

Objective

By 2030, several neighbourhoods are at risk of being below sea level and suffering from coastal erosion regarding mangrove deforestation. The construction of grey infrastructures is intended to dyke the effects of rising waters and reduce flooding in coastal neighbourhoods. The dikes design will have to include a hybrid and reversible aspect including walking itineraries and submersible green public spaces to make the coast permeable and accessible to residents.

Impact and Beneficiaries

The construction of a hybrid dykes provides both uses at the same time: protection and recreation following flood cycles. The reflection on the multiplicity of uses will make it possible to mitigate urban cuts and ensure access to the river by the residents (SDG 3, 11, 13, 15). The objective is to stimulate an appropriation of the banks by changing the perception of hazards that the river can represent. Pedestrian routes and recreational areas

(vegetable gardens, gardens) will be able to enliven the rivers to diversify the activities developed. These spaces will be based on an architectural approach to biomimicry (SD3, 9).

The construction of these grey infrastructures will improve and secure the living conditions of the residents and offer them new public spaces to enjoy.

Time Frame of the Short-Term Phase Actions

THEME	PRIORITY PROJECTS / ACTIONS	
	WATER SUPPLY AND SEWERAGE NETWORK	
	1,2,3,4	Preliminary design and cost-benefit analysis (engineering and environmental studies) and prepare the project budget and the design RFP for the bidding and hold the bid.
	5	Technical assessment and studies.
	6	Implementation of the construction work.
	ELECTRICITY NETWORK IMPROVEMENT	
	1,2,3,4	Preliminary design and cost-benefit analysis (engineering and environmental studies) and prepare the project budget and the design RFP for the bidding and hold the bid.
	5	Technical assessment and studies.
	6	Implementation of the construction work.
	SOLID WASTE MANAGEMENT SYSTEM	
	1	Waste audit (<i>identify type of waste, volume, waste streams, targets for waste reduction</i>). Create a waste management action plan.
	2,3,4	Preliminary design and cost-benefit analysis (engineering and environmental studies, (assess current waste collection practices, identify recyclable, designate space allocated for waste management) and prepare the design RFP. Hold the bid evaluation and selection of the company.
	5	Technical assessment and studies
	6	Implementation of the action plan.
	DEVELOPMENT OF INFORMATION AND COMMUNICATION SYSTEM	
	1,2,3,4	Preliminary design and cost-benefit analysis (engineering and environmental studies) and prepare the project budget and the design RFP for the bidding and hold the bid.
5	Technical assessment and studies.	
6	Implementation of the construction work.	
	NEW PAVED ROADS AND UPGRADING	
	1,2,3,4	Preliminary design and cost-benefit analysis (<i>assessing the current and future traffic patterns, (road condition evaluation, pavement conditions assessment, safety and traffic control equipment survey, etc, engineering and environmental studies)</i>) and prepare the design RFP for the bidding process. Hold the bid evaluation and selection of the company.
	5	Technical assessment and studies.
	ECOLOGICAL RESTORATION OF MANGROVE SWAMPS	
	1	Assessment of on-site conditions: <i>Understanding the autecology (individual species ecology) of the mangrove species at the site / Understanding the normal hydrologic patterns that control the distribution and successful establishment and growth of targeted mangrove species / Assessing modifications of the original mangrove environment that currently prevent natural secondary succession (recovery after damage).</i>
	2	Initiating a Preservation/Rehabilitation Programme and Partnerships (<i>recognition and common understanding of the degradation, stakeholders and local communities' involvement</i>).
	3	Develop a restoration plan for active restoration including hydrological rehabilitation (reforestation if necessary and possible) with the participation of local stakeholders and inhabitants and monitoring for at least 5 years.
	4,5,6	Prepare the project budget for the restoration of mangrove swamps in the critical areas and the design RFP. Hold the bid evaluation and selection.
	7	Conduct a detailed technical assessment for each site (<i>custom-tailored solutions</i>) and the design drawings and planning.
	8	Prepare the restoration RFP for the bidding process and announcing the bid. Hold the bid evaluation and selection.
	9	Implementation of the protection and restoration work.
	DIGITAL SOLUTIONS FOR CLIMATE RESILIENCE	
	1,2,3,4	Preliminary design and cost-benefit analysis (assessment of the existing network, equipped neighbourhoods without/ with network, connection) and prepare the design RFP for the bidding process. Hold the bid evaluation and selection.
	5	Technical assessment and studies.
	6	Implementation of the construction work.
	EXTENSION AND RENOVATION OF WATER SUPPLY NETWORK	
	1,2,3,4	Preliminary design and cost-benefit analysis (assessment of the existing network, identified the localization to equip neighbourhoods (engineering analysis)) and prepare the design RFP for the bidding process. Hold the bid evaluation and selection.
	5	Technical assessment and studies.
6	Implementation of the construction work.	
CONSTRUCTION OF HYBRID INFRASTRUCTURE		
1,2,3,4	Preliminary design and cost-benefit analysis (assessment of the length and width of the riverbanks and best recreational practices to develop) , environmental and social study, and prepare the design RFP for the bidding process. Hold the bid evaluation and selection.	
5	Technical assessment and studies.	
6	Implementation of the construction work.	
	URBAN RENEWAL PROJECT	
	1	Conduct urban studies including social and economic development.

	SHORT TERM PHASE			SDGs
	YEAR 0	YEAR 1	YEAR 2	
WORKS IMPROVEMENT				
RFP				
IMPROVEMENT				
RFP				
EM (SWMS) PROJECT				
ify				
UNICATION TECHNOLOGIES (ICTs)				
RFP				
ING OF EXISTING ROADS				
gn				
LANGROVE SWAMPS				
rove				
IMATE ACTION				
DRAINAGE SYSTEM				
BRID DYKES				
GRAMME				

Table 7. Timeframe of the short-term phasing projects
Source: UN-Habitat

II. Mid-Term Phase (3 - 5 years included)

The mid-term phase concerns several programmes that build on projects started or carried out in the short-term phase. Basic infrastructure projects, road network extension, resilient infrastructure and social infrastructure projects create an appropriate environment for new projects. The launch of this new project is grouped by theme:

- **Housing and densification** (housing, social and functional mix),
- **Mobility** (green corridor)
- **Resilience based on nature based solutions** (creation of parks and canals, delimitation of nature reserves to protect the shoreline and existing green spaces)
- **Recreational and social facilities** (community and cultural centre, sports facilities, Mambanda hospital) will be planned to complete the actions already started and achieve the ambitions of the optimal scenario.

In this section, priority projects will be detailed. At this step, projects will overlap other projects to ensure cost and time effectiveness.

Projects achieved:

- Bus line upgrading
- Digital solutions for climate action
- Creation of health centres
- Creation of IDPs reception centres
- Primary schools and kindergarten creation and upgrading
- Bilingual Mambanda high school relocation and upgrading.

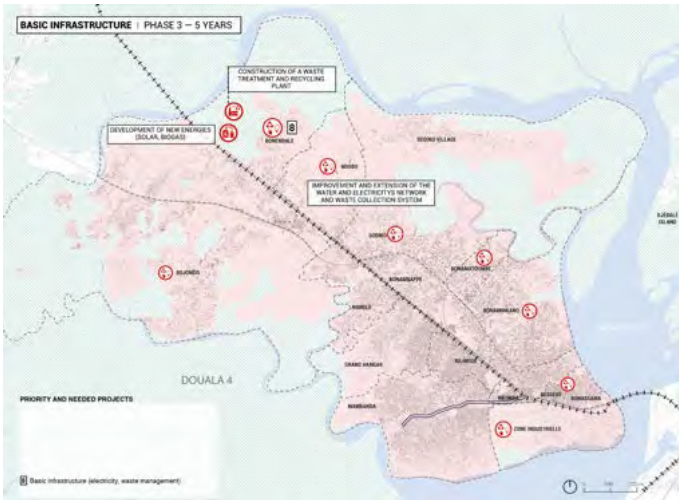
Projects in progress

- Basic infrastructure projects (electricity, water and waste management, and ICT)
- Mobility projects
- Resilient infrastructure (mangrove protection and restoration, construction of hybrid dykes)
- Restructuring the land tenure system for access to land
- Densification projects along structuring axes
- Economic development and strengthening centralities.

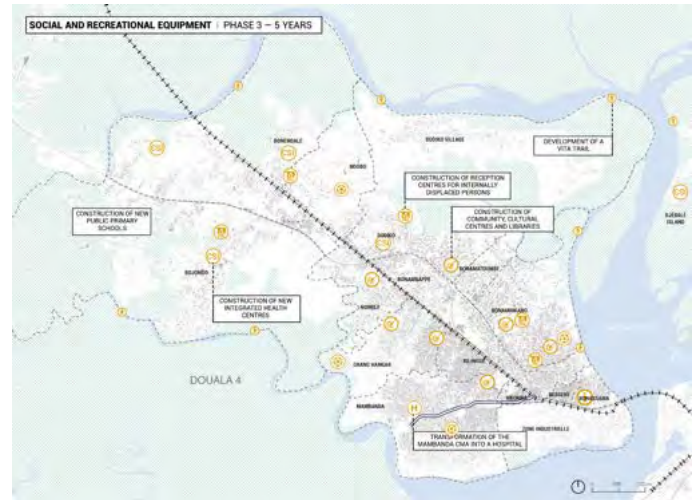
THEME	PROJECT	TIMEFRAME				
		YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
	Water supply and sewerage network improvement					
	Electricity network improvement					
	Solid waste management system (SWMS) project					
	Development of information and communication technologies (ICTs)					
	New paved roads and upgrading of existing roads					
	Green corridor for pedestrian / cycle track network					
	Ecological restoration of mangrove swamps					
	Extension and renovation of the drainage system					
	Construction of hybrid dykes					
	Construction of parks with retention ponds					
	Urban agriculture					
	Creation of health centres and mobile medical units					
	Community, cultural centres, and libraries development					
	Creation of a tourism office and art center					
	Recreational and sport projects					
	Transformation of Mambanda's CMA into an hospital					
	Via trail					
	Local economic development (LED) of Douala 4					
	Information, education and communications services for health, education promotion and environmental awareness					
	Improvement of the subdivision's capacity to design, plan and implement social programs and to monitor the effect of such programmes					
	Technical assistance for the coordination of actors (ad hoc organisation) / trainings of local technical staff					
	GIS implementation					
	Vertical densification along the main axis					
	Housing development and upgrading					
	Urban renewal programme					

Table 8. Phasing of the mid-term projects
Source: UN-Habitat

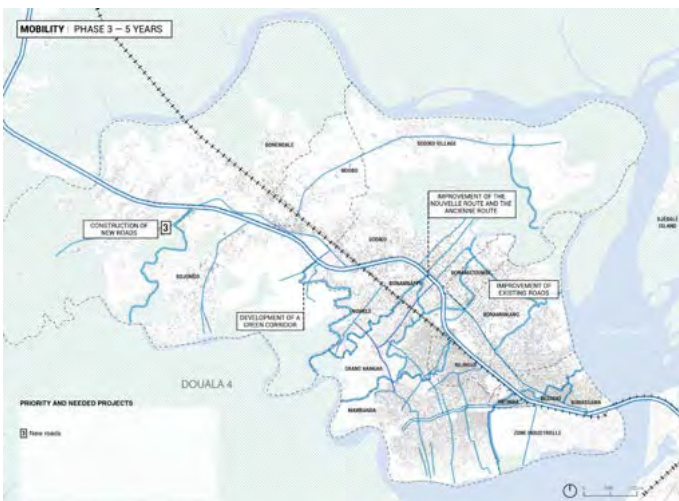
Basic infrastructure
 Environment
 Social and recreational equipment
 Housing
 Mobility
 Economic and commercial development
 Priority project



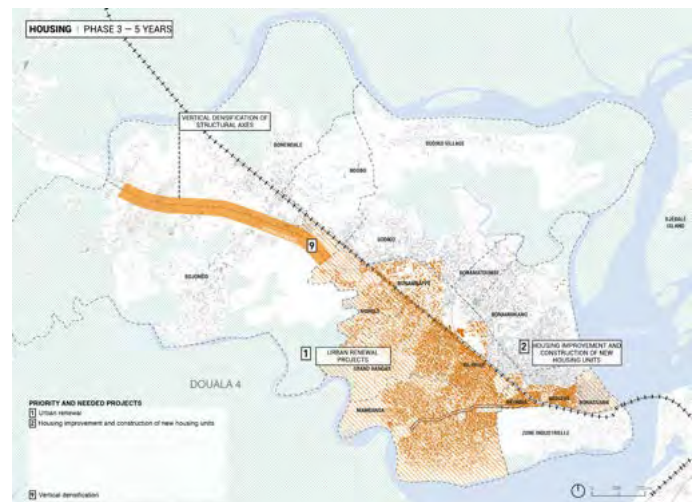
Map 27. Basic infrastructure mid-term projects



Map 28. Social and recreational mid-term projects



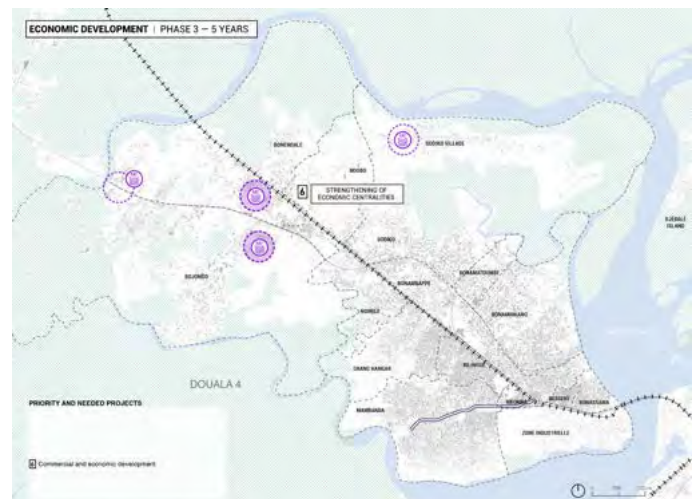
Map 29. Mobility mid-term projects



Map 30. Housing mid-term projects



Map 31. Environment mid-term projects



Map 32. Economic Development mid-term projects

Actions for 3 - 5 years (included)

In this phase, the developed priority projects are part of housing and resilient infrastructure programmes.

The urban renewal projects will be developed in the six most dense neighbourhoods targeted in the spatial profile, composed mainly of informal settlements. The impact of the urban densification projects along the structuring axes, the improvement of networks and roads, and the development of economic centralities will boost the mutation of these neighbourhoods. The two priority neighbourhoods will be Mambanda and Grand Hangar because of the exacerbated urban challenges regarding the extension of the PAD.

These urban renewal projects will be based on both principles: social and functional diversity. They will include several components: a typology of housing (social and private), social and recreational facilities, public spaces (garden park squares etc.) and local economic centres. These components should be coherently articulated. For example equipment such as the CSI can be localized in a strategic position to be shared between neighbourhoods. Moreover, the architecture of buildings will have to take into account natural hazards.

These projects are composed of different stages that take time to be implemented. Feasibility and design studies will begin at the end of the short-term and will continue in medium-term and long term phase. These operations will be concomitant with the completion of work on basic infrastructure, roads, resilient infrastructure and the launch of new projects related to the protection of the environment.

The implementation of resilient infrastructure projects will continue to complete the tools already deployed in short term phase. Nature-based solutions will be at the heart of the programme. The construction of parks including retention basins and permeable biodiversity will contribute to reducing flood risks. 12 parks have been identified, a more in-depth study will assess their exact location and size to face these risks. The studies will be supported by the project of legal delimitation of nature reserves (surrounding islands, Bojongo neighbourhood, and Sodiko village).

All these projects will contribute to improving the living conditions of residents and internally displaced people by offering them housing that meets standards, and by offering them an equipped, healthy and resilient living environment.

LEGEND

Transportation
 — Primary road
 - - - Secondary road
 + + + Railway

Administrative boundaries
 - - - Neighbourhoods

Natural system
 Waterway
 Natural area (no constructions)

PHASE 3 — 5 YEARS

Basic Infrastructure

- Basic Infrastructure (water, electricity, waste collection)
- Development of new energies (solar, biogas)
- Waste treatment and recycling plant

Social and Recreational Equipment

- Transformation of the Mambanda CMA into an hospital
- New integrated health centre (CSI)
- Community, cultural centre and library
- Vita trail
- Gymnasium / Football and basketball field
- New public primary school
- Reception centre for IDPs
- Tourism office and art center

Mobility

- New asphalted roads and upgrading of the existing road network
- Green corridor / cycle tracks

Environment

- Park with retention pond
- Hybrid dykes
- Development of the Wouri banks
- Protection and restoration of natural spaces (mangroves, forest areas)

Economic Development

- Commercial and economic development

Habitat

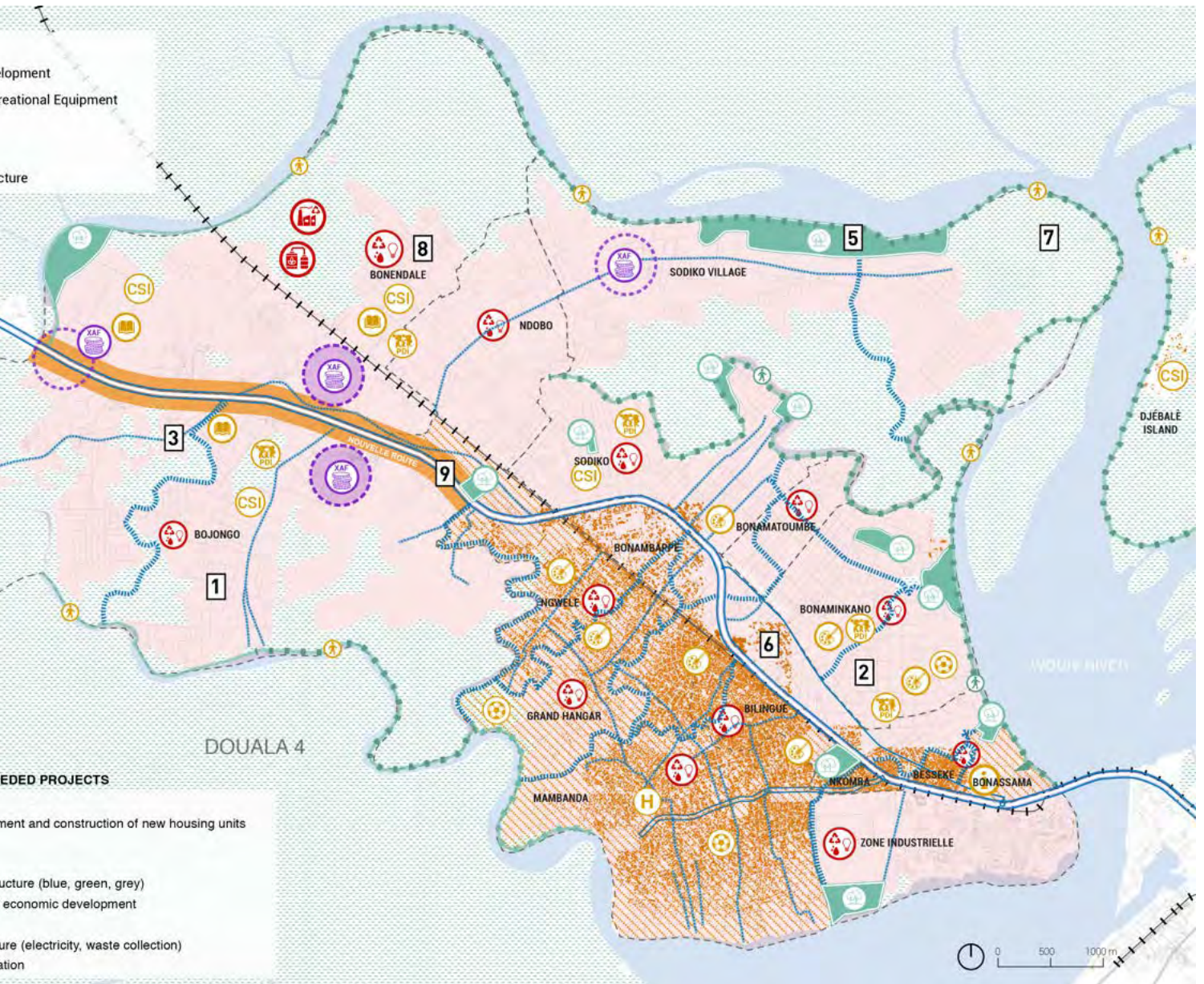
- Vertical densification
- Urban renewal
- Habitat improvement and construction of new housing units



YEAR 3

Identify the available resources and capacities of Douala 4 for the implementation of the renewal projects and resilient infrastructure, by conducting the assessment of the budget of Douala 4 and the CUD to evaluate the funds available.

Based on this financial analysis, the next step will be to mobilise resources from interested investors



Map 33. Mid-term actions / Source: UN-Habitat

YEAR 4

Conduct the feasibility study in the different neighbourhoods regarding all the priority projects of Douala 4.

Develop the concept and detailed designs for the renewal projects and resilient infrastructures (construction of parks with pounds). At the same time, previous projects are implemented at site work phase.

Prepare the construction RFP to hold the bidding process and select the contractors.

Launch the RFP for the construction of all these projects.

YEAR 5

Implement the construction work.

OVERVIEW OF THE MID-TERM ACTIONS



URBAN RENEWAL PROGRAMME

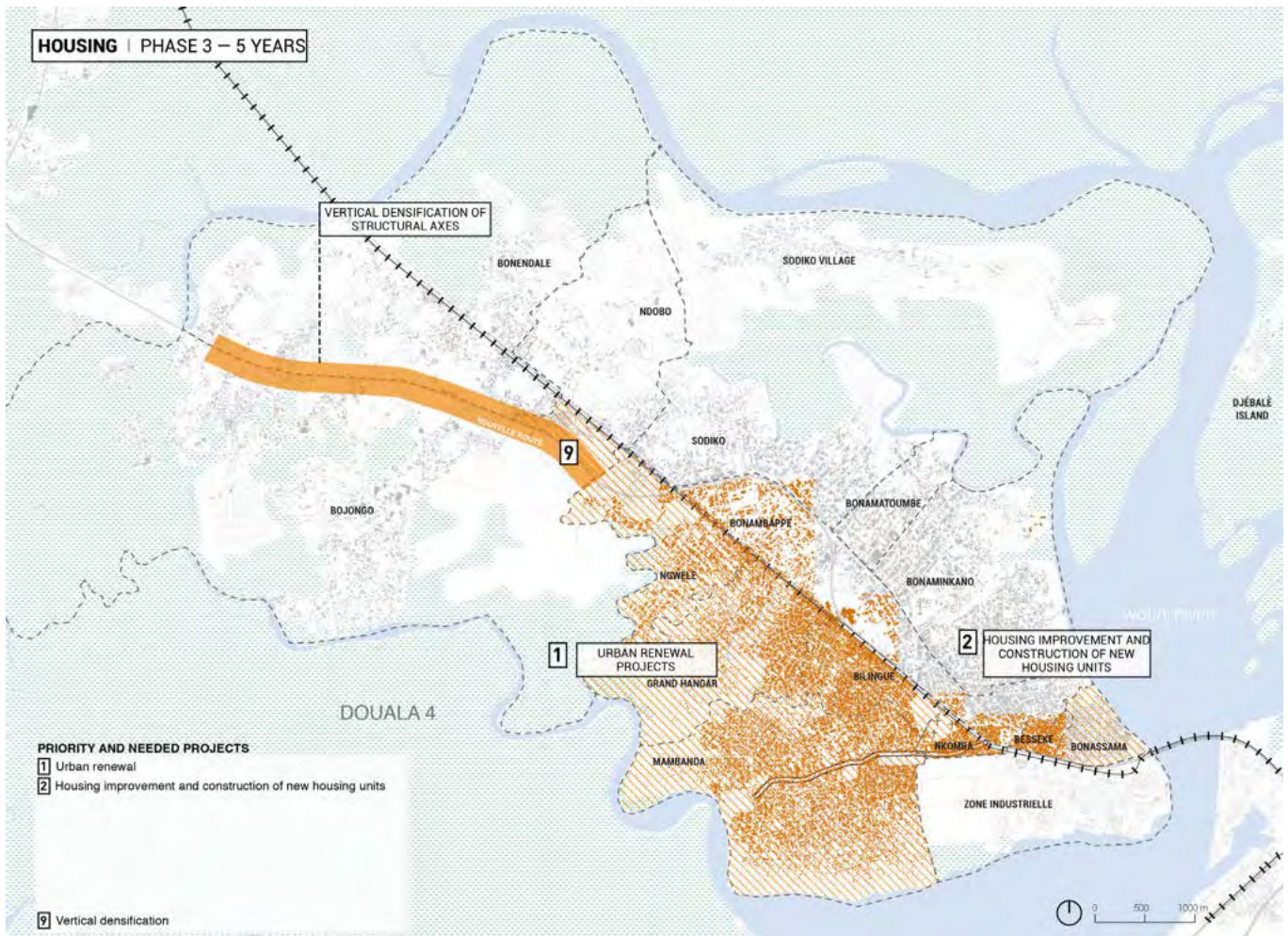
Short Term Actions

- Re-housing in temporary accomodation (vacant building, housing contenairs...)

	Actions	Year 3	Year 4	Year 5
01	Preliminary design and cost-benefit analysis (assessment of the size and localization of the parks, environmental, landscape and engineering studies).			
02	Prepare the project budget for the construction of the global project (housing, social and recreational facilities, commercial spots).			
03	Prepare the Design RFP for the bidding process and announce the bid. The RFP must include conducting a detailed technical assessment, habitat and land study, social environmental analysis, engineering work, and biodiversity.			
04	Hold the bid evaluation and selection; Contract negotiation and awarding.			
05	Technical assessment and studies.			
06	Implementation of the construction work.			

Project Partners

- **Owner and implementer:** CAD4, Social landlords, SIC, and property developers will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



Map 34 Urban renewal programme mid-term project.
Source: UN-Habitat

Objective

The urban renewal projects aim to build and diversify the supply of housing in the six densest neighbourhoods, which are mainly composed of informal settlements. The restructuring of informal settlements will improve the living conditions of vulnerable populations, including IDPs. The objective is to build new housing while vertically densifying these neighbourhoods and offering social and economic services. The project will propose social and private housing and the construction of social facilities and commercial units on the ground floor of the buildings.

The architecture of the buildings will have to take into account the risk of flooding in order to protect the residents and to be resilient to the effects of climate change.

Impact and Beneficiaries

The Douala 4 council and local communities have highlighted the lack of decent housing and facilities in these areas, reinforcing inequalities. The project will provide housing that meets environmental and regulatory standards and better living conditions by mitigating health risks and poverty (SDG 1, 3). The inhabitants would have access to housing equipped and covered by modern and innovative basic infrastructures (SDG 6, 7). The functional and social mix at the heart of urban renewal projects will contribute to poverty reduction and organised and resilient urban development (SDG 1, 11).



CONSTRUCTION OF PARKS WITH RETENTION PONDS

	Actions	Year 3	Year 4	Year 5
01	Preliminary design and cost-benefit analysis (assessment of the size and localization of the parks, environmental, landscape and engineering studies).			
02	Prepare the project budget for the construction of the parks with retention ponds			
03	Prepare the Design RFP for the bidding process and announce the bid. The RFP must include conducting a detailed technical engineering assessment, environmental studies, land tenure and social study, and design public spaces).			
04	Hold the bid evaluation and selection; Contract negotiation and awarding.			
05	Technical assessment and studies.			
06	Implementation of the construction work.			

Project Partners

- **Owner and implementer:** CUD and CAD 4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINEP, and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



Map 35. Construction of retention ponds and parks
Source: UN-Habitat






Objective

The construction of parks completes the flood control system. The system of resilient infrastructures previously put in place remains insufficient for the recurrence of flooding episodes. The project relies on an adapted permeable biodiversity (choice of plants, trees) combined with the construction of retention basins that also have a landscape function. Thus, the project ensures several uses of new green recreational public spaces and flood protection.

Impact and Beneficiaries

The construction of the park is an operation controlled by the actors of the municipality and the CUD. This project will be able to be implemented in the medium term and have its first mitigating effects from the first year of its implementation (SDG 13). The project will allow the greening of the Douala 4 district and will provide vulnerable residents with new green spaces for recreational activities (SDG 15). Sanitary conditions will be improved (SDG 3 and 6) and inter-neighbourhood mobility will be more comfortable.

Time Frame of the Mid-Term Phase Actions

THEME	PRIORITY PROJECTS / ACTIONS	
	CONSTRUCTION OF PARKS	
	1,2	Preliminary design and cost-benefit analysis (assessment of the size and localisation of the parks, environmental, landscape and engineering studies). Prepare the project budget for the construction of the parks with retention ponds.
	3	Prepare the Design RFP for the bidding process and announce the bid. The RFP must include conducting a detailed technical assessment, environmental analysis, engineering work, water evacuation and biodiversity.
	4	Hold the bid evaluation and selection; Contract negotiation and awarding.
	5	Technical assessment and studies.
	6	Implementation of the construction work.
	ELECTRICITY NETWORK	
	9	Implementation of the construction work.
	10	Operation of the new electricity network.
	SOLID WASTE MANAGEMENT	
	10	Implementation of the construction work.
	11	Operation of the SWM system.
	DEVELOPMENT OF INFORMATION AND COMMUNICATION TECHNOLOGIES	
	9	Implementation of the construction work.
10	Operation of the new electricity network.	
	NEW PUBLIC TRANSPORTATION	
	9	Implementation of the construction work.
	ECOLOGICAL RESTORATION	
	11	Implementation of the restoration work.
	EXTENSION AND RENOVATION OF EXISTING INFRASTRUCTURE	
	DIGITAL SOLUTIONS	
	CONSTRUCTION OF NEW INFRASTRUCTURE	
	Implementation of the construction work.	
	URBAN RENOVATION	
	1	Preliminary design and cost-benefit analysis (assessment of the size and localization of the parks, environmental, landscape and engineering studies).
	2	Prepare the project budget for the construction of the global project (housing, social and recreational facilities, commercial spots).
	3	Prepare the Design RFP for the bidding process and announce the bid. The RFP must include conducting a detailed technical assessment, habitat and land study, social environmental analysis, engineering work, and biodiversity).
	4	Hold the bid evaluation and selection; Contract negotiation and awarding.
	5	Technical assessment and studies.
	6	Implementation of the construction work.

Project that started in the previous phase.


YEAR 2	MID TERM PHASE			SDGs
	YEAR 3	YEAR 4	YEAR 5	
WORKS WITH RETENTION PONDS				
				
WORK IMPROVEMENT				
WATER TREATMENT SYSTEM (SWMS) PROJECT				
WORKS WITH COMMUNICATION TECHNOLOGIES (ICTs)				
WORKS WITH PAVED ROADS				
WORKS WITH RESTORATION OF MANGROVE SWAMPS				
WORKS WITH RESTORATION OF THE DRAINAGE SYSTEM				
WORKS FOR CLIMATE ACTION				
WORKS WITH CONSTRUCTION OF HYBRID DYKES				
WORKS WITH WASTE MANAGEMENT PROGRAMME				

Table 9. Timeframe of the the mid-term projects
Source: UN-Habitat

III. Long Term Phase (beyond 5 years)

The long-term phase of this action plan is a continuity of the actions undertaken in the previous phases related to the following programme families:



- Basic infrastructures.
- Environment.
- Housing.
- Social and recreational equipment.

Actions to improve local governance including providing technical assistance for the coordination of actors and implementing a GIS portal for the city of Douala will continue during this phase.

The finalisation of these projects has contributed to build an appropriate environment, to improve living conditions and to encourage the implementation of other projects.

In parallel, new projects will be implemented beyond five years including:


- **Mobility:** development of minibus lines, river shuttles and the creation of intermodal hubs;
- **Environment:** Development of urban agriculture projects
- **Housing: Improvement of public space**
- **Economic and Commercial Development: Development of sustainable and eco-tourism activities**
- Implementation of an **online exchange platforms** between local stakeholders and local populations.

THEME	PROJECT	TIMEFRAME			
		YEAR 5	YEAR 6	YEAR 7	YEAR 8
	Intermodal hub / Urban integration				
	Communal mini-bus service				
	River shuttle service development / Piers and landing stages construction				
	Ecological restoration of mangrove swamps				
	Urban agriculture				
	Vertical densification along the main axis				
	Housing development and upgrading				
	Urban renewal programme				
	Public space				
	Community, cultural centres, and libraries development				
	Recreational and sport projects				
	Development of sustainable activities and eco-tourism programme				
	Technical assistance for the coordination of actors (ad hoc organisation) / trainings of local technical staff				
	GIS implementation				
	Online exchange platform				

 Basic infrastructure
  Environment
  Social and recreational equipment

 Housing

 Mobility

 Economic and commercial development

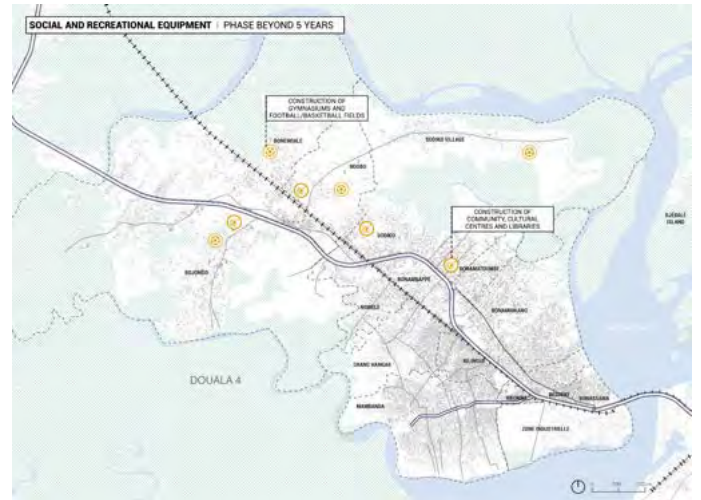
 Priority project

Table 10. Phasing of the long-term projects

Source: UN-Habitat



Map 36. Basic infrastructure long-term projects



Map 37. Social and recreational long-term projects



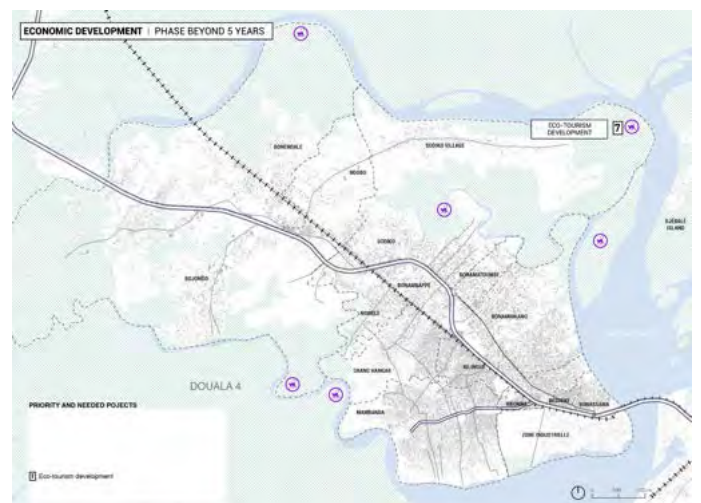
Map 38. Mobility long-term projects



Map 39. Public space long-term projects



Map 40. Environment long-term projects



Map 41. Economic Development long-term projects

Actions beyond 5 years

This section refers to the priority projects that will be developed beyond the 5th year "Sustainable economic and community ecotourism development". It is important to emphasise that the implementation of this programme relies on the finalisation of the priority infrastructure projects that were implemented in the short and medium-term phases:

- The finalisation of these priority projects will create a favourable environment for the implementation of the sustainable economic development and community ecotourism programme. The improvement of the electricity network will contribute to the development of new green energies (solar, biogas, compost).
- The good implementation of the solid waste management system, including the creation of a waste processing plant, and the involvement of the residents in the collection and selection of waste, will provide a hygienic and healthy environment.
- The development of the ICTs with the development of a flood warning system and improvement of the internet access will considerably mitigate the rate of exposure of the population to climatic risks and will allow the fluent dissemination of information.
- The development of resilient infrastructures (construction of dykes and parks composed of retention basins, development of the banks of the Wouri River, protection and restoration of mangrove swamps, creation of natural reserves) will enable the subdivision to adapt to various natural hazards (flooding, rising waters) and to limit the effects of natural disasters on housing.
- The improvement of housing and the construction of new housing units as part of the urban renewal programme will promote the transformation of neighbourhoods, making them more resilient and inclusive. New pilot sustainable housing projects will be initiated.
- The strengthening of the economic centralities as part of the local economic development project.



The implementation strategy of the sustainable activities and community ecotourism development programme encompasses various projects that are not exhaustive.

LEGEND



Transportation	Administrative boundaries
— Primary road	- - - Neighbourhoods
— Secondary road	Natural system
+++ Railway	Waterway
	Natural area (no constructions)

PHASE BEYOND 5 YEARS




Basic Infrastructure

-  Development of new energies (solar, biogas)
-  Waste treatment and recycling plant



Social and Recreational Equipment

-  Community, cultural centre and library
-  Gymnasium / Football and basketball field

Mobility

-  Intermodal hubs
-  Shuttle bus between neighbourhoods
-  River shuttles, docks



Environment

-  Urban agriculture
-  Protection and restoration of natural spaces (mangroves, forest areas)

Economic Development

-  Eco-tourism development

Habitat

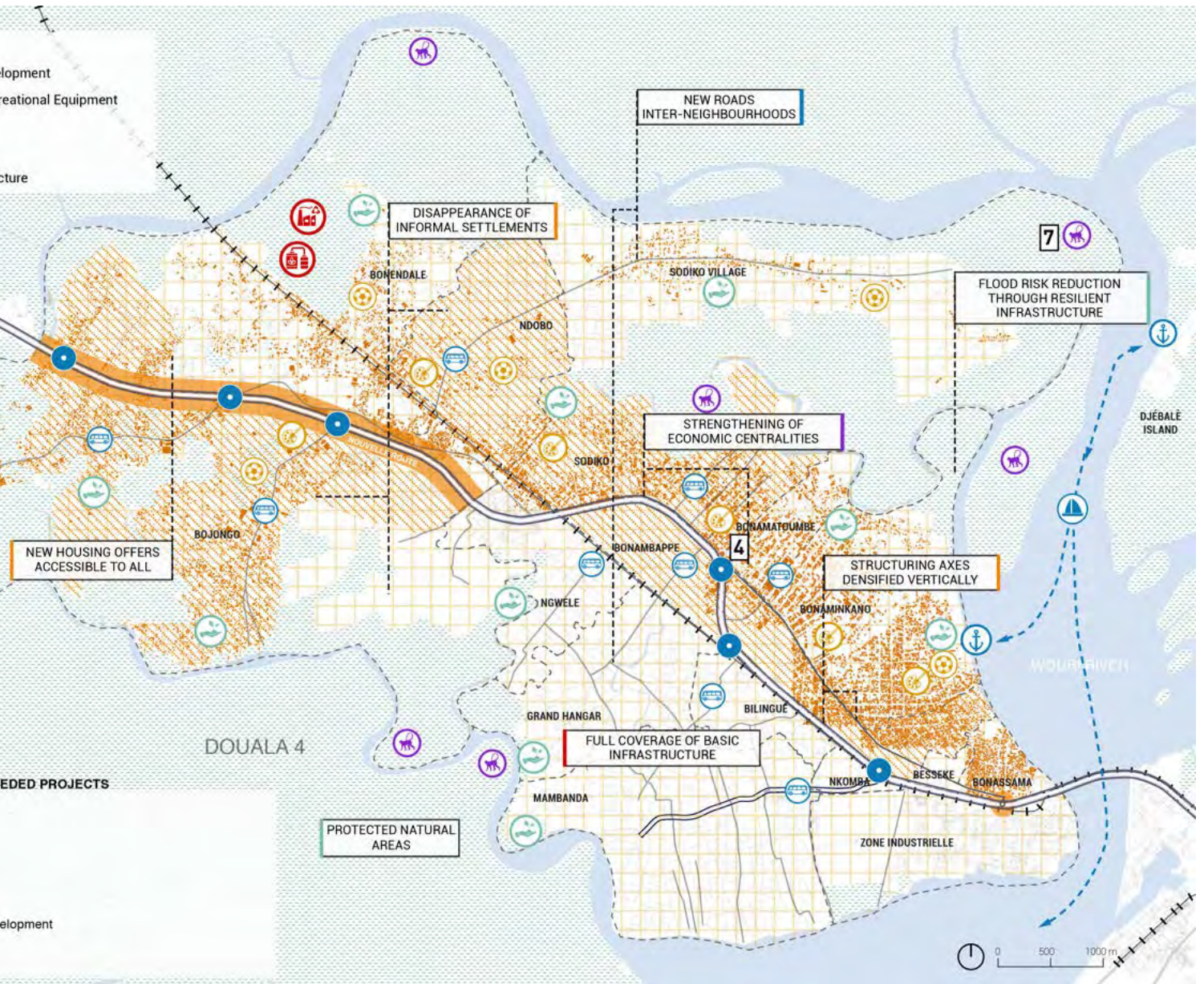
-  Design of public space
-  Vertical densification
-  Habitat improvement and construction of new housing units



YEAR 6

Preliminary studies of existing natural resources for the implementation of ecotourism projects, assessing the budget of Douala 4 and the CUD to evaluate the funds available.

Based on this financial analysis, the next step will be to **mobilise resources from interested investors. Mandate entrusted to a BET.**



Map 42. Long-term actions / Source: UN-Habitat

YEAR 7

Carry out the feasibility study by a BET in the different districts for all priority projects and carry out an analysis of the local economy for the development of sustainable economic activities and ecotourism.

Develop the concept and detailed plans by a BET for the respective projects.

Prepare the construction RFP to hold the bidding process and select the contractors.

Launch the RFP for the construction of all these projects.

YEAR 8

Contract a company and implement the construction work.

OVERVIEW OF THE LONG-TERM ACTIONS

The following sustainable projects aim to improve the livelihoods of local populations and the environmental quality:

- **Fish farming:** this activity can generate a regular income for the population. The action will focus on the sustainable organisation of fishing activities in the Wouri River, while preserving the cycle of the aquatic ecosystem.
- **Urban agriculture:** A valuable component of urban space, urban agriculture contributes to the reduction of heat islands and creates local food production site. This activity involves developing growing areas in schools, gardens, and various public places.

Community-based ecotourism activities

The following projects promote community-based ecotourism initiatives, the protection of the environment and the wellbeing of the local population:

- **The green corridor:** the development of green pedestrian paths along the canals and developed banks.
- **Poles of activities related to ecotourism on the banks:** the development of the hotel offer and related activities (restaurants, shops, recreational and cultural spaces, etc.).
- **The construction of recreational activity parks:** existing spaces to be improved and the creation of new public spaces; the creation of "green" itineraries based on these public spaces and parks.
- **Developing river transport** to relieve congestion on the main roads: river shuttle service and construction of docks and landing stages.
- **Actions to protect and restore natural areas.**

This programme also aims to strengthen urban governance through capacity building. These include:

- Raising awareness of ecotourism and the value of natural and cultural resources (awareness campaigns, activities, school programmes).
- Training of local populations and stakeholders.
- Partnerships between local actors, researchers, local populations, civil society organisations and government agencies.



DEVELOPMENT OF SUSTAINABLE ACTIVITIES AND ECO-TOURISM

	Actions	Year 6	Year 7	Year 8
01	Preliminary phase : Feasibility studies (audit of existing ecotourism or natural sites, choice of economic and management model, measures to prevent negative impacts on environment).			
02	Consultation of the key stakeholders and local community to identify the main assets and design the strategy.			
03	Design preparation : choice of economic and management model, respect of standards and regulations.			
04	Preparation of bids for each identified project: agriculture, fish farming, green corridor, hotel infrastructure, retail, cultural spaces. Selection and contract awarding.			
05	Project management and execution of the projects: economic activities projects and ecotourism projects.			

Project Partners

- **Owner and implementer:** CAD4, CSOs, private sector and public sector will oversee the implementation, maintenance, and sustainability of the programme.
- **Project management:** CUD, CAD4, MINEPAT, MINFI and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.

Objective

The project aims to restore, preserve, and enhance the biodiversity and natural spaces of Douala 4 by supporting the implementation of community-based ecotourism. The development and promotion of the natural assets of Douala 4 will make it a lever for economic development and an attractive tourist site.






Impact and Beneficiaries

This project aims to ensure that the ecotourism sector contributes effectively to the sustainable development of Douala 4 (SDG 11). It will reinforce the preservation of natural areas and biodiversity (SDG 14, 15) and promote the economic development of Douala 4 through sustainable activities (hotels, restaurants, tourist trail), resilient and commercial infrastructure (parks, hiking trails), and capacity building (SDG 17).

The development of local capacities will guarantee the management of these spaces. Raising awareness among local populations and stakeholders will enhance impacts on natural areas and resources (SDG 8, 16). Collaboration between local stakeholders, researchers, local people, civil society organisations and government agencies will strengthen the community base and encourage local initiatives. The inclusion of IDPs in key positions in this programme could further integrate them into the host community and improve living conditions.

The protection of biodiversity and natural areas will directly improve the living conditions of the inhabitants (SDG 2, 3, 12, 15) and the attractiveness of Douala 4.

Time Frame of the Long-Term Phase Actions

THEME	PRIORITY PROJECTS / ACTIONS	
		ELECTRICITY NE
		SOLID WASTE MANAGEM
		DEVELOPMENT OF INFORMATION AI
		NEW P
		ECOLOGICAL RESTORA
		EXTENSION AND RENOV
		DIGITAL SOLUTIO
		CONSTRU
		CONSTRUCTION OF PA
		DEVELOPMENT OF SUSTAINA
	1	Preliminary phase : Feasibility studies (audit of existing ecotourism or natural sites, choice of economic and management model, measures to prevent negative impacts on environment).
	2	Consultation of the key stakeholders and local community to identify the main assets and design the strategy.
	3	Design preparation : choice of economic and management model, respect of standards and regulations.
	4	Preparation of bids for each identified project: agriculture, fish farming, green corridor, hotel infrastructure, retail, cultural spaces. Contract awarding.
	5	Project management and execution of the projects: economic activities and ecotourism projects.
		URBAN REN
	5	Technical assessment and studies.
	6	Implementation of the construction work.

 Project that started in the previous phase.


	YEAR 5	LONG TERM PHASE			SDGs
		YEAR 6	YEAR 7	YEAR 8	
NETWORK IMPROVEMENT					
WATER TREATMENT SYSTEM (SWMS) PROJECT					
INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTs)					
PAVED ROADS					
RESTORATION OF MANGROVE SWAMPS					
REHABILITATION OF DRAINAGE SYSTEM					
TRAINING COURSES FOR CLIMATE ACTION					
CONSTRUCTION OF DYKES					
MARKETS WITH RETENTION PONDS					
SUSTAINABLE ACTIVITIES AND ECO-TOURISM					
e					
-					
RENEWAL PROGRAMME					

Table 11. Timeframe of the the long-term projects
Source: UN-Habitat

05

STAKEHOLDER ENGAGEMENT

STAKEHOLDER COLLOQUIUM “PRESENTATION OF THE ACTION PLAN IN DOUALA 4, FOR A RESILIENT SUBDIVISION IN THE FUTURE DOUALA METROPOLIS”

METHODOLOGY OF THE COLLOQUIUM

The stakeholder colloquium on the “presentation of the action plan for a resilient Douala 4 municipality at the scale of the future metropolis of Douala” was held on May 3, 2023, in the city of Yaoundé, under the chairmanship of the Secretary General of the MINHDU in the presence of stakeholders and online.

The aim of the colloquium was to raise awareness and inform local actors, humanitarian agencies and potential investors about the action plan. This objective was divided into two goals:

- **The presentation of the synthesis of the challenges and the strengths of Douala 4 and Mambanda**, the urban vision and the optimal scenario;
- **The presentation of the consolidated action plan** which highlights priority investments to raise awareness among stakeholders of the urgency of interventions to be carried out for the benefit of the IDP community and the host community.

The following tools were used during the colloquium:

- **The display of optimal scenario maps** showing urban growth planning and resilient development of Douala 4 and Mambaanda;
- **The display of phasing tables and related thematic maps** illustrating the stages of project implementation in the short (0-2 years included), medium (3-5 years included) and long term (beyond 5 years), and the location of these projects on the territory;
- **The sharing of the investment card booklet.** This booklet contains all the investment sheets of the twelve priority projects and the three detailed necessary projects. Each sheet includes the information necessary to understand each project (title, location, beneficiaries, alignment with the SDGs, partners, objective, issues, impact, life cycle, budget estimate, etc.).

At the end of the colloquium, participants filled out an questionnaire of interest, allowing the UN-Habitat team to identify priority projects and themes that were of particular interest.

RESULTS OF THE COLLOQUIUM

Response rate

The stakeholders’ symposium was attended by about 50 participants in person and 10 persons online. The participants were of various profiles from the institutional and parapublic sector, actors of international cooperation.

Topics of interest

The stakeholders have demonstrated their interest in all the themes presented during the colloquium. The results obtained are essentially similar as those of the colloquium in Douala on January 12, 2023.:

- The themes of **basic infrastructure (68%)** and **mobility (60%)** stand out from the others and are the most popular;
- **The environment and housing themes** are also of high interest to stakeholders with an interest rate **ex-aequo of 48%**;
- **Economic development and social and recreational facilities** are the least popular but whose rate remains satisfactory at 36%.

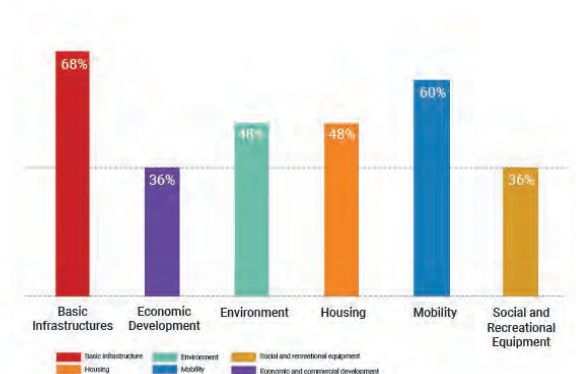


Fig. 18 Themes of interest / Source: UN-Habitat

Projects of interest

The action plan for the optimal scenario of Douala 4 and Mambanda consists of twelve (12) priority projects, presenting issues likely to interest potential investors present at the conference.

Looking at the figure below, project n°1 (improvement of the water and sewerage network), and project n°3 (solid waste management system), project n° 5

(improvement of the road network) stand out with an interest rate higher than 50 per cent.

Stakeholders also underlined a strong interest in the project related to the construction and the renovation of drains (48 per cent), and the construction of urban parks with retention ponds (40 per cent) as well as the urban renewal programme (44 per cent).

The priority project n°4 related to the development of Information and Communication Technologies (ICTs) does not seem to have attracted the attention of the participants. Only 12 per cent of the participants showed interest in this project. ICTs project should be considered as a cross-cutting component of the other 12 priority projects. It can easily be integrated into all these projects and bring a very significant added value.

In addition to these pre-identified projects, stakeholders highlighted the opportunity given by the action to build a coordination between the stakeholders to articulate intervention. In addition, 88% of participants

are interested in having more information on priority projects. All participants supported the next step which is the organization of a bilateral meetings.

The action plan is the basic tool to support the implementation of synergies and build partnerships. The holding of this colloquium confirmed the ongoing commitment of stakeholders to support the programme and identified possible collaborations between the actors of the territory around common interests. The holding of bilateral meetings will enhance coordination among stakeholders to ensure the successful implementation of projects.

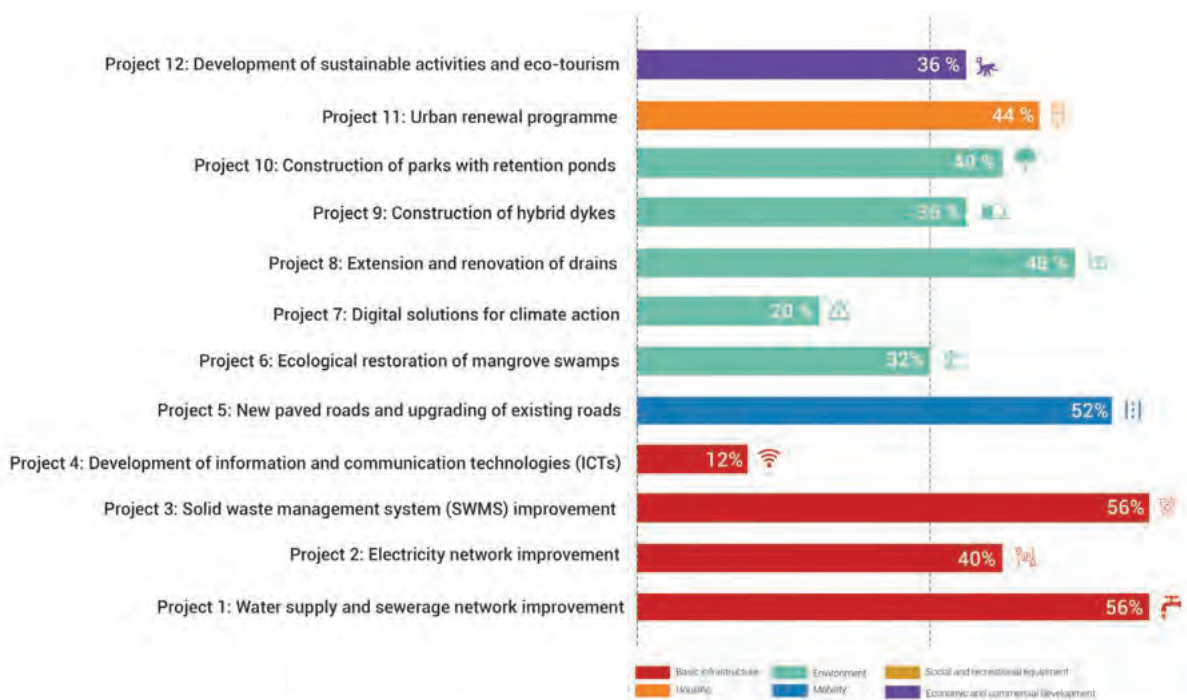


Fig 16. Priority projects of interest
Source: UN-Habitat

06

CONCLUSION

CONCLUSION

The urban vision and the scenario as well as the action plan are concrete urban planning tools to support and guide the municipality of Douala 4 in the interventions to be undertaken. These tools have highlighted the subdivision of Douala 4 for investors who focus their efforts in the centre of Douala. DAC 4 has a unifying roadmap whose creation process followed a participatory approach and initiated a dialogue between stakeholders. This roadmap proposes a new paradigm of resilient and inclusive city to be implemented over 10 years or more. The phasing of interventions is defined according to the urgency and operationality of the project, and the capacities of the municipality of Douala 4.

The objective was also to enable the subdivision to be able to take up this list of projects in to propose them in their maturation cell and to include them in their multiannual budget. Dialogue with investors and international cooperation on priority projects will continue and reinforce in bilateral meetings. The conferences have aroused interest among financial actors that could tend towards possible long-term commitments.

The application of the UPIMC programme in the subdivision of Douala 4, as a pilot subdivision, has shown the added value for municipalities lacking the means to be supported in urban planning. The UPIMC programme can be deployed in other subdivisions of Cameroon's major cities experiencing similar urban trajectories and the question of integration of displaced people into urban planning documents while adapting the methodology to the context. The implementation of the programme in other cities will initiate the beginnings of cooperation, a network of cities sharing good practices in urban planning.



Photo 7. Participants at the Colloquium on 3rd May 2023.
Source: UN-Habitat

07

ENDNOTES

1. RAPPORT DE PRESENTATION DES RESULTATS DEFINITIFS DU 3e RECENSEMENT GENERAL DE LA POPULATION ET DE L'HABITAT (2010), Cameroun, MinSante
2. Jeune Afrique (2022), Cameroun : la Banque mondiale débloque un prêt décisif pour le projet BRT de Douala, retrieved on <https://www.jeuneafrique.com/1358800/economie/cameroun-la-banque-mondiale-debloque-un-pret-decisif-pour-le-projet-brt-de-douala/>
3. Spatial Profile Douala (2022), ONU HABITAT
4. Teutli Hernández, C., et al. (2020). Mangrove ecological restoration guide: Lessons learned, p.6.

08

ANNEX

ANNEX A SCORING MATRIX

METHODOLOGY AND DEVELOPMENT OF THE SCORING MATRIX

This section explains the methodology implemented to obtain the scoring matrix, starting from the visioning and scenario building, and concluding with the final outputs. Four main steps were developed to build the scoring matrix:

- Conceptual consolidation (*visioning and scenario building*)
- Criteria and indicators identification (*analytical structuring*)
- Scoring and weighting formulation (*scores definitions*)
- Filling and testing of the scoring matrix (*participating approach*)

Step 1 – Conceptual Consolidation

Step 1 refers to the scenario-building process and consists in clarifying the concepts that led to the identification of the criteria and indicators (step 2):

- **Identification of the variables:** they affect both sustainable development and urban planning considerations in the area. Variables were validated by local stakeholders and local community representatives during the Scenario validation workshop. The criteria of the scoring framework draw on these variables.
- **Building of the scenarios:** the combination of the variables could result in the Business As Usual (BAU) or Optimal scenario which list the needed interventions classified into thematic to achieve the urban vision.
- **Definition of the optimal outcomes and list of interventions:** the scoring framework will assess the projects of the optimal scenario at the scale of Douala 4 and Mambanda.

Step 2 – Criteria and indicators identification

The objective of the scoring matrix is to assess the

transformative impacts of the projects developed in the optimal scenario. This begs the question: **how to measure these impacts?**

- **Identification of five transformative impacts** (social, environmental, economic, spatial, and urban governance) common to all projects. They echo the variables identified during the scenario-building process that will have an impact on the urban development of the subdivision.
- **Development of priority scoring criteria** to assess projects' transformative impacts: criteria give qualitative information on the five transformative impacts. Each transformative impact is assessed through several criteria that refer to different areas of required intervention.
- **Definition of a set of measurable indicators:** each criterion is then developed into one or more indicators to measure the impacts of the projects. The definition of indicators draws on the issues that need to be addressed at the scale of Douala 4 and Mambanda. Therefore, indicators aim to assess and measure how the development projects do fill these gaps.

Step 3 – Scoring and weighting formulation

Each criterion is measured by one or more indicators, identified, and classified as a list beginning with "A1" and ending with "F5" ("A" refers to the transformative impact category and "1" the number of the indicator within its category). The score of each indicator is defined on a scale from one to four (one representing the least impact and four the most). Each criterion has the same weight except the criterion "Technical priority based on need assessment" which was assigned a higher weight: projects that need to be implemented more urgently will obtain a higher score (from 0 to 10).

Eventually, the scoring aims to assess the transformative impacts of the development projects. In this regard, the scoring matrix will facilitate the prioritisation of the projects, hence the Action Plan construction.

Step 4 – Filling and testing of the scoring matrix

The UN-Habitat team, accompanied with a financial expert, filled the scoring matrix based on its expertise. The last step of the process consisted of testing the scoring by confronting it with local stakeholders' point of view to ensure that the scoring matrix can be interpreted in the context of Douala 4. The scoring matrix has been filled and validated during a COTECH that took place in Douala in November 2022 with local stakeholders of the Douala 4 subdivision. The UN-Habitat also reported on the assessment by civil society in the matrix collected during the Scenario validation workshop.

INSTRUCTIONS TO READ THE SCORING MATRIX

Overview

The scoring process is based on two interrelated documents:

- (1) the **scores definitions grid** explaining the scoring.
- (2) the **scoring matrix** gathering the scoring of experts (UN-Habitat team, financial expert), local stakeholders (the subdivision of Douala 4), and local community representatives (IDPs).

The objective of the scoring matrix (2) is to provide an analytical framework to assess the transformative impacts of development projects proposed in the optimal scenario vis-à-vis the resilient urban development of Douala 4 and Mambanda. The assessment of the transformative impacts draws on a list of priority scoring criteria linked to a set of measurable indicators, explained in the scores definitions grid (1).

For more information about the scoring in the scoring matrix, please refer to the scores definitions grid which details the scoring for each

indicator.

Scores definitions grid: indicators and scores

Each criterion is measured by one or more indicators, identified, and classified as a list beginning with "A1" and ending with "F5". The score of each indicator is defined on a scale from one to four (one representing the least impact and four the most). Scores are then detailed into a list of actions and their likely impacts, thus providing more qualitative information – this ensures the same understanding by all stakeholders when filling in the matrix.

Scoring and visualisation of the results

The last two columns of the table refer to the scoring of the projects by local stakeholders and local community representatives. The overall scoring is indicated in the "Total" column.

Transformative Impacts	Criteria	ID	Measurable Indicators			
				0	1	
A SOCIAL <i>The criteria that mitigate the impacts of a high demographic growth and high density while ensuring the wellbeing of residents</i>	Provision of basic infrastructure	A1	How much does the project support the provision of basic infrastructure*? <i>* Basic infrastructure refers to water, electricity, waste collection points</i>		Weak provision of basic infrastructure and confined to formal neighbourhoods / Indirect impact	Partial provision of infrastructure
	Financial accessibility	A2	Does the project improve people's financial accessibility to basic infrastructure?		Indirect impact	Inequal access to infrastructure
	Safety	A3	How much the project does impact the safety* of residents? <i>* Safety refers to both provision and accessibility to basic infrastructure by residents</i>		Informal accessibility to basic infrastructure / Indirect impact	Situation of informal communities and incomplete access
	Housing	A4	How much does the project improve residents' housing accessibility and provision*? <i>* This refers to the access to affordable and adequate housing</i>		Indirect impact on the housing accessibility and provision	Low impact on housing development
	Inclusivity	A5	How much the project does enhance social inclusivity between displaced and host communities?		Indirect Impact	Poor integration of communities and of host communities
B ENVIRONMENTAL <i>The criteria that mitigate the impacts of climate change and natural hazards, preserve natural areas and create a sustainable ecosystem</i>	Conservation of natural areas	B1	Does the project preserve and enhance natural areas*? <i>*refers to the mangrove, green spaces, forests</i>		Weak conservation of natural areas and no/little creation of new ones <1.000m2 natural areas/ 10,000p	Conservation of natural areas and no creation of new ones <1.000m2 natural areas
	Climate mitigation and adaptation	B2	Does the project mitigate or adapt to climate change and hazards impact?		Indirect Impact	Preventive measures and awareness
C ECONOMIC <i>The criteria that foster economic growth and the creation of employments</i>	Job creation	C1	Does the project create job opportunities for local populations and vulnerable populations (IDPs, women)?		Indirect job creation	Little direct but some creation
	Diversity of jobs	C2	Does the project diversify jobs?		Little job diversity (mainly low-skilled labour)	Emergence of new jobs and an already trained population
	Attraction	C3	Does the project attract or create new companies?		Growth of the informal sector	Weak attraction of companies and informal sector
D SPATIAL <i>The criteria that facilitate compactness* (UN-Habitat def) and ensure a coherent articulation of projects</i>	Accessibility	D1	Does the project facilitate residents' accessibility to social*, basic facilities and green spaces? <i>*refers to medical, education, sport and recreational facilities</i>		Indirect Impact	Limited accessibility
	Transformative impact	D2	How much does the project impact the implementation of other projects?		Low transformative impact	Medium transformative impact
	Activate public spaces	D3	Does the project create active streets*? <i>*Active streets refer to public spaces that promote pedestrian mobility and safety, attractiveness and mixed use</i>		Insecure and not animated public space	Safe but not very active public space
E URBAN GOVERNANCE <i>The factors at play to enable effective implementation of capital investments</i>	Legislation	F1	Is this intervention aligned with current legislation at subdivision/metropolitan/national level?			
	Funding	F2	Does the subdivision have the budget to implement the project?		External donations but no state participation	Project listed in investment portfolio (partial)
	Capacities	F3	Is the capacity of local technical staff sufficient to implement the intervention?		Good local capacity at every level + data available	Minimum of capacity available + support from organizations
		F4	Is the capacity of local technical staff sufficient to implement the intervention?		Good local capacity at every level + data available	Minimum of capacity available + support from organizations
		F5	Does the project promote stakeholder coordination?		No creation of new partnerships	New partnerships and coordination
Stakeholders Assessment					1% - 25%	25%
Local Community Assessment					1% - 25%	25%
				0	2	
TECHNICAL PRIORITY BASED ON NEED ASSESSMENT: how much is the project a priority/urgent on the short term action plan?					Very low priority	Low

(1) Scores definition

Scores		
2	3	4
Provision of basic infrastructure (offer)	Limited provision of all basic infrastructure (coverage)	Sustainable infrastructure providing all basic services
Accessibility to basic infrastructure	Limited accessibility: <i>Income-based/consumption fee schedule</i>	Affordable access to basic infrastructure
Unreliability/Insecurity: <i>Limited coverage</i>	Unsecurity: <i>Full but temporary coverage</i>	Security and sustainability: <i>Continuous and sustainable access to basic infrastructure</i>
Impact: low housing development	Medium impact: medium housing development	High impact: strong housing development
Integration of displaced communities and no improvement of both communities' socio-economic conditions	Better integration of displaced communities but limited improvement of both communities' socio-economic conditions	Displaced and host communities live together in harmony: good living conditions + equal opportunities
Conservation of natural areas and creation of new ones 2.000m2 natural areas/ 10,000p	Conservation of natural areas but little creation of new ones < 2.000m2 natural areas/ 10,000p	Conservation and creation of natural areas 2.000m2 natural areas/ 10,000p
Measures and awareness raising	Mitigation and adaptation measures but disorganised public awareness	Mitigation, adaptation and well-organised preventive measures
Good indirect job creation	Good direct and indirect job creation	Significant direct and indirect job creation
New types of jobs for skilled and educated population	Medium job diversity	Great job diversity for all
Attraction of industries and growth of the informal sector	Medium attraction and creation of industries and companies and growth of the informal sector	High attraction and creation of industries and companies and growth of the informal sector
Accessibility	Medium accessibility	Good accessibility
Transformative impact	High transformative impact	Very high transformative impact
Safe and animated public space	Safe and animated public space during the day but not at night	Safe and permanently animated public space
Provision of a better-suited legal framework (priority neighbourhoods, land restructuring, zoning)	Provision of a better-suited legal framework (priority neighbourhoods, land restructuring, zoning)	Good compliance with current legislation
Available funding in the priority projects of Douala 4 (total funding)	Available funding / external donations with state participation / distributors funding	Direct government funding
Lack of capacity/data support from external organisations	Lack of capacity/data + support from external organisations	Lack of capacity and data + no support from external organisations
Lack of capacity/data support from external organisations	Lack of capacity/data + support from external organisations	Lack of capacity and data + no support from external organisations
New partnerships but lack of coordination	New partnerships with little diversity + limited coordination	New partnerships with academia, public + private sectors + international organisations
50% - 50%	50% - 75%	75% - 100%
50% - 50%	50% - 75%	75% - 100%
4	8	10
High priority	High urgency	Critical

	TRANSFORMATIVE IMPACTS	SOCIAL				ENVIRONMENTAL		ECONOMIC		Att	
	PRIORITY SCORING CRITERIA	Provision of basic infrastructure	Accessibility	Safety	Housing	Inclusivity	Conservation of natural areas	Climate mitigation and adaptation	Job Creation		Diversity of jobs
	INDICATORS * * See score definitions matrix	How much does the project support the provision of basic infrastructure?	Does the project improve people's financial accessibility to basic infrastructure?	How much does the project does impact the safety of residents?	How much does the project improve residents' housing accessibility and provision*?	How much does the project does enhance social inclusivity between displaced and host communities?	Does the project preserve and enhance natural areas*?	Does the project mitigate or adapt to climate change and hazards impact?	Does the project create job opportunities (for local and vulnerable populations)?		Does the project create diversified jobs?
Infrastructure projects	WATER & SEWERAGE NETWORKS UPGRADING	4	4	3	4	3	2	2	1	1	
	ELECTRICITY NETWORK UPGRADING (green energy)	4	3	3	4	3	2	4	1	1	
	WASTE COLLECTION & RECYCLING SYSTEM (power plant, collection points, awareness-raising programme)	4	4	4	1	4	2	4	4	1	
	MOBILITY PROJECTS										
	New paved roads (e.g. permeable coating) and upgrading of existing roads (sidewalks, pavements, lighting) (expect in informal settlements)	4	1	1	4	4	1	3	4	4	
	Intermodal hub / urban integration	2	1	1	4	3	3	3	4	4	
	Bus line upgrading (stations, signage)	0	0	0	3	3	0	4	2	3	
	Green corridor for pedestrian / cycle track network	0	0	0	3	4	4	4	2	1	
	Communal mini-bus services development	0	0	0	4	4	0	4	3	1	
River shuttle service development / Piers and landing stages construction	0	0	0	2	3	0	1	4	4		
RESILIENT INFRASTRUCTURE											
Mitigation and adaptation projects (grey, blue, green, and digital infrastructure)	1	0	1	4	4	4	4	3	3		
Social-economic development projects	HOUSING DEVELOPMENT AND UPGRADING										
	Affordable housing for all/ Different housing typologies development	4	3	3	4	4	1	4	4	3	
	VERTICAL DENSIFICATION OF PUBLIC LAND on the structuring axes <i>Nouvelle Route et Ancienne Route</i>	3	2	2	3	3	1	3	4	4	
	LAND TENURE SECURITY (pooling of land titles and production of common land titles)	1	1	1	4	3	1	4	2	0	
	URBAN RENEWAL PROGRAMME										
	Functional and housing mix + vertical densification + social housing + roads + sidewalks + public space + social facilities	4	3	3	4	4	4	4	4	4	
	URBAN AGRICULTURE										
	Urban farms, short supply chain	0	0	0	0	4	4	4	1	1	
	PORT AUTONOME DE DOUALA (PAD)										
	Urban integration / Economic development (shops, boutiques, street vendors)	2	2	1	2	3	1	0	4	4	
	PUBLIC SPACE										
	Public squares and animation activities	2	1	2	2	4	4	4	1	1	
	DIVERSIFICATION OF ECONOMIC ACTIVITIES										
	Eco-tourism: hotels, tourist circuits (hiking, visits)	2	2	2	4	4	3	4	4	4	
	Economic and commercial development of Bonabéri (markets, shops, market hall, shopping centres, etc.)	2	2	2	4	4	3	4	4	4	
	CULTURAL, COMMUNITY CENTRES & LIBRARIES DEVELOPMENT	0	0	0	1	4	0	0	2	3	
	IDPs RECEPTION CENTRES CREATION (social inclusion)	0	0	0	0	3	0	0	2	3	
	TRANSFORMATION OF MAMBANBDA'S CMA INTO AN HOSPITAL	0	0	0	0	4	0	0	4	4	
	CREATION OF HEALTH CENTRES & MOBILE MEDICAL UNITS	1	1	1	2	4	0	0	4	4	
	PRIMARY SCHOOLS & KINDERGARTEN CREATION AND UPGRADING (including Mambanda's primary school)	1	1	1	3	4	3	4	4	4	
	BILINGUAL MAMBANDA RELOCALISATION & UPGRADING	1	1	1	3	4	3	4	4	4	
	CONSTRUCTION OF A FIRE STATION	0	0	0	0	0	1	1	3	0	
	RECREATIONAL & SPORT PROJECTS										
	Gymnasiums / Football and basketball courts	1	1	1	3	4	2	4	2	1	
	Vita trail	1	1	1	3	4	4	4	2	1	
	DITIGAL TOOLS										
	GIS portal implementation	1	1	1	1	4	1	3	1	2	
Online exchange platform, newsletters, NTC	1	1	1	1	4	1	3	1	1		
LOCAL CAPACITIES PROGRAMMES											
Information, education and communications services for health, education promotion and environmental awareness	1	1	1	1	4	1	1	4	4		
Improvement of the subdivision's capacity to design, plan and implement social programs and to monitor the effect of such programmes	1	1	1	1	1	1	1	1	1		
Technical assistance for the coordination of actors (ad hoc organisation) / Trainings of local technical staff	1	1	1	1	1	1	1	1	1		
REGULATION											
Zoning map	1	1	1	1	1	4	4	1	1		

(2) Scores grid matrix

Action	SPATIAL			URBAN GOVERNANCE					TECHNICAL PRIORITY BASED ON NEED ASSESSMENT: how much is the project a priority/urgent on the short term action plan?
	Accessibility	Transformative impact	Activate public spaces	Legislation	Funding	Capacities			
Does the project attract and create new enterprises?	Does the project improve residents' accessibility to "social", basic facilities and green spaces?	How much does the project impact the implementation of other projects?	Does the project create active streets*?	Is this intervention aligned with current legislation at subdivision/metropolitan/national level?	Does the subdivision have the budget to implement the project?	Is the capacity of local technical staff sufficient to implement the intervention?	Is the capacity of the government sufficient to implement the intervention?	Does the project promote stakeholder coordination?	
2	0	4	0	4	3	4	3	4	10
2	0	4	2	4	3	4	3	4	10
4	0	4	0	4	3	2	2	4	10
4	4	4	2	4	3	2	3	3	8
4	4	4	4	3	1	4	2	4	4
2	4	4	2	3	1	4	2	1	8
1	4	4	4	3	1	4	2	4	4
4	4	4	0	3	1	4	1	4	4
4	4	4	3	3	1	4	2	4	4
3	3	4	4	3	3	3	3	4	10
1	4	4	0	4	3	4	4	3	10
4	4	2	0	3	3	4	4	3	8
4	4	4	1	3	4	4	4	4	10
4	4	4	4	3	3	4	2	4	10
1	0	1	0	1	1	4	2	2	2
4	2	1	4	3	3	4	3	3	8
1	4	3	4	3	3	4	2	4	4
4	2	1	4	4	3	2	2	4	8
4	2	1	4	4	1	2	1	4	8
0	4	1	1	4	1	2	1	2	4
2	4	1	1	4	3	2	3	2	10
0	4	1	1	4	1	2	2	2	10
0	4	1	1	4	1	2	4	2	10
0	4	1	1	4	3	2	4	2	10
0	4	1	1	4	4	2	2	2	10
0	0	0	0	4	3	2	4	2	10
1	4	1	4	4	1	1	2	2	4
1	4	1	4	4	4	3	1	3	4
4	1	4	1	4	1	4	3	4	8
0	1	2	1	3	1	1	2	4	4
3	0	4	1	3	1	3	3	4	10
0	1	4	1	3	1	3	3	4	10
0	1	4	1	3	3	3	3	4	8
1	1	4	3	3	3	3	2	4	10

COTECH (November) Scenario validation workshop

Stakeholders assessment	Local community assessment	TOTAL
4	4	66
3	4	68
4	4	69
4	4	71
2	4	65
2	4	52
2	4	55
2	4	51
3	4	54
4	3	71
4	3	74
2	3	65
4	4	67
3	3	82
2	1	31
3	3	60
3	2	58
3	3	69
3	3	66
2	2	34
2	2	44
4	2	45
3	2	51
3	2	61
2	2	59
0	0	30
4	2	49
4	2	56
2	4	55
2	4	39
2	4	56
2	4	45
2	4	45
4	4	57

ANNEX B INVESTMENT CARDS

URBAN PLANNING AND
INFRASTRUCTURE IN
MIGRATION CONTEXTS
(UPIMC)

INVESTMENT CARDS

DOUALA 4, CAMEROON

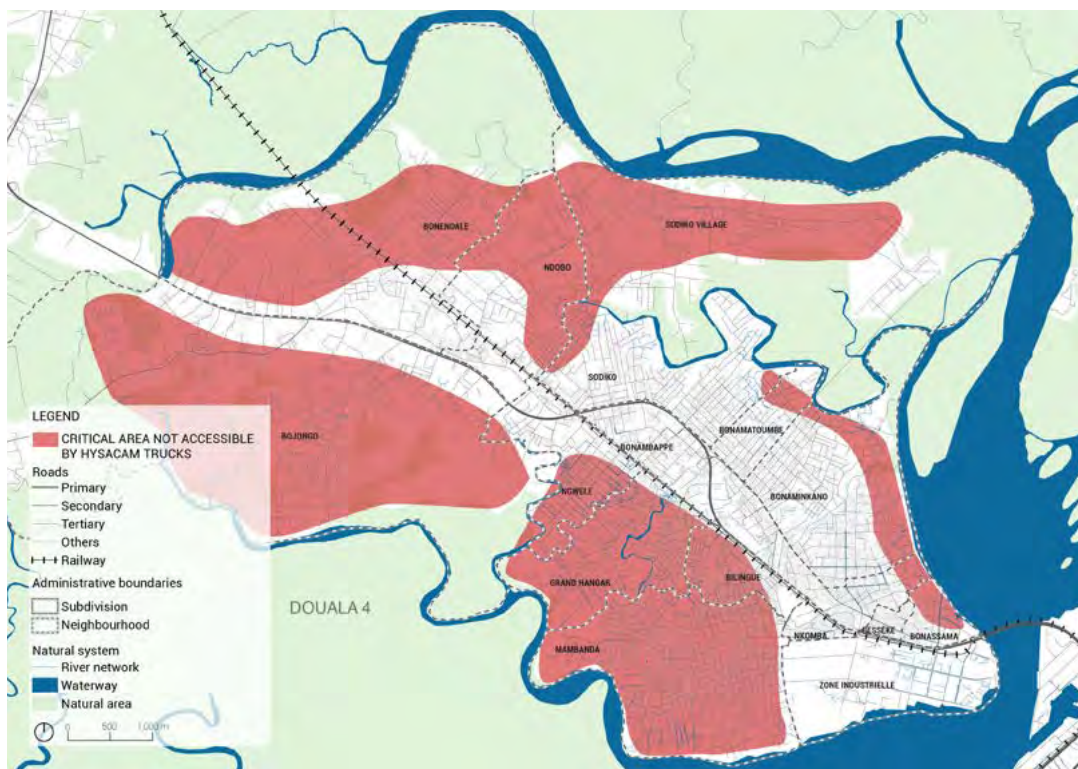
PRIORITY PROJECTS

- *Solid Management Waste System (SMWS) Project*
- *Water Supply and Sewerage Network Improvement Project*
- *Electricity Network and Production Unit Improvement Project*
- *Development of Information and Communication Technologies (ICTs) Project*
- *Urban Renewal Programme*
- *Ecotourism Development Programme*
- *Improvement of the Road Network*
- *Construction of Drains*
- *Construction of Hybrid Dykes*
- *Construction of Parks with Retention Ponds*
- *Digital Solutions for Climate Action*
- *Ecological Restoration of Mangrove Swamps*

URBAN PLANNING AND INFRASTRUCTURE IN MIGRATION CONTEXTS (UPIMC) INVESTMENT CARD

SOLID WASTE MANAGEMENT SYSTEM PROJECT

KEYWORDS: WASTE MANAGEMENT, WASTE TREATMENT, RECYCLING



Map: Critical areas of Douala 4 not accessible by HYSACAM's trucks. UN-Habitat, 2022

GENERAL INFORMATION



PROJECT TITLE Solid Waste Management System (SMWS) Project



TYPE OF PROJECT Basic Infrastructure, Awareness-raising, and Capacity-Building



LOCATION Subdivision of Douala 4 (CAD4), Douala, Cameroon



BENEFICIARIES • **Direct Beneficiaries:** at least **86,700 residents** (20 per cent of the local population of Douala 4, 2021) **including 23,070 IDPs** i.e., households not accessible by HYSACAM's trucks (no asphalt roads).



SDGS ALIGNEMENT

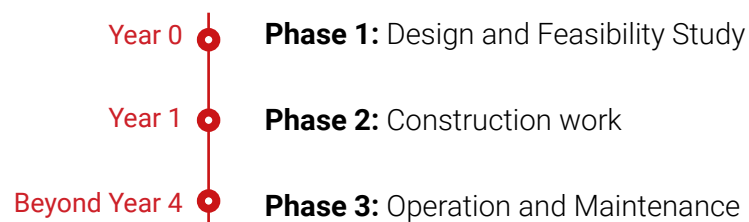


PARTNERS

- **Owner and implementer:** HYSACAM (Cameroon Public Sanitation Company) and the CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, and MINHDU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



TIMELINE



CONTACT PERSON

Subdivision of Douala 4



PROJECT OBJECTIVE

The project aims to **improve the SWM system of Douala 4** to provide a hygienic and healthy environment to all residents, protect natural areas, and change the culture of waste handling.



IDENTIFICATION OF CHALLENGES

Douala 4 currently struggles to provide an efficient SWM system due to the lack of infrastructure. HYSACAM's trucks collect only 32.2 per cent of waste due to the poor condition or absence of asphalt roads in the subdivision. As a result, **41.2 per cent of residents of Douala 4 use illegal dumping** to dispose their wastes, while 8.5 per cent households and informal workers pre-collect waste in areas non accessible by truck.

The standardisation of unauthorised dumping in drainage canals and natural area amplifies the risk of flooding. This participates in the creation of an unhealthy and unhygienic living environment with the spread of diseases through contaminated water and soil pollution. Pollution of waterways and water bodies leads to a loss of biodiversity and inefficient use of land and resources. Ultimately, the poor SMW system deteriorates residents' living conditions and jeopardises the good development of Douala 4.



OUTPUTS

Improving the SWM system in Douala 4 including:

- Infrastructure: capital investments to build/upgrade waste collection points, waste sorting and treatment facilities, close dumps, construct/refurbish landfills, provide bins, dumpsters, trucks, and transfer stations.
- Legal structures and institutions.
- Financial sustainability.

Strengthening operational capacity of HYSACAM as the operator of the SWM system.

Fostering citizen engagement:

- ☑Support awareness systems (campaigns, activities, events).
- ☑Develop education local and large-scale programmes.

Developing and implementing innovative solutions and partnerships:

- ☑Build partnerships with local and international universities.
- ☑Create partnerships with informal workers.



PROJECT LIFE CYCLE

[5 years]

Design and Feasibility Study, Implementation (improvement of the SWM system across Douala 4 with a focus on the identified crucial areas), Operation and Maintenance. Awareness-raising and capacity building throughout the project.

	Actions	Year 0	Year 1	Year 2
01	Waste audit (identify type of waste, volume, waste streams, targets for waste reduction) and create a waste management action plan.			
02	Preliminary design and cost-benefit analysis (engineering and environmental studies, assess current waste collection practices, identify recyclable, designate space allocated for waste management).			
03	Prepare the Design RFP for the bidding process and announcing the bid. Hold the bid evaluation and selection; Contract negotiation and awarding.			
04	Technical assessment and studies. Implementation of the construction work.			



PROJECT IMPACT

The project will ensure Douala 4 self-sufficiency in solid waste management. This will directly participate in the protection of the environment (SDG 13) and residents' health and wellbeing (SDG 3) through effective waste management measures. Indeed, this project will prevent contaminating water, spread of diseases, and reduce risks of flooding (SDG 6).

These interventions will offer a more secure and resilient urban environment to all residents. It will likely create new jobs for local populations within waste services, recycling, and recovery sectors in Douala 4. It is also a great opportunity to create partnerships between formal and informal sectors. Eventually, this project will improve the living conditions of Douala 4 while fostering its local economy and promoting social inclusivity.

Transformative impact (0-no transformative impact, 1-low, 2-medium, 3-high, 4-very high): The project is essential for the successful implementation of other projects (4/4):

- Developing waste collection points near dwellings including urban renewal projects in informal settlements and housing development projects.
- Developing waste collection points near social and recreational equipment (e.g., schools, kindergartens, sport facilities), private and public facilities (e.g., markets, shops).
- Developing waste collection points in public spaces.



FINANCIALS*

Total cost and sum per phase of the project life cycle (1 USD = 611 XAF)

- **Design and feasibility study, environmental advice:**
15 000 000 FCFA = USD 24 555
- **Construction works and equipment:** 3 082 500 000 FCFA = USD 5 046 005
- **Maintenance (5%) :** 154 125 000 FCFA = USD 252 300

Construction + maintenance costs: 3 236 625 000 FCFA = USD 5 298 305

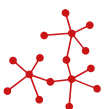
- **Administrative and management costs (10%):**
308 250 000 FCFA = USD 504 600
- **Cost for the construction of a biogas plant:**
1 800 000 000 FCFA = USD 2 946 415

Total cost (study, works, maintenance, transformation unit) : 5 051 625 000 FCFA = USD 8 269 275 (without maintenance and management costs)

Additional Support Needed

- Technical support
- Buy-in by key stakeholders (e.g., government, entities)

* All costs are indicative.



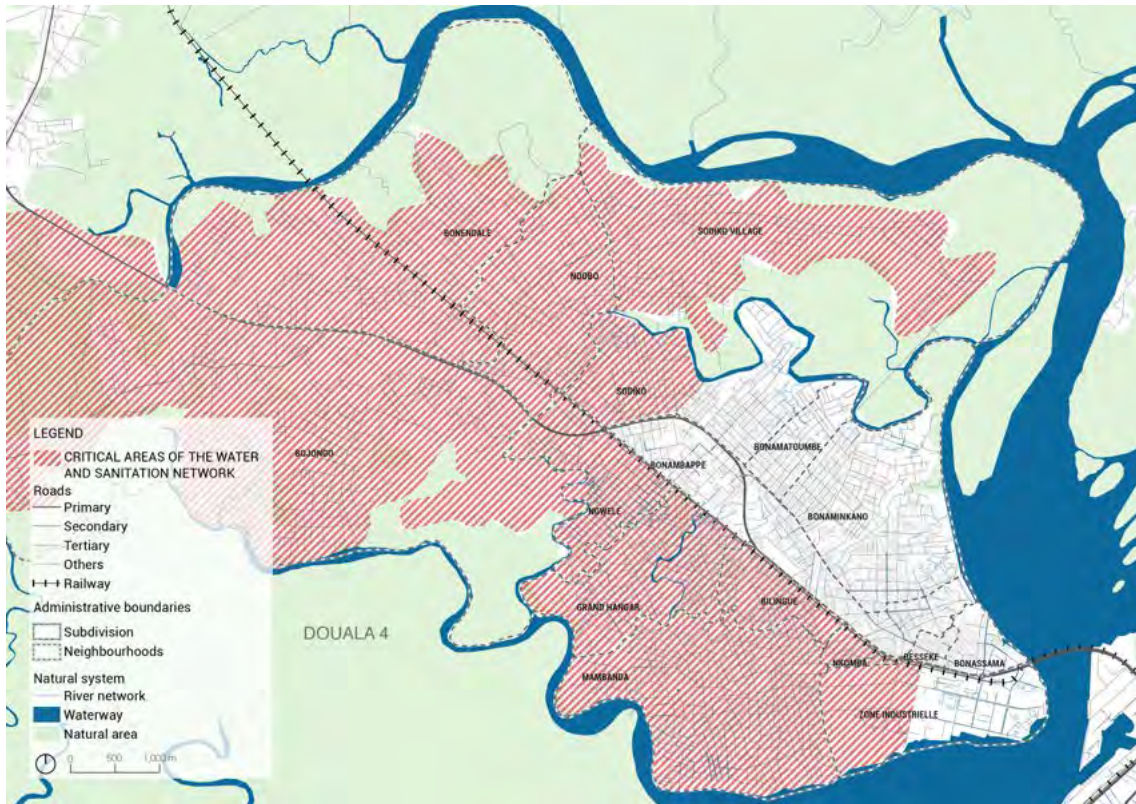
PROJECT VIABILITY

- **Technical impact:** The project feasibility study should be coupled with the study for the construction and improvement of asphalt roads and the project should be implemented as soon as possible to ensure the good operation and management of other projects.
- Need to increase the number of accessible collection points to reduce distances between collection points and dwellings (200-500 metres).

URBAN PLANNING AND INFRASTRUCTURE IN MIGRATION CONTEXTS (UPIMC) INVESTMENT CARD

WATER SUPPLY AND SEWERAGE NETWORK IMPROVEMENT PROJECT

KEYWORDS: WATER NETWORK, SEWERAGE, BASIC INFRASTRUCTURE



Map: Critical areas of Douala 4 without access to drinking water. UN-Habitat, 2022

GENERAL INFORMATION



PROJECT TITLE

Water Supply and Sewerage Network Improvement Project



TYPE OF PROJECT

Basic Infrastructure, Awareness-raising, and Capacity-Building



LOCATION

Subdivision of Douala 4 (CAD4), Douala, Cameroon.



BENEFICIARIES

- **Direct Beneficiaries:** at least **86,700 residents** (20 per cent of the local population of Douala 4, 2021) **including 23,070 IDPs**, currently without access to drinking water.
- **Indirect Beneficiaries:** businesses, shops, public services.



SDGS ALIGNEMENT

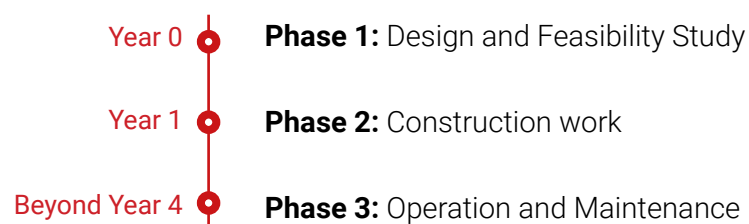


PARTNERS

- **Owner and implementer:** CAMWATER (Cameroon Water Utilities Corporation) and the CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, and MINH DU will manage the project
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



TIMELINE



CONTACT PERSON

Subdivision of Douala 4



PROJECT OBJECTIVE

The project aims to **improve the efficiency of the existing water and sewerage network** and to urgently **extend and develop drinking water pipe networks in the identified critical areas of Douala 4** without access to drinking water.



IDENTIFICATION OF CHALLENGES

CAMWATER's piped network only serves formal neighbourhoods of Douala 4, denying access to drinking water to a large part of the local population living in informal settlements, including internally displaced people (IDPs).

Less than 80 per cent of residents - both host and displaced communities - have access to drinking water in Douala 4 (UN-Habitat, 2022) and to a sewerage system. As a result, populations without access to drinking water buy water from unregulated boreholes and wells. Residents dump sewage down drains and outside their homes on roads. This increases social inequalities, keeps vulnerable populations in precariousness, and fosters the proliferation of waterborne diseases (cholera, typhoid).



OUTPUTS

- Replacing and upgrading the existing pipes in poor condition in Douala 4 water and sewerage network.
- Extending the pipe network in at least eight neighbourhoods (Bojongo, Bonendale, Ndobu, Sodiko, Sodiko Village, Ngwele, Grand Hangar, Mambanda).
- Supporting water and sanitation capacity building in Douala 4.



PROJECT LIFE CYCLE

[5 years]

Design and Feasibility Study, Implementation (upgrading and extension of the water pipe networks at the identified crucial areas), Operation and Maintenance. Awareness-raising and capacity-building throughout the project.

	Actions	Year 0	Year 1	Year 2
01	Preliminary design and cost-benefit analysis (engineering and environmental studies) and preparation of the project budget.			
02	Prepare the Design RFP for the bidding process and announcing the bid. The RFP must include conducting a detailed technical assessment, identify needed pipe's specifications including pipe diameter and material for the upgrading/extension of the water and sewerage existing networks, developing the design, and preparing the construction RFP.			
03	Prepare the Design RFP for the bidding process and announcing the bid. Hold the bid evaluation and selection; Contract negotiation and awarding.			
04	Technical assessment and studies. Implementation of the construction work.			



PROJECT IMPACT

The scope of the project is to improve access to drinking water for both host and displaced communities. The project will directly improve the living conditions and the livelihoods of residents of Douala 4 by providing secure and reliable access to drinking water, ensuring a reliable supply of clean water, and developing sustainable water sources.

This project will participate directly in the reduction of urban poverty (SDG 1) and the promotion of well-being (SDG 3) by ensuring secure, affordable, and sustainable access to drinking water for all (SDG 6), contributing to the promotion of an inclusive, safe, resilient, and sustainable subdivision (SDG 11).

Transformative impact (0-no transformative impact, 1-low, 2-medium, 3-high, 4-very high): The project is essential for the successful implementation of other projects (4/4):

- Providing access to drinking water to all dwellings including urban renewal projects in informal settlements and housing development projects.
- Providing access to drinking water to all social and recreational equipment (e.g., schools, kindergartens, sport facilities), private and public facilities (e.g., markets, shops).
- Providing access to drinking water in public spaces (public fountains).



FINANCIALS*

Total cost and sum per phase of the project life cycle (1 USD = 611 XAF)

- **Design and feasibility study, environmental advice:**

15 000 000 FCFA = USD 24 540

- **Construction works and equipment:**

- Price for 75 hectares : 457 814 850 FCFA = USD 748 982

- Unit price : 6 104 198 FCFA = USD 9 987

- **Maintenance (5%)** : 22 890 743 FCFA = USD 37 450

Construction + maintenance costs: 480 705 593 FCFA = USD 786 432

- **Administrative and management costs (20%):**

91 562 970 FCFA = USD 149 799

Total cost (study, works, maintenance): FCFA 495 705 593 = USD 810 972 (without the administrative and management costs)

Additional Support Needed

- Technical support
- Buy-in by key stakeholders (e.g., government, entities)

* All costs are indicative.



PROJECT VIABILITY

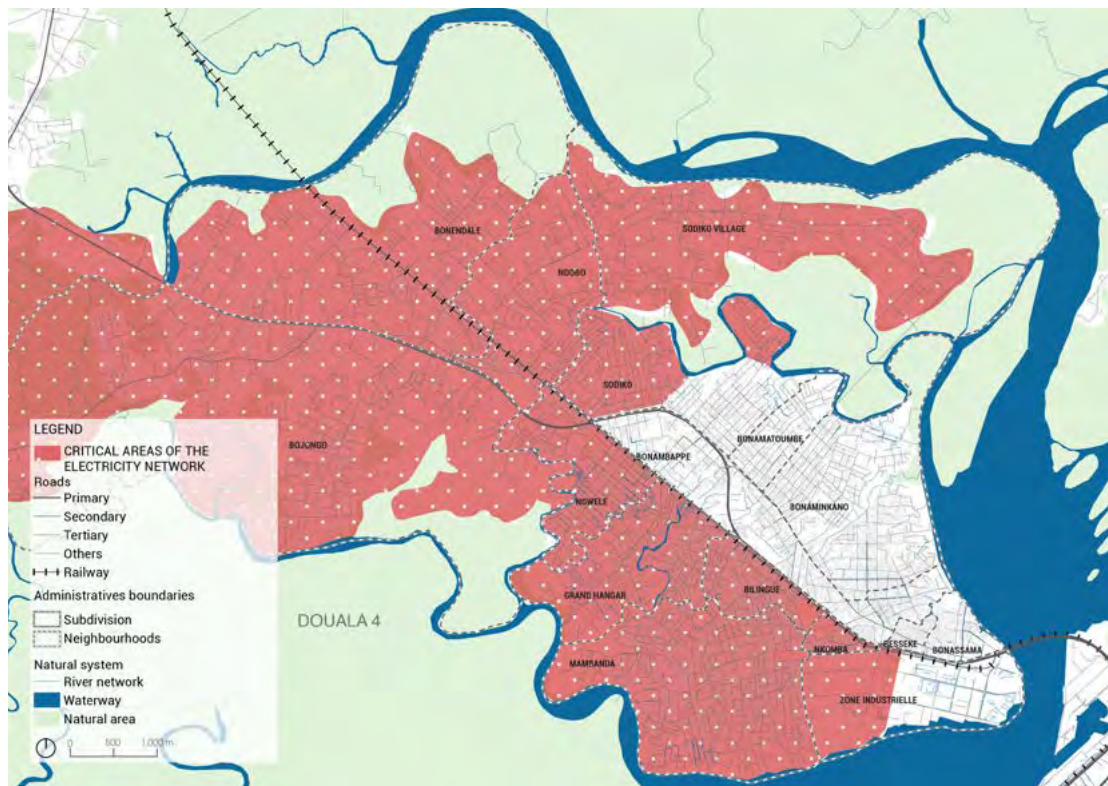
- **Technical viability:** The project feasibility study should be coupled with the study for the construction and improvement of asphalt roads, as the construction work will take place at the same time. Urban renewal projects will take into consideration the creation of basic infrastructure.

- Total length of the upgrading and extension of the water network: **406 kilometres** (366 kilometres of upgrading + 40 kilometres of extension).

URBAN PLANNING AND INFRASTRUCTURE IN MIGRATION CONTEXTS (UPIMC) INVESTMENT CARD

ELECTRICITY NETWORK AND PRODUCTION UNIT IMPROVEMENT PROJECT

KEYWORDS: ELECTRICITY GRID, ENERGY, PUBLIC LIGHTING



Map: Critical areas of Douala without access to electricity. Source: UN-Habitat based on Kopp association, 2022

GENERAL INFORMATION



PROJECT TITLE

Electricity Network and Production Unit Improvement Project



TYPE OF PROJECT

Basic Infrastructure, Awareness-raising, and Capacity-Building



LOCATION

Subdivision of Douala 4 (CAD4), Douala, Cameroon.



BENEFICIARIES

- **Direct Beneficiaries:** at least **86,700 residents** (20 per cent of the local population of Douala 4, 2021) **including 23,070 IDPs** i.e., households currently without formal access to the electricity grid.



SDGS ALIGNEMENT

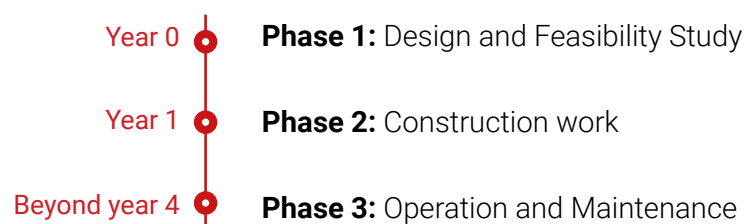


PARTNERS

- **Owner and implementer:** ENEO (energy company of Cameroon) and the CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



TIMELINE



CONTACT PERSON

Subdivision of Douala 4



PROJECT OBJECTIVE

The project aims to **improve the efficiency and reliability of the electricity transmission network, production unit, and system management** and support Douala 4's efforts in ensuring adequate electricity supply.



IDENTIFICATION OF CHALLENGES

Douala 4's electricity transmission network fails to provide a reliable and efficient source of energy supply, disrupting all activities in the subdivision. **Households face instability with frequent voltage drops and recurrent power cuts.** Due to the limited coverage, unregulated connections to the main electricity grid mushroomed in Douala 4. People are also forced to use harmful and polluting fuels for cooking and other activities as an alternative to electricity. This accelerates greenhouse gas emissions and air pollution and impacts the nearby natural resources and areas, creating an unhealthy and polluted urban environment.

At the level of public space, street lighting remains limited and concentrated along the main asphalt roads. It severely diminishes the animation of streets, preventing community life at night. The lack of street lighting in most neighbourhoods creates an unsafe environment especially for girls and women and fosters social segregation. Eventually, **the deficient electricity network not only disrupts energy supply but also generates socio-economic issues** that need to be addressed to improve the urban environment of Douala 4.



OUTPUTS

Technical outputs

- Improving the electricity production unit.
- Upgrading and extending the electricity transmission network.
- Improving the electricity system management.
- Purchasing machinery and equipment for maintenance of the electricity transmission network.
- Developing street lighting.

Capacity-building outputs

- Providing project implementation support to ENEO as the operator of the electricity system.
- Supporting electricity and energy capacity building in Douala 4.
- Developing innovative and new types of energy supply (renewable and clean energies) through PPPs and partnerships with universities.



PROJECT LIFE CYCLE

[5 years]

Design and Feasibility Study, Implementation (upgrading and extension of the electricity transmission network at the identified crucial areas, and improvement of the electricity production unit), Operation and Maintenance. Awareness-raising and capacity building throughout the project.

	Actions	Year 0	Year 1	Year 2
01	Preliminary design and cost-benefit analysis (engineering and environmental studies) and preparation of the project budget.			
02	Prepare the Design RFP for the bidding process and announcing the bid. The RFP must include conducting a detailed technical assessment, identify needed power lines' specifications for the the improvement of the existing electricity network and its extension, developing the design, and preparing the construction RFP.			
03	Prepare the Design RFP for the bidding process and announcing the bid. Hold the bid evaluation and selection; Contract negotiation and awarding.			
04	Technical assessment and studies. Implementation of the action plan.			



PROJECT IMPACT

The goal of this project is to reduce the number of people living in the dark by ensuring an affordable and reliable access to electricity supply (SDG 7). The improvement of the transmission electricity network will prevent the use of polluting fuels, reduce air pollution, and promote the well-being for both host and displaced communities (SDG 3). It is a step forward to develop renewable and clean energy in the coming years (solar, biogas, SDG 13).

The expansion of the street lighting network across Douala 4 will promote social inclusivity and community building, creating a secure and lively environment day and night. The inclusion of girls and women in public space will directly promote gender equality and women's empowerment (SDG 5, 10). This project is a powerful social tool that will foster social inclusivity between host and displaced communities.

Transformative impact (0-no transformative impact, 1-low, 2-medium, 3-high, 4-very high): The project is essential for the successful implementation of other projects (4/4):

- Providing access to electricity supply to all dwellings including urban renewal projects in informal settlements and housing development projects.
- Providing access to electricity supply to all social and recreational equipment (e.g., schools, kindergartens, sport facilities), private and public facilities (e.g., markets, shops).
- Improving the street lighting network in public spaces.



FINANCIALS*

Electricity ENEO : Total cost and sum per phase of the project life cycle

(1 USD = 611 XAF)

- Design and feasibility study, environmental advice: 20 000 000 FCFA = USD 32 734
- Construction works and equipment:
- Price pour 75 hectares: 1 442 373 000 FCFA = USD 2 360 459
- Unit price: 19 231 640 FCFA = USD 31 473
- Maintenance (5%) : 72 118 650 FCFA = USD 118 023

Construction + maintenance costs: 1 514 491 650 FCFA = USD 2 478 482

- Administrative and management costs (10%): 288 474 600 FCFA = USD 472 092

Total cost (study, works, maintenance): 1 534 491 650 FCFA = USD 2 511 216 (without the administrative and management costs)

Green energy: Total cost and sum per phase of the project life cycle

(1 USD = 611 XAF)

- Design and feasibility study, environmental advice: 20 000 000 FCFA = USD 32 734
- Construction works and equipment:
- Price pour 75 hectares: 1 507 584 000 FCFA = USD 2 466 923
- Unit price: 20 101 120 FCFA = USD 32 895
- Maintenance (5%) : 75 379 200 FCFA = USD 123 357

Construction + maintenance costs: 1 582 963 200 FCFA = USD 2 590 280

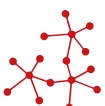
- Administrative and management costs (10%): 301 516 800 FCFA = USD 493 428

Total cost (study, works, maintenance): 1 602 963 200 FCFA = USD 2 623 014 (without management costs)

Additional Support Needed

- Technical support
- Buy-in by key stakeholders (e.g., government, entities)

* All costs are indicative.



PROJECT VIABILITY

- **Technical viability:** The project feasibility study should be coupled with the study for the construction and improvement of asphalt roads, as the construction work will take place at the same time.

URBAN PLANNING AND INFRASTRUCTURE IN MIGRATION CONTEXTS (UPIMC) INVESTMENT CARD

DEVELOPMENT OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTS) PROJECT

KEYWORDS: INFORMATION AND COMMUNICATION TECHNOLOGIES

 **UN HABITAT**
FOR A BETTER URBAN FUTURE



GENERAL INFORMATION



PROJECT TITLE

Development of Information and Communication Technologies (ICTS) Project



TYPE OF PROJECT

Telecommunication infrastructure and capacity-building



LOCATION

Subdivision of Douala 4 (CAD4), Douala, Cameroon.



BENEFICIARIES

- **Direct beneficiaries:** The total population of Douala 4 (**433,500 inhabitants**) with a focus on 290,445 residents (67% of the local population of Douala 4, 2021) including **23,070 IDPs**, i.e. households currently without access to ICTs living in informal settlements.
- **Indirect beneficiaries:** Companies, private and public facilities, and local institutions.



SDGS ALIGNMENT

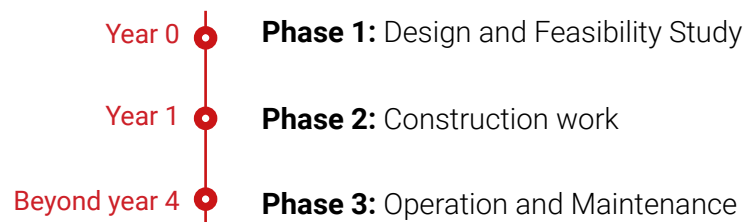


PARTNERS

- **Owner and implementer:** CAMTEL and the CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINH DU will manage the project.
- **Donor/financier:** One or more funding entities are required to support project implementation on the ground.



TIMELINE



CONTACT PERSON

Subdivision of Douala 4



PROJECT OBJECTIVE

The project aims to **improve access to effective and affordable information and communication technologies (ICTs) services**, strengthen the legal, regulatory, and institutional framework for developing ICTs accessibility and develop local ICTs management skills.



IDENTIFICATION OF CHALLENGES

Poor broadband connectivity in the city of Douala and particularly in Douala 4 is a major obstacle to the provision of broadband services. Fiber optics is limited to a few areas of the subdivision and does not serve informal neighbourhoods.

The lack of broadband wireless infrastructure has a strong impact on the development and smooth

running of businesses, including small and medium-sized enterprises. They require easy access to ICTs to foster their economic growth. However, access to ICTs is currently not affordable, does not meet local needs and Douala 4 lacks IT skills.



OUTPUTS

Technical results

- Deployment of a wireless broadband infrastructure throughout the subdivision
- Deployment of ICT applications.

Capacity building outputs

- Institutional strengthening and development of a regulatory framework for ICT.
- Development of institutional and human technical capacities in ICT infrastructure management.
- Training of local experts on the operation of deployed wireless communication networks.



PROJECT LIFE CYCLE

Design and feasibility study, implementation (deployment of a broadband wireless infrastructure throughout the municipality), operation and maintenance. Capacity building throughout the project.

	Actions	Year 0	Year 1	Year 2
01	Preliminary design and cost-benefit analysis (engineering and environmental studies) and preparation of the project budget.			
02	Prepare the Design RFP for the bidding process and announcing the bid. The RFP must include conducting a detailed technical assessment, identifying required technologies and material (hardware, optical fiber, radio, TV, etc.), developing the design, and preparing the construction RFP.			
03	Prepare the Design RFP for the bidding process and announcing the bid. Hold the bid evaluation and selection; Contract negotiation and awarding.			
04	Technical assessment and studies. Implementation of the action plan.			



PROJECT IMPACT

Improving access to effective and affordable ICTs will promote the local economic development of Douala 4 (SDG 8) but also the strengthening of institutions (SDG 16). This will stimulate innovation and entrepreneurship, increase productivity, facilitate links between local, regional and international markets and enable access to new technologies.

The project will improve household communications. This will reduce social inequalities (SDG 10) and facilitate access to online services that are not available in the area (education programmes, government applications, etc.).

Transformative impact (0-no transformative impact, 1-low, 2-medium, 3-high, 4-very high): The project has a medium impact on the successful implementation of other projects (**2/4**):

- Provide access to ICTs for all housing, including urban renewal projects in informal settlements and housing development projects.
- Provide access to ICTs for all social and recreational facilities (e.g., schools, nurseries, sports facilities), institutions and businesses.



FINANCIALS*

Total cost per meter for the upgrading of the road network (1 USD = 611 XAF)

- Design and feasibility study (environmental)
- Construction works and equipment: 2 936 495 451 FCFA = USD 4 743 569
- Maintenance (5%): 146 824 772 FCFA = USD 225 884

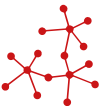
Construction costs + maintenance: 3 083 320 223 FCFA = USD 4 743 569

Administrative and management costs (10%)

Additional Support Needed

- Technical support
- Buy-in by key stakeholders (e.g., government, entities)

* All costs are indicative.



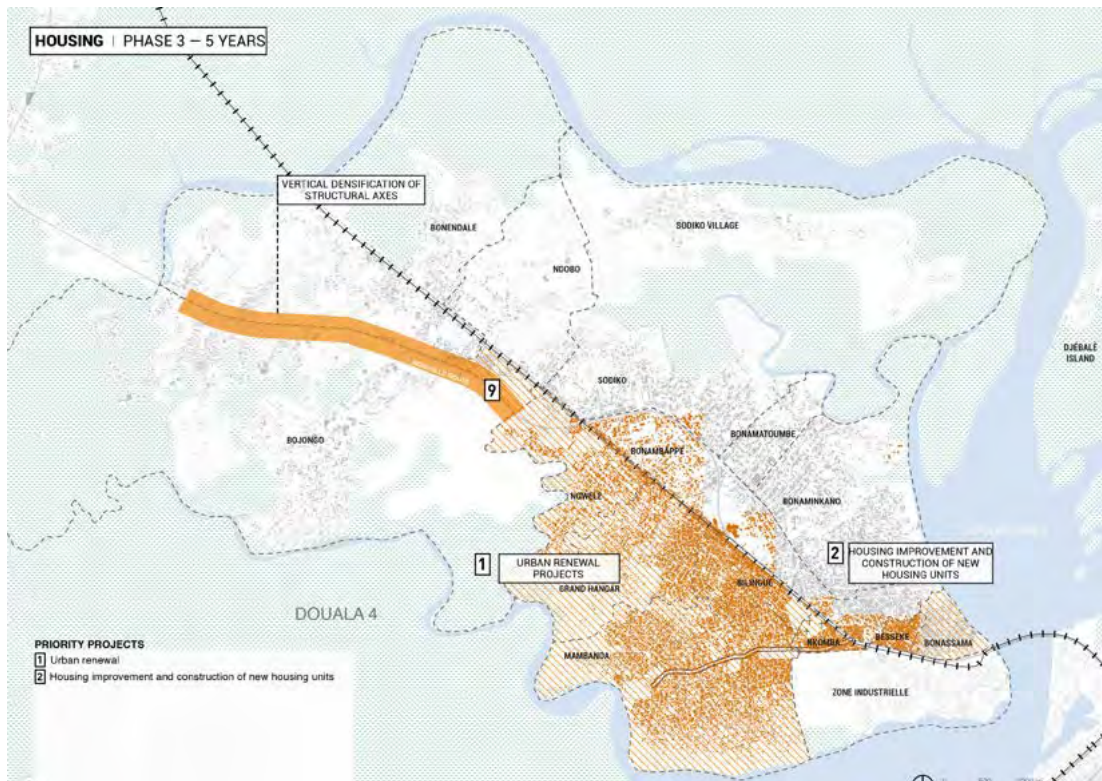
PROJECT VIABILITY

- **Technical viability:** The feasibility study for the project should be coupled with the study for the construction and improvement of paved roads and basic infrastructure, as the construction work will take place at the same time.

URBAN PLANNING AND INFRASTRUCTURE IN MIGRATION CONTEXTS (UPIMC) INVESTMENT CARD

URBAN RENEWAL PROGRAMME

KEYWORDS: HOUSING, SOCIAL MIX



Map: Neighbourhoods targeted by the urban renewal projects by 2030. Source: UN-Habitat, 2022

GENERAL INFORMATION



PROJECT TITLE Urban Renewal Programme



TYPE OF PROJECT Housing, Urban renewal project, Functional mix



LOCATION Subdivision of Douala 4 (CAD4), Douala, Cameroon.



BENEFICIARIES • **Direct Beneficiaries:** at least **86,700 residents** (20 per cent of the local population of Douala 4, 2021) **including 23,070 IDPs.**



SDGS ALIGNEMENT

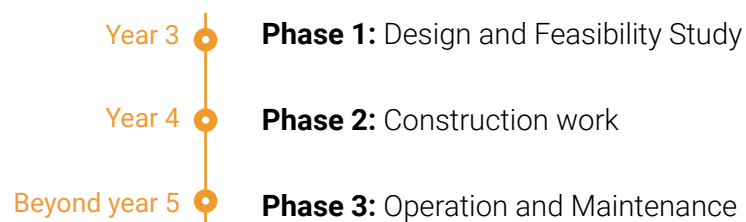


PARTNERS

- **Owner and implementer:** Social landlords, land developers, the CUD and CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINEPDED, and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



TIMELINE



CONTACT PERSON



PROJECT OBJECTIVE

The project aims to **develop and diversify the housing supply** through urban renewal projects to improve the living conditions in informal settlements by fostering social and functional diversity. The objective is to **densify the urban fabric and provide social and economic services at neighbourhood level**. The project will offer new public and private housing facilities through vertical densification, social facilities (health centre in each neighbourhood, primary school, cultural and social centres, and recreational facilities) and commercial units on the ground floor of the buildings. This new infrastructure will have to adapt to the risks of flooding to protect the residents and mitigate the effects of climate change.



IDENTIFICATION OF CHALLENGES

Douala 4 is experiencing uncontrolled urban sprawl at the expense of rural areas and vulnerable populations. The subdivision is composed of formal and informal settlements but the six densest neighbourhoods – identified during field analysis and participative workshops – are mainly composed of informal settlements and require urgent priority interventions. These high-density neighbourhoods are often located in flood-prone areas, offering unhealthy and poor living conditions. These swampy areas, combined with the lack of basic infrastructure, make these

neighbourhoods conducive to the spread of disease. Nevertheless, vulnerable populations settle in these areas not suitable for construction due to poor control of land titles. Future population growth and the estimated influx of internally displaced persons in the coming years will increase the number and density of informal settlements in urbanising areas. Urban renewal projects will provide an opportunity to intervene quickly and restructure these areas to improve the living conditions of the population.



OUTPUTS

Technical outputs

- Building decent and resilient housing to provide social mix (public and private housing) and increase densification.
- Providing basic infrastructures (water and sewerage system, electricity network, solid waste management system).
- Paving of secondary and tertiary roads and sidewalks.

- Building social (healthcare centres and schools) and recreational facilities (gymnasium, parks with multi-sport ground).
- Developing cycle tracks and bicycle hire to develop soft mobility.
- Promoting different types of collaboration with private stakeholders to develop soft mobility.



PROJECT LIFE CYCLE

[Beyond 5 years]

Design and Feasibility Study, Concept and Detailed Design, Work Construction, Operation and Maintenance.

	Actions	Year 3	Year 4	Year 5
01	Preliminary design and cost-benefit analysis (engineering and environmental studies) and preparation of the project budget.			
02	Prepare the Design RFP for the bidding process and announce the bid. The RFP must include conducting a detailed technical assessment, habitat and land study, social environmental analysis, engineering work, and biodiversity.			
03	Prepare the Design RFP for the bidding process and announcing the bid. Hold the bid evaluation and selection; Contract negotiation and awarding.			
04	Technical assessment and studies. Implementation of the action plan.			



PROJECT IMPACT

Local stakeholders of the subdivision of Douala 4 and local communities stressed the lack of decent housing and social and recreational facilities in the six densest neighbourhoods, reinforcing inequalities. The urban renewal of Mambanda would significantly improve the living conditions of a large part of the population, including IDPs, as it is the most densely populated neighbourhood of Douala 4.

The project would provide decent and affordable housing and better living conditions by mitigating health and flood risks (SDGs 1, 3). The inhabitants would have a better access to housing equipped and covered by modern and innovative basic infrastructures (SDGs 6, 7). The functional and social mix at the heart of urban renewal projects would

contribute to poverty reduction and better organise resilient urban development (SDGs 1, 11).

Transformative impact (0-no transformative impact, 1-low, 2-medium, 3-high, 4-very high): The project is essential for the successful implementation of other projects (4/4):

- Addressing demographic growth by controlling urban sprawl and providing a diversified housing supply.
- Creating social diversity and vibrant neighbourhoods.
- Improving the inhabitants' living conditions to access social and economic centralities.
- Contributing to the activeness of the subdivision.



FINANCIALS*

Total cost and sum per phase of the project life cycle (1 USD = 611 XAF)
 - Reference price for private housing - 200 000 FCFA / m² = USD 327.3 / m²
 - Reference price for affordable housing -160 000 FCFA / m²= USD 262 / m²

Standard/ Norms

- T1: (1 living room + 1 bathroom + 1 kitchen + 1 bedroom) - surface 42 m²
- T2: surface 66 m²
- T3: surface 84 m²
- T4: surface 100 m²

Cost work without charges – Private housing

- T1: 8 400 000 FCFA / USD 13 748
- T2: 13 200 000 FCFA / USD 21 607
- T3: 16 800 000 FCFA / USD 27 496
- T4: 20 000 000 FCFA / USD 33 000

Cost work without charges – Affordable housing

- T1: 6 720 000 FCFA / USD 11 000
- T2: 10 560 000 FCFA / USD 17 283
- T3: 13 440 000 FCFA / USD 21 997
- T4: 16 000 000 FCFA / USD 26 187

Management cost: 20 per cent of the price of the work

Additional Support Needed

- Technical support
- Buy-in by key stakeholders (e.g., government, entities)

* All costs are indicative.



PROJECT VIABILITY

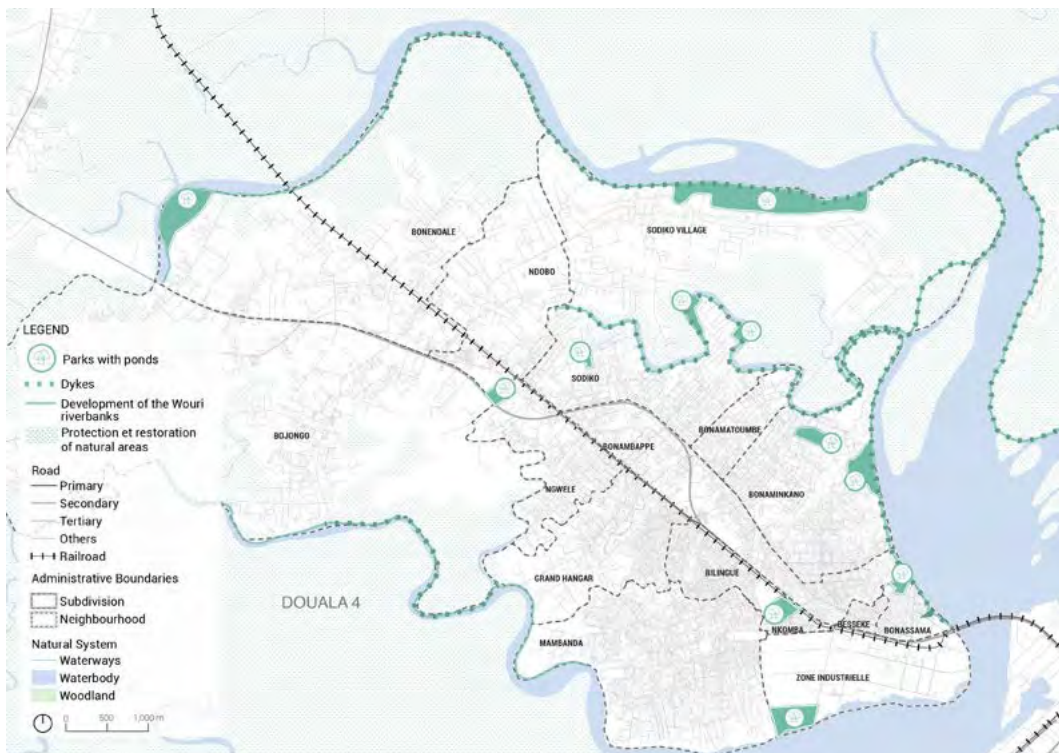
• **Technical viability:** The programme feasibility study should be carried out after the upgrading of the water and sewage system and the extension of the electricity network and the construction of waste collection points. Upstream, an assessment of the housing stock and land tenure should be carried out, with Mambanda and Grand Hangar as priority intervention areas. This project will represent a lever for other projects: development of economic centralities and the implementation of ICTs.

URBAN PLANNING AND INFRASTRUCTURE IN MIGRATION CONTEXTS (UPIMC)

INVESTMENT CARD

ECOTOURISM DEVELOPMENT PROGRAMME

KEYWORDS: ECO-TOURISM, LOCAL ECONOMY, COMMUNITY-BASED DEVELOPMENT



Map: Identified areas to develop eco-tourism. UN-Habitat, 2022

GENERAL INFORMATION



PROJECT TITLE Ecotourism Development Programme



TYPE OF PROJECT Conceptual programme with a variety of projects including infrastructure development, capacity-building and technical assistance.



LOCATION Subdivision of Douala 4 (CAD4), Douala, Cameroon.



BENEFICIARIES Lack of data



SDGS ALIGNEMENT



PARTNERS

- **Owner and implementer:** Civil Society Organisations (CSOs), the CUD4, private sector and public sector will oversee the implementation, maintenance, and sustainability of the programme.
- **Project management:** CUD, CAD4, MINEPAT, MINFI, MINEPDED, MINTOURISME and MINHDU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



CONTACT PERSON

Subdivision of Douala 4



PROJECT OBJECTIVE

The programme aims to **restore, preserve, and value biodiversity and natural areas in Douala 4 by supporting the implementation of community-based ecotourism (CBET)**. The valuation and promotion of the natural assets of Douala 4 will make it a lever for economic development and an attractive tourist site.



IDENTIFICATION OF CHALLENGES

Douala 4 benefits from valuable and remarkable natural areas and resources. However, **this natural heritage remains under-exploited, unprotected, and challenged by human activities and settlements**. For instance, the mangrove is gradually disappearing due to urban sprawl and lack of regulation and control. Human activities threaten the sustainability of the subdivision's natural areas due to the low awareness of the local populations of the value of their surrounding natural environment.

Nevertheless, the protection and valuation of these sites of interest represent a great opportunity to foster local economic growth and create new job opportunities for the local populations. The main challenge will be to develop community-based ecotourism initiatives that improve local livelihoods and develop local capacities. The direct implication of the local populations in this programme will diversify the local economy with the creation of diverse, qualified, and sustainable jobs.



OUTPUTS

Technical assistance

- Support the subdivision to adopt sustainable measures and regulations for the management of natural areas and resources.
- Develop a framework that integrates conservation and development through ecotourism.
- Support the development of local tourism operators to ensure:
 - Respect of the framework
 - Strong local participation
 - Protection of the biodiversity and natural areas

Development of Infrastructure

- Design eco-tourism activities centred on local capacity development, improvement of local livelihoods and the preservation of biodiversity:
 - Hiking trails

- Parks with activities

- Urban agriculture

- Strengthening fish farming

- Develop commercial infrastructure and cultural equipment:

- Hotels, restaurants, shops

- Museum

Capacity-building

- Foster awareness of the ecotourism economy and the value of natural and cultural resources (campaigns, activities, school programmes).
- Develop training for local populations.
- Develop partnerships between local stakeholders, researchers, local populations, local NGOs, government agencies.



LIFE CYCLE

[Beyond 5 years]

Design and Feasibility Study, Implementation, Operation and Maintenance.

	Actions	Year 6	Year 7	Year 8
01	Preliminary phase : Feasibility studies (audit of existing ecotourism or natural sites, choice of economic and management model, measures to prevent negative impacts on environment).			
02	Design preparation : choice of economic and management model, respect of standards and regulations. Preparation of bids for each identified project.			
03	Project management and execution of the projects: economic activities projects and ecotourism projects.			



PROJECT IMPACT

“Tourism is one of the key sectors driving social economic development in the continent of Africa” (UNEP, 2020). This programme aims to ensure that the eco-tourism sector contributes effectively to the sustainable development of Douala 4 (SDG 11). It will participate in the preservation of natural areas and biodiversity and foster the economic development of Douala 4 through the implementation of sustainable, resilient, and commercial infrastructure (parks, hiking trails, hotels, restaurants), job creation (hotels, restoration, nature protection, touristic trail, etc.) and capacity-building (training, partnerships).

The development of local capacities will make sure that revenues flow into the subdivision, whereas raising awareness among local populations and stakeholders will mitigate negative impacts on natural areas and resources (SDGs 8, 16). Collaboration between local stakeholders, researchers, local populations, Civil Society Organisations (CSOs), and government agencies will strengthen the community base and encourage local initiatives. There is a scope to increase inclusiveness between host and displaced communities. Overall, the protection of biodiversity and natural areas will directly improve the living conditions of residents (SDGs 3, 13, 15) and the attractiveness of Douala 4.



PROJECT VIABILITY

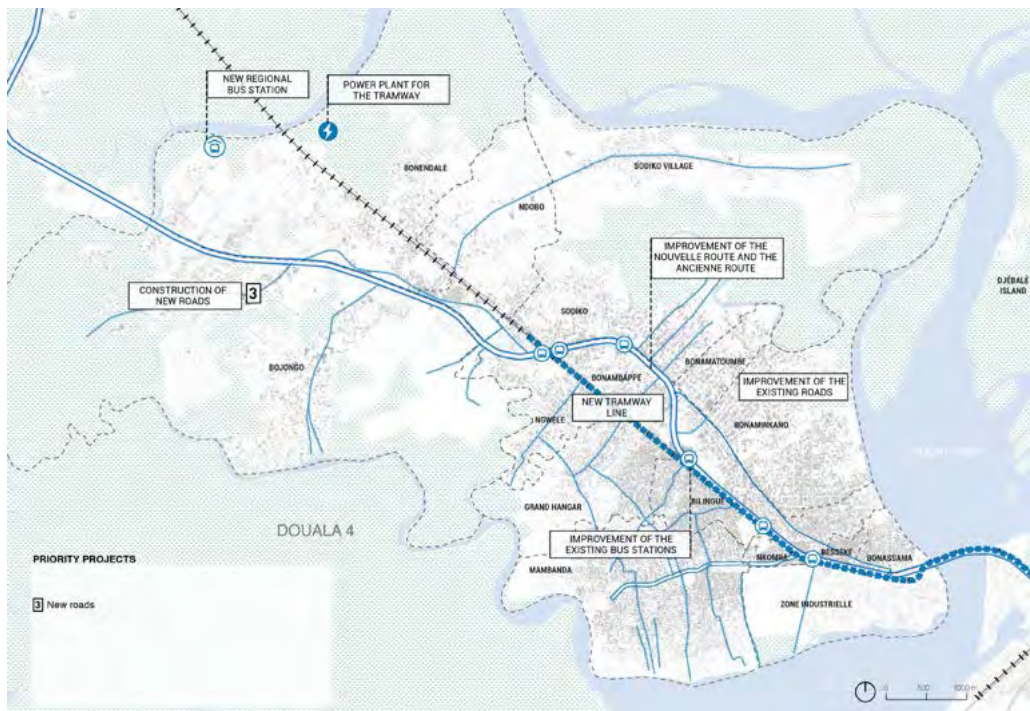
- **Technical viability:** The programme will contribute to the **protection and enhancement of 500 hectares of natural areas**¹ (30 per cent of Douala 4), **the creation of 130 hectares of planted areas** and the development of **43.351 kilometres of riverbanks**.

¹ Approximation based on the current area of Douala 4, 39,15 km².

URBAN PLANNING AND INFRASTRUCTURE IN MIGRATION CONTEXTS (UPIMC) INVESTMENT CARD

IMPROVEMENT OF THE ROAD NETWORK

KEYWORDS: MOBILITY INFRASTRUCTURE, ROADS, SOFT MOBILITY



Map: Improvement of the road network by 2030. Source: UN-Habitat, 2022

GENERAL INFORMATION



PROJECT TITLE



TYPE OF PROJECT

Mobility infrastructure and Capacity building



LOCATION

Subdivision of Douala 4 (CAD4), Douala, Cameroon.



BENEFICIARIES

- **Direct Beneficiaries:** the total population of Douala 4 (433,500 residents) with a focus on 290,445 residents (67 per cent of the local population of Douala 4, 2021) including **23,070 IDPs**.



SDGS ALIGNEMENT

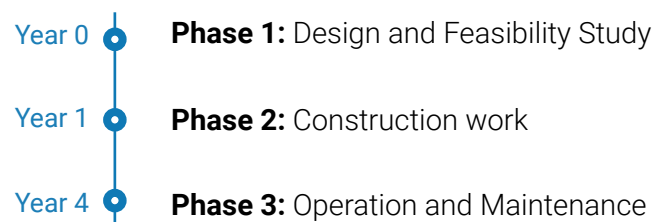


PARTNERS

- **Owner and Implementer:** CUD, CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project Management:** CUD, CAD4, MINTRANSPORTS et MINH DU will manage the project.
- **Donor/Financier:** One or more funding entities are required to support project implementation on the ground.



TIMELINE



CONTACT PERSON

Subdivision of Douala 4



PROJECT OBJECTIVE

The road restructuring project is the first stage in the overall mobility programme. The renovation and extension of the road network will structure mobility infrastructure within Douala 4. This project aims to **link residential areas, economic centres, and social facilities**. It will contribute to the decongestion of the city by encouraging the development of non-motorised means of transport (bicycle, pedestrian). The development of pavements with trees and public lights will make pedestrian travel safer, reduce air pollution and make the roads more comfortable. The development of cycle paths should be considered.



IDENTIFICATION OF CHALLENGES

Douala 4's road network is uneven and fragmented with main roads located near the industrial zone and the administrative neighbourhoods, as well as a secondary and tertiary road network in poor condition. The secondary and tertiary roads serve the neighbourhoods, some of which are informal settlements and areas undergoing urbanisation. The few existing roads in these neighbourhoods are dirt roads and are often flooded during rainy periods, making them prone to accidents. As a result, the mobility of the inhabitants is limited within the

neighbourhoods and towards the other subdivisions of Douala, marginalising them and amplifying precariousness. During the workshops, the state of the road network was mentioned as a major challenge for access to economic centres, employment, and social and recreational facilities. According to the projections, the renovation and restructuring of the network are decisive to support the development of the municipality, to open the neighbourhoods, and to accompany the future demographic growth.



OUTPUTS

Technical results

- Rehabilitation of existing roads.
- Paving of secondary and tertiary roads.
- Creation of pavements with trees to create pedestrian routes.
- Integrate bicycle lanes and bicycle rental to develop soft mobility.

Capacity building outputs

- Technical support for the implementation of the programme.
- Capacity building of Douala 4 and Douala.
- Develop innovative and new collaborations with private actors for soft mobility.



PROJECT LIFE CYCLE

Design and Feasibility Study, Implementation, Operation and Maintenance. Awareness-raising and capacity building throughout the project.

	Actions	Year 0	Year 1	Year 2
01	Preliminary design and cost-benefit analysis (engineering and environmental studies) and preparation of the project budget.			
02	Prepare the Design RFP for the bidding process and announcing the bid. The RFP must include conducting a detailed technical assessment in each neighbourhood, identifying road/sidewalk surfaces' specifications (primary, secondary, tertiary) including, social and environmental studies, permeable coating in areas with high flood risks, developing the design and planning.			
03	Prepare the Design RFP for the bidding process and announcing the bid. Hold the bid evaluation and selection; Contract negotiation and awarding.			
04	Technical assessment and studies. Implementation of the action plan.			



PROJECT IMPACT

Douala 4 and local communities have stressed the urgency of paving and upgrading the road network. The project will provide an organised network that will unlock neighbourhoods characterised by informal settlements where IDPs and vulnerable populations live (SDGs 3, 5). Intervention on the road network will improve mobility, living conditions and access to employment opportunities and social facilities within and outside the commune, thereby reducing poverty and inequality (SDGs 1, 8, 10, 11). The extension of the road network must be combined with other projects. The development of new mobilities such as cycling will push for new city-wide partnerships (SDG 17).

Transformative impact (0-no transformative impact, 1-low, 2-medium, 3-high, 4-very high): The project is essential for the successful implementation of other projects (4/4):

- Reducing traffic congestion.
- Improving the mobility of residents to access social and economic centres and employment opportunities.
- Securing pedestrian mobility.
- Developing soft mobility offer.
- Contributing to the development of other projects such as housing.



FINANCIALS*

Total cost per meter for the upgrading of the road network (1 USD = 611 XAF)

- Development of the secondary and tertiary road network within the neighbourhoods: 40.34 km
- Renovation of main roads: 16 km
- Renovation of secondary and tertiary road network: 463 km
- Construction of pavements with trees 40.43 km (new roads) + 463 km (old roads) = 504 km
- Creation of cycle tracks: 40.43 km

Feasibility study: 50 000 000 FCFA = USD 81 833

Cost of work

1) Rehabilitation of the primary network

- Asphalt surfacing for 1 km

Works and maintenance: 1 665 586 632 FCFA = USD 2 726 001

Project management costs: 10%

3) Restructuring of the tertiary network

- Tar coating for 5 km:

Works and maintenance: 4 710 267 375 FCFA = USD 7 709 112

(1km: 942 053 0475 FCFA / USD 1 541 822)

- Paving for 5km

Work and maintenance: 5 173 762 315 FCFA = USD 8 467 696

(1km: 1 034 752 463 FCFA = USD 1 591 927)

Project management cost: 10% of cost of work

These costs do not include compensation for evictions.

Investment needs

- Survey work
- Detailed design development

Additional Support Needed

- Technical support
- Buy-in by key stakeholders (e.g., government, entities)

* All costs are indicative.



PROJECT VIABILITY

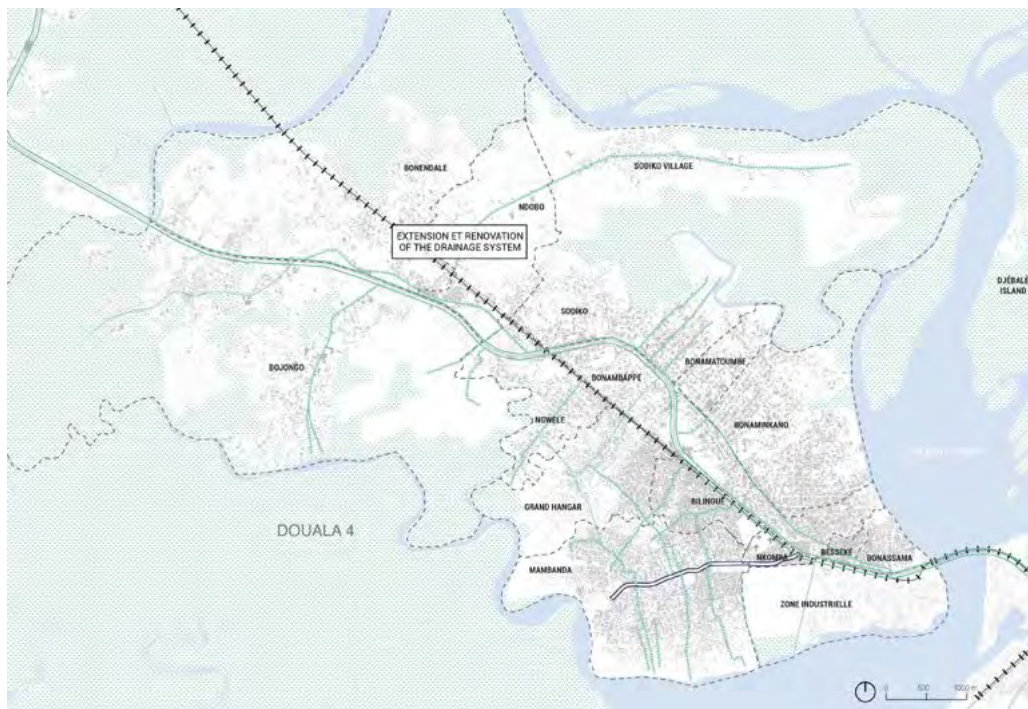
- **Technical viability:** The project feasibility study should be carried out in conjunction with the studies for the upgrading and extension of the water and sewerage system. This project will be a lever for other projects: construction of housing and facilities.

URBAN PLANNING AND INFRASTRUCTURE IN MIGRATION CONTEXTS (UPIMC)

INVESTMENT CARD

CONSTRUCTION OF DRAINS

KEYWORDS: ENVIRONMENT, URBAN RESILIENCE, FLOODING, MITIGATION RISKS



Map: Extension and renovation of the drainage system by 2030. Source: UN-Habitat, 2022

GENERAL INFORMATION



PROJECT TITLE Construction of Drains



TYPE OF PROJECT Basic Infrastructure, Awareness-raising, and Capacity Building



LOCATION Subdivision of Douala 4 (CAD4), Douala, Cameroon.



BENEFICIARIES

- **Direct Beneficiaries:** the total population of Douala 4 (433,500 residents) with a focus on 290,445 residents (67 per cent of the local population of Douala 4, 2021) including 23,070 IDPs.
- **Indirect beneficiaries:** the population of the city of Douala, businesses, institutions.



SDGS ALIGNMENT



PARTNERS

- **Owner and implementer:** CUD and CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINEP, MINTP, and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



TIMELINE

- Year 0 ● **Phase 1:** Design and Feasibility Study
- Year 1 ● **Phase 2:** Construction work
- Year 3 ● **Phase 3:** Operation and Maintenance



CONTACT PERSON

Subdivision of Douala 4



PROJECT OBJECTIVE

This project aims to **improve and extend of the existing drainage network and create public spaces or pavements above it** to improve health and living conditions of local populations.



IDENTIFICATION OF CHALLENGES

The poor drainage network in Douala 4 participates in the creation of an unhealthy and unhygienic living environment with the spread of diseases through contaminated water and soil pollution. The high flood risks in the subdivision increase pollution of waterways and drained water leading to a loss of biodiversity and inefficient use of land and resources. During floods, inhabitants find it difficult to move around, which prevent them from accessing their workplaces.

Ultimately, the poor drainage network deteriorates residents' living conditions and jeopardises the good development of Douala 4. By 2030, the risk of flooding will increase, exposing vulnerable neighbourhoods to permanent flooding. Therefore, an efficient and comprehensive drainage system is crucial to prevent local populations from climate risks and health diseases.



OUTPUTS

Programme Outputs

- Improving and extending the existing drainage network in critical areas.
- Creating inclusive public space above the drainage system.
- Ensuring the good management of the drainage network.

Capacity-Building and Awareness Raising Outputs

- Providing project implementation support.
- Supporting drainage capacity building in Douala 4.
- Raising-awareness among local populations to climate risks.
- Promoting partnerships with universities.



PROJECT LIFE CYCLE

[4 years]

Design and Feasibility Study, Concept and Detailed Design, Operation and Maintenance. Awareness-raising and capacity building throughout the project.

	Actions	Year 0	Year 1	Year 2
01	Preliminary design and cost-benefit analysis (engineering and environmental studies) and preparation of the project budget.			
02	Prepare the Design RFP for the bidding process and announce the bid. The RFP must include conducting a detailed technical assessment in each neighbourhood, identifying drain surfaces' specifications according to the local context			
03	Prepare the Design RFP for the bidding process and announcing the bid. Hold the bid evaluation and selection; Contract negotiation and awarding.			
04	Technical assessment and studies. Implementation of the action plan.			



PROJECT IMPACT

The subdivision of Douala 4 and local communities are aware of the importance of improve water management to address flood risks and health diseases that will increase with climate change. This project will lead to a safe and resilient subdivision by mitigating the risk of flooding and its significant consequences. This project aims to improve the living conditions and the environment in Douala 4 (SDG 3, 11). The vulnerable population exposed will be protected thanks to adapted measures.

Transformative impact (0-no transformative impact, 1-low, 2-medium, 3-high, 4-very high): The project is essential for the successful implementation of other projects (**4/4**):

- Protecting housing and buildings from flooding including for future housing development, land densification, and economic development.
- Providing access to all social and recreational equipment (e.g., schools, kindergartens, sports facilities), and private and public facilities (e.g., markets, shops).
- Protecting the environment, decreasing pollution, and improving well-being.
- ☑ Developing public spaces and soft mobility



FINANCIALS*

Total cost for 10 km of drains and sum per phase of the project life cycle

(1 USD = 611 XAF)

- Total length: 40 km of new drains + 460 km of drains that need to be upgraded

Feasibility study: 20 000 000 FCFA = USD 32733

Environmental study: 15 000 000 FCFA = USD 24 550

Cost of work: 16 332 346 250 FCFA = USD 26 730 518

Maintenance: 61 055 500 FCFA = USD 99 927

Total cost work + maintenance: 16 393 401 750 FCFA = USD 26 830 445

Administrative and management costs (10%): 122 111 000 FCFA = USD 199 854

Total cost for 10km (study, works, maintenance): 16 428 401 750 FCFA = USD 26 887 728 (without management and evictions costs)

Investment needs

- Survey work
- Detailed design development

Additional Support Needed

- Technical support
- Buy-in by key stakeholders (e.g., government, entities)

* All costs are indicative.



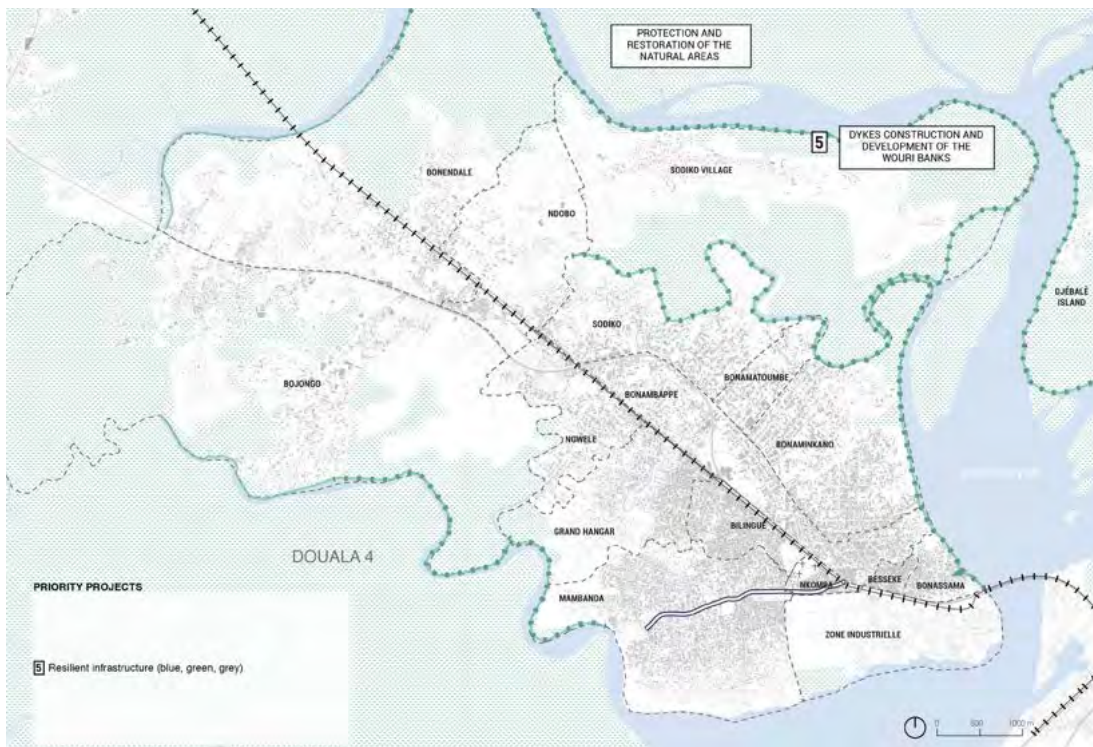
PROJECT VIABILITY

- **Technical viability:** The project feasibility study should be edited after the study for the construction and improvement of asphalt roads and the upgrading of the water and sewage system.

URBAN PLANNING AND INFRASTRUCTURE IN MIGRATION CONTEXTS (UPIMC) INVESTMENT CARD

CONSTRUCTION OF HYBRID DYKES

KEYWORDS: CLIMATE MITIGATION, URBAN RESILIENCE



Map: Development of the Wouri riverbanks. UN-Habitat, 2023

GENERAL INFORMATION



PROJECT TITLE Construction of Hybrid Dykes



TYPE OF PROJECT Resilient Infrastructure, Awareness-raising, and Capacity Building



LOCATION Subdivision of Douala 4 (CAD4), Douala, Cameroon



BENEFICIARIES

- **Direct Beneficiaries:** the total population of Douala 4 (433,500 residents) with a focus on 290,445 residents (67 per cent of the local population of Douala 4, 2021) including 23,070 IDPs.
- **Indirect beneficiaries:** the population of the city of Douala, businesses, institutions.



SDGS ALIGNEMENT



PARTNERS

- **Owner and implementer:** CUD and CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINEP, MINTP, and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



TIMELINE

- Year 0 ● **Phase 1:** Design and Feasibility Study
- Year 1 ● **Phase 2:** Construction work
- Year 3 ● **Phase 3:** Operation and Maintenance



CONTACT PERSON

Subdivision of Douala 4



PROJECT OBJECTIVE

The project aims to **protect the Wouri riverbanks and the nearby dwellings by building hybrid dykes to mitigate flood risks** combined with walkable, accessible and inclusive public spaces



IDENTIFICATION OF CHALLENGES

Douala 4 faces recurrent flood risks due to its topography: **80.2 per cent of the subdivision is classified as high risk**. These floods cause material and vital damage due to the uncontrolled land management and the lack of protection of natural resources. Workshops with local stakeholders and communities emphasised the urgent need to develop a flood risk management system and to invest in resilient infrastructure.

By 2030, the risk of flooding will increase, exposing vulnerable neighbourhoods to permanent flooding. Therefore, a new comprehensive flood mitigation system must be considered to prevent local populations from climate risks.



OUTPUTS

Technical outputs

- Implementing dykes along the Wouri riverbanks.
- Mitigating flood risks and protecting dwellings along the coastal areas.
- Developing the Wouri riverbanks for pedestrian.
- Ensuring access for all to the riverbanks.

Capacity-building and awareness raising outputs

- Providing project implementation support.
- Supporting climate adaptation and mitigation capacity building in Douala 4.
- Raising-awareness among local populations to climate risks.
- Promoting climate innovation through PPPs and partnerships with universities.



PROJECT LIFE CYCLE

Design and Feasibility Study, Concept and Detailed Design, Operation and Maintenance. Awareness-raising and capacity building throughout the project.

	Actions	Year 0	Year 1	Year 2
01	Preliminary design and cost-benefit analysis (engineering and environmental studies) and preparation of the project budget.			
02	Prepare the Design RFP for the bidding process and announce the bid. The RFP must include conducting a detailed technical engineering assessment, environmental studies, land tenure and social study, and design public spaces).			
03	Prepare the Design RFP for the bidding process and announcing the bid. Hold the bid evaluation and selection; Contract negotiation and awarding.			
04	Technical assessment and studies. Implementation of the action plan.			



PROJECT IMPACT

The subdivision of Douala 4 and local communities are aware of the importance of improve water management to address flood risks and health diseases that will increase with climate change. This project will lead to a safe and resilient subdivision by mitigating the risk of flooding and its significant consequences. This project aims to improve the living conditions and the environment in Douala 4 (SDG 3, 11). The vulnerable population exposed will be protected thanks to adapted measures.

Transformative impact (0-no transformative impact, 1-low, 2-medium, 3-high, 4-very high): The project is essential for the successful implementation of other projects **(4/4)**:

- Protecting housing and buildings from flooding including for future housing development, land densification, and economic development.
- Providing access to all social and recreational equipment (e.g., schools, kindergartens, sports facilities), and private and public facilities (e.g., markets, shops).
- Protecting the environment, decreasing pollution, and improving well-being.
- Developing public spaces and soft mobility.



FINANCIALS*

Total cost and sum per phase of the project life cycle (1 USD = 611 XAF)

- Total length: 44 km

Feasibility study: 40 000 000 FCFA = USD 65 466

Environmental study: 25 000 000 FCFA = USD 41 000

Cost of work

- Price per unit = 650 000 000 FCFA = USD 1 063 830

- Price for 10 km = 7 751 250 000 FCFA = USD 12 686 170

Maintenance (5%): 62 562 500 FCFA = USD 102 394

Administrative and management costs (10%): 775 125 000 FCFA = USD 1 268 617

Compensation cost for evictions:

- price per household: 5 000 000 FCFA = USD 8 183

- price for 1000 household: 5 000 000 000 FCFA = USD 8 183 306

Total cost for 10km (study, works, maintenance): 7 878 812 500 FCFA = USD 12 899 857 (without management and evictions costs)

Investment needs

- Survey work
- Detailed design development

Additional Support Needed

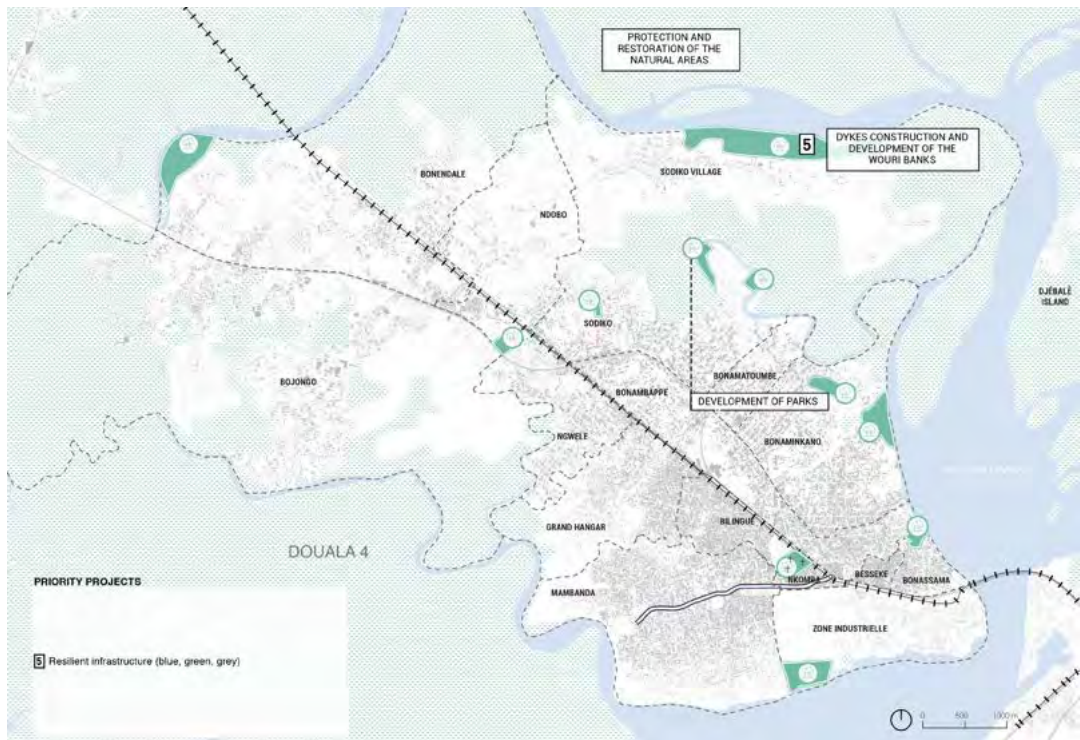
- Technical support
- Buy-in by key stakeholders (e.g., government, entities)

* All costs are indicative.

URBAN PLANNING AND INFRASTRUCTURE IN MIGRATION CONTEXTS (UPIMC) INVESTMENT CARD

CONSTRUCTION OF PARKS WITH RETENTION PONDS

KEYWORDS: ENVIRONMENT, URBAN RESILIENCE, FLOODING, MITIGATION RISKS



Map: Construction of retention ponds and parks in Douala 4. UN-Habitat, 2023

GENERAL INFORMATION



PROJECT TITLE

Construction of Parks with Retention Ponds



TYPE OF PROJECT

Resilient Infrastructure, Awareness-raising, and Capacity Building



LOCATION

Subdivision of Douala 4 (CAD4), Douala, Cameroon



BENEFICIARIES

- **Direct Beneficiaries:** the total population of Douala 4 (433,500 residents) with a focus on 290,445 residents (67 per cent of the local population of Douala 4, 2021) including 23,070 IDPs.



SDGS ALIGNEMENT



PARTNERS

- **Owner and implementer:** CUD and CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINEP, MINEPDED, MINITOURISME and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



TIMELINE

- Year 3 ● **Phase 1:** Design and Feasibility Study
- Year 4 ● **Phase 2:** Construction work
- Year 5 ● **Phase 3:** Operation and Maintenance



CONTACT PERSON

Subdivision of Douala 4



PROJECT OBJECTIVE

The project aims to **develop parks with retention ponds to mitigate flood risks** while enhancing natural resources of Douala 4 and creating public space for local populations.



IDENTIFICATION OF CHALLENGES

Douala 4 faces recurrent flood risks due to its topography: **80.2 per cent of the subdivision is classified as high risk**. These floods cause material and vital damage due to the uncontrolled land management and the lack of protection of natural resources. Workshops with local stakeholders and communities emphasised the urgent need to develop to invest in resilient infrastructure to mitigate flood risks. Therefore, new parks with retention ponds are a solution to mitigate flood risks while improving the living conditions of local populations.



OUTPUTS

Technical outputs

- Creating parks with retention ponds.
- Creating inclusive and green public spaces.

Capacity-building outputs

- Providing project implementation support.
- Supporting capacity building for climate mitigation and adaptation in Douala 4.
- Raising-awareness among local populations to climate risks.
- Promoting climate innovation through PPPs and partnerships with universities.



PROJECT LIFE CYCLE

Design and Feasibility Study, Concept and Detailed Design, Operation and Maintenance. Awareness-raising and capacity building throughout the project.

	Actions	Year 3	Year 4	Year 5
01	Preliminary design and cost-benefit analysis (engineering and environmental studies) and preparation of the project budget.			
02	Prepare the Design RFP for the bidding process and announce the bid. The RFP must include conducting a detailed technical engineering assessment, environmental studies, land tenure and social study, and design public spaces).			
03	Prepare the Design RFP for the bidding process and announcing the bid. Hold the bid evaluation and selection; Contract negotiation and awarding.			
04	Technical assessment and studies. Implementation of the action plan.			



PROJECT IMPACT

The subdivision of Douala 4 and local communities are aware of the importance of improve water management to address flood risks and health diseases that will increase with climate change (SDG 6). This project will lead to a safe and resilient subdivision by mitigating the risk of flooding and its significant consequences (SDGs 13, 15). This project aims to improve the living conditions and the environment in Douala 4 (SDG 3). The vulnerable population exposed will be protected thanks to adapted measures.

Transformative impact (0-no transformative impact, 1-low, 2-medium, 3-high, 4-very high): The project is essential for the successful implementation of other projects (**4/4**):

- Protecting housing and buildings from flooding including for future housing development, land densification, and economic development.
- Providing access to all social and recreational equipment (e.g., schools, kindergartens, sports facilities), and private and public facilities (e.g., markets, shops).
- Protecting the environment, decreasing pollution, and improving well-being.
- Developing public spaces and soft mobility.



FINANCIALS*

Total cost for the construction of 2 parks with 2 retention ponds and sum per phase of the project life cycle (1 USD = 611 XAF)

- Total: nine parks with retention ponds (5 ha)

Feasibility study: 15 000 000 FCFA = USD 24 550

Environmental study: 15 000 000 FCFA = USD 24 550

Cost of work: 4 785 976 850 FCFA = USD 7 833 023

Maintenance: 90 815 500 FCFA = USD 148 634

Total cost work + maintenance: 4 876 792 350 FCFA = USD 7 981 657

Administrative and management costs: 181 631 000 FCFA = USD 297 268

Total cost (study, works, maintenance): 4 906 792 350 FCFA = USD 8 030 757 (without management and evictions costs)

Investment needs

- Survey work
- Detailed design development

Additional Support Needed

- Technical support
- Buy-in by key stakeholders (e.g., government, entities)

* All costs are indicative.



PROJECT VIABILITY

- **Technical viability:** The project feasibility study should be edited after the study for the construction and improvement of asphalt roads and the upgrading of the water and sewage system.


URBAN PLANNING AND INFRASTRUCTURE IN MIGRATION CONTEXTS (UPIMC) INVESTMENT CARD

DIGITAL SOLUTIONS FOR CLIMATE ACTION

KEYWORDS: ENVIRONMENT, URBAN RESILIENCE, FLOODING, MITIGATION RISKS

UN HABITAT
FOR A BETTER URBAN FUTURE



 Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
State Secretariat for Economic Affairs SECO

GENERAL INFORMATION



PROJECT TITLE Digital Solutions for Climate Action



TYPE OF PROJECT Resilient Infrastructure, Awareness-raising, and Capacity Building



LOCATION Subdivision of Douala 4 (CAD4), Douala, Cameroon.



BENEFICIARIES

- **Direct Beneficiaries:** the total population of Douala 4 (433,500 residents) with a focus on 290,445 residents (67 per cent of the local population of Douala 4, 2021) including 23,070 IDPs.
- **Indirect Beneficiaries:** the population of the city of Douala, businesses, institutions.



SDGS ALIGNMENT



PARTNERS

- **Owner and implementer:** CUD and CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, MINAT, MINTRANSPORT, and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



TIMELINE

Year 0 ● **Phase 1:** Design and Feasibility Study

Year 2 ● **Phase 2:** Construction work

Year 2 ● **Phase 3:** Operation and Maintenance



CONTACT PERSON

Subdivision of Douala 4



PROJECT OBJECTIVE

This project aims to **develop a digital system to warn the inhabitants of environmental risks** (floods, pollution, etc.) through the different information and communication technologies (telephone, radio).



IDENTIFICATION OF CHALLENGES

Douala 4 faces recurrent flood risks due to its topography: **80.2 per cent of the subdivision is classified as high risk**. These floods cause material and vital damage due to the uncontrolled land management and the lack of protection of natural resources. Workshops with local stakeholders and communities emphasised the urgent need to develop a flood risk management system and to invest in resilient infrastructure.

By 2030, the risk of flooding will increase, exposing vulnerable neighbourhoods to permanent flooding. Therefore, a new comprehensive flood mitigation system must be considered to prevent local populations from climate risks.



OUTPUTS

Technical outputs

- Creating and implementing a digital system to warn the inhabitants of environmental risks.
- Purchasing the hardware and software.

Capacity-building and awareness raising outputs

- Providing project implementation support.
- Supporting digital capacity building in Douala 4.
- Raising-awareness among local populations to climate risks.
- Promoting digital innovation through PPPs and partnerships with universities.



PROJECT LIFE CYCLE

Design and Feasibility Study, Concept and Detailed Design, Operation and Maintenance. Awareness-raising and capacity building throughout the project.

[3 years]

	Actions	Year 0	Year 1	Year 2
01	Preliminary design and cost-benefit analysis (engineering and environmental studies) and preparation of the project budget.			
02	Prepare the Design RFP for the bidding process and announce the bid. The RFP must include conducting a detailed technical assessment in each neighbourhood, identifying cable surfaces' specifications according to the local context			
03	Prepare the Design RFP for the bidding process and announcing the bid. Hold the bid evaluation and selection; Contract negotiation and awarding.			
04	Technical assessment and studies. Implementation of the action plan.			



PROJECT IMPACT

The subdivision of Douala 4 and local communities are aware of the importance of addressing the flood risks that will increase with climate change (SDG 13). This project will lead to a safe and resilient subdivision by mitigating the risk of flooding and its significant consequences. This project aims to improve the living conditions and the environment in Douala 4 (SDG 3). The vulnerable population exposed will be protected thanks to adapted measures.

Transformative impact (0-no transformative impact, 1-low, 2-medium, 3-high, 4-very high): The project is essential for the successful implementation of other projects **(4/4)**:

- Protecting housing and buildings from flooding including for future housing development, land densification, and economic development.
- Providing access to all social and recreational equipment (e.g., schools, kindergartens, sports facilities), and private and public facilities (e.g., markets, shops).
- Protecting the environment, decreasing pollution, and improving well-being.
- Improving traffic and mobility.
- Creating a safe environment for economic activities and future investors.



FINANCIALS*

Total cost and sum per phase of the project life cycle (1 USD = 611 XAF)

Feasibility study: 5 000 000 FCFA = USD 8 183

Cost of work: 91 822 500 FCFA = USD 150 282

Maintenance (5%): 3 850 000 FCFA = USD 6 300

Total cost (study, works, maintenance): 100 672 500 FCFA = USD 164 767

Investment needs

- Survey work
- Detailed design development

Additional Support Needed

- Technical support
- Buy-in by key stakeholders (e.g., government, entities)

* All costs are indicative.



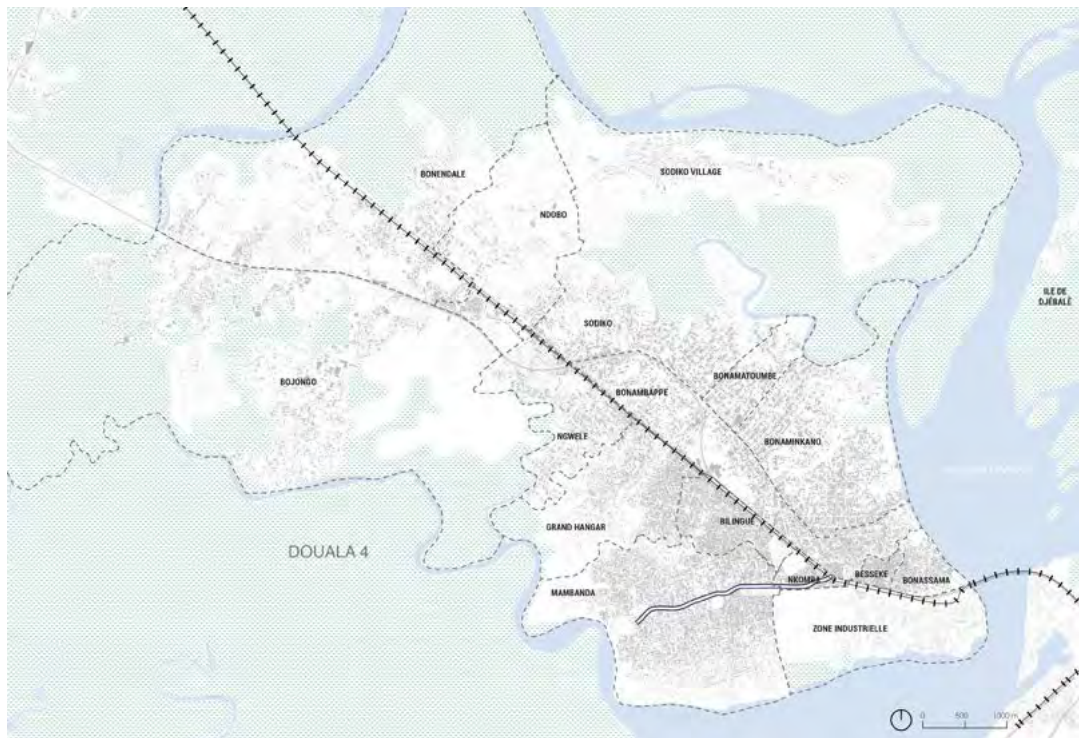
PROJECT VIABILITY

- **Technical viability:** The project feasibility study should combine with the information and communication technologies system.

URBAN PLANNING AND INFRASTRUCTURE IN MIGRATION CONTEXTS (UPIMC) INVESTMENT CARD

ECOLOGICAL RESTORATION OF MANGROVE SWAMPS

KEYWORDS: ECOLOGICAL RESTORATION, MANGROVE SWAMPS, CLIMATE MITIGATION, URBAN RESILIENCE



Map: Mangrove swamps in Douala 4. UN-Habitat, 2023

GENERAL INFORMATION



PROJECT TITLE Ecological Restoration of Mangrove Swamps



TYPE OF PROJECT Preservation/Rehabilitation Programme, Awareness-raising, and Capacity Building



LOCATION Subdivision of Douala 4 (CAD4), Douala, Cameroon



BENEFICIARIES

- **Direct beneficiaries:** the total population of Douala 4 (433,500 residents) with a focus on 290,445 residents (67 per cent of the local population of Douala 4, 2021) including 23,070 IDPs.
- **Indirect beneficiaries:** the population of the city of Douala, businesses, institutions.



SDGS ALIGNMENT

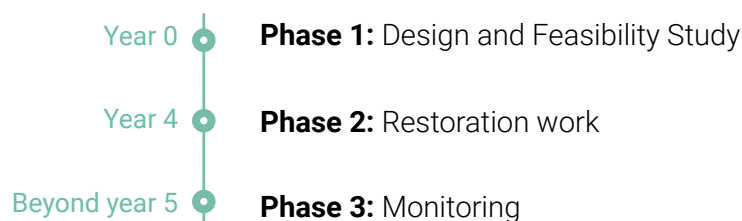


PARTNERS

- **Owner and implementer:** Civil Society Organisations (CSOs), CUD and CAD4 will oversee the implementation, maintenance, and sustainability of the project.
- **Project management:** CUD, CAD4, MINEP and MINH DU will manage the project.
- **Donor/financier:** A funding entity(s) is needed to support the implementation of the project on the ground.



TIMELINE



CONTACT PERSON Subdivision of Douala 4



PROJECT OBJECTIVE

The project aims to **actively protect and restore mangrove swamps of Douala 4 to address environmental challenges** including climate risks mitigation (flooding), global warming, and biodiversity conservation.



IDENTIFICATION OF CHALLENGES

Douala 4 faces recurrent flood risks due to its topography: **80.2 per cent of the subdivision is classified as high risk**. The destruction of the mangrove that accompanies the settlement of populations in these coastal areas increases the risk of flooding. These floods cause material and vital damage due to the uncontrolled land management and the lack of protection of natural resources. Workshops with local stakeholders and communities emphasised the urgent need to protect and restore mangrove swamps.



OUTPUTS

Technical Outputs

- Understanding the autecology of the mangrove species at the site and assessing the original mangrove environment.
- Initiating a Preservation/Rehabilitation Programme and Partnerships.
- Developing a restoration plan for active restoration including hydrological rehabilitation.
- Monitoring and protecting the mangrove swamps.

Capacity-Building Outputs

- Providing project implementation support.
- Support capacity building for ecological restoration in Douala 4.
- Promoting ecological innovation through PPPs and partnerships with universities.
- Raising-awareness among local populations to protect and restore mangrove swamps.



PROJECT LIFE CYCLE [Beyond 5 years]

Design and Feasibility Study, Concept and Detailed Design, Restoration and Monitoring (beyond 5 years). Awareness-raising and capacity building throughout the project.

	Actions	Year 0	Year 1	Year 2
01	Assessment of on-site conditions			
02	Initiating a Preservation/Rehabilitation Programme and Partnerships and developing a restoration plan for active restoration			
03	Preliminary design and cost-benefit analysis (engineering and environmental studies) and preparation of the project budget.			
04	Prepare the project budget and the Design RFP for the bidding process and announce the bid. The RFP must include conducting a detailed technical assessment, identifying the required capacities (staff, trainings), material (seedling production), techniques used, and site accessibility, developing the design and planning.			
05	Technical assessment and studies. Implementation of the action plan.			



PROJECT IMPACT

The mangrove suffers from coastal erosion, increased sea level, deforestation, fires and agricultural with consequences on water resources that affect both the mangrove and the populations. This project will protect the coast, the populations, and their quality of life. The participation of local communities will ensure the sustainability of the project, pursuing social welfare and economic viability (SDGs 1, 10). However, mangrove restoration goes hand in hand with its protection. On the one hand, human activities on these natural areas must be regulated to protect mangrove swamps: it is also important to raise awareness among local populations of the importance of this ecosystem to ensure the sustainability of the project. On the other hand, the protection and restoration of the mangrove will participate in the protection of the physical

environment and its populations by reducing the effects of flooding (SDGs 3, 13, 15).

Transformative impact (0-no transformative impact, 1-low, 2-medium, 3-high, 4-very high): The project is essential for the successful implementation of other projects (**4/4**):

- Protecting housing and buildings from flooding including for future housing development, land densification, and economic development.
- Providing access to all social and recreational equipment (e.g., schools, kindergartens, sports facilities), and private and public facilities (e.g., markets, shops).
- Protecting the environment, decreasing pollution, and improving well-being.
- Developing public spaces and soft mobility.

For more information on the
Douala Spatial Profile:



HS Number: HS/060/22E



UN-HABITAT

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