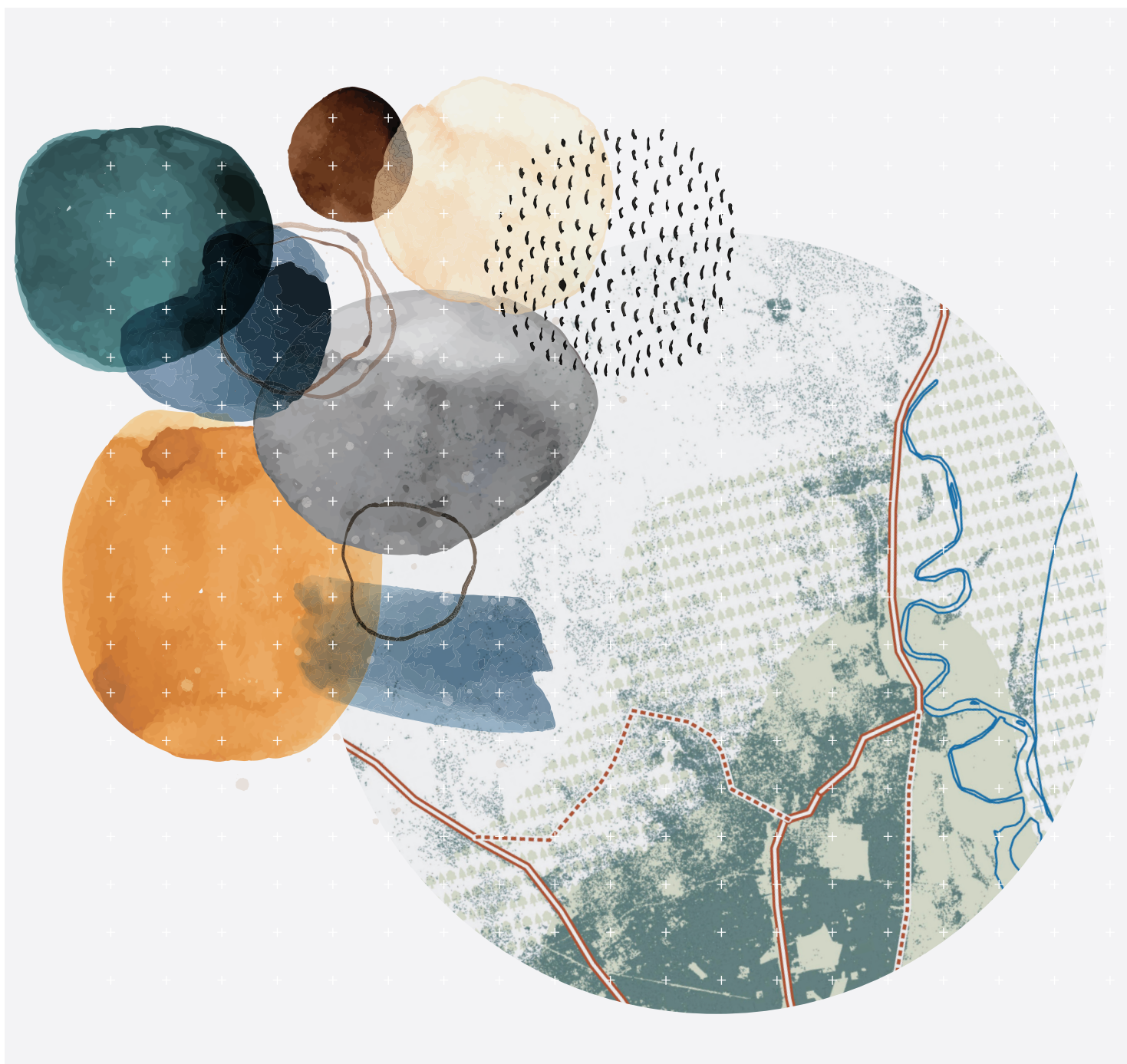


The Matrix of Functions to Strengthen Integrated Territorial Development in Maputo Metropolitan Area

September 2020



UN HABITAT
FOR A BETTER URBAN FUTURE



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The Matrix of Functions to Strengthen Integrated Territorial Development in Maputo Metropolitan Area



1. Summary of Findings

The *Spatial Development Framework (SDF)* is a participatory regional spatial planning method to support national, regional and local government decision-making processes on where to prioritize investments. The methodology combines three main spatial planning tools that can be easily adapt to the specific context in which it is being used.

This report aims to present the preliminary results of the main SDF tool, the **Matrix of Functions (MoF)**, which serve as a **pilot for adapting this methodology** to the Mozambican context and more specifically to the **context of urban metropolitan areas**. Moreover, it provides the basis for the definition of a **work plan for a study that includes the whole country to support policies related to urbanization and national transformation., such as the forthcoming implementation of a National Urban Policy**.

The exercise is based on data collected through a simple questionnaire to inventory the selected **135 functions and filled by government representatives from Districts** (Maputo City) and Administrative Posts (Matola, Boane and Marracuene).

The spatial analysis shows that the territorial development across the Metropolitan Area of Maputo is mainly concentrated in **Kampfumo (Maputo), Kamubukwana (Maputo) and Matola Sede (Matola)**. The district of **Kampfumo (Maputo)** is considered the **central administrative core** of the region while the neighboring districts of **Kamubukwana (Maputo)** and **Matola Sede (Matola)** concentrate the industrial and commercial activities of the region.

On the contrary, **Machubo, Boane and Kanyaka, appear to be rather isolated and show the lower levels of territorial development across the region**. These areas concentrate the lowest level of physical and socio-economic development of the region, are the least populated and the predominant activities are related to agriculture production.

Administrative units where accessibility is better (access to main road infrastructure and more means of transportation are available), **show better coverage of public services** (education) and **commercial and economic activities and professional services**.

The analysis of specialized economic functions helps to delineate three **Economic Specialization Areas** to allocate strategic interventions to **reinforce the socio-economic linkages identified between the administrative units and facilitate strategic planning and coordination between districts and administrative units, and between local and regional government**. The **Administrative and Commercial Core** located at the **centre of the metropolitan area, provides central commercial and administrative functions at the national and metropolitan level**. The first core of influence, the **Logistic and Urban Expansion Area**, account for a good accessibility to transport infrastructure and availability of land which have the potential to prioritise **logistic economic activities and urban expansion to alleviate the city centre**. The third core of influence, the **Productive and Environmental Area**, is predominantly rural, which can **provide the required forestry and agriculture land, as well as green spaces for recreational and tourism activities**.

Cooperation between districts and administrative posts within the Metropolitan Area appears to be crucial **towards coordinated implementation of interventions**, to avoid that several administrative posts **propose the same development projects** or a **concentration of interventions in some administrative posts**, which would lead to **districts competing among themselves and more unbalanced territorial developments**.



2. Introduction and Background

UN-Habitat has been supporting Mozambique since 2002, with a portfolio ranging from disaster risk reduction and resilience, including safer schools, climate change adaptation and mitigation, water and sanitation, slum upgrading, policy and strategy development, capacity building, participatory planning, urban and regional planning, etc.

More recent projects include comprehensive spatial analyses (e.g. territorial development of the Nampula region centred around Nampula City and the Nacala Development corridor towards Monapo, with a special focus on spatially and economically integrating refugees in Maratane camp located south of Nampula into urban-rural systems) as well as recommendations for a National Urban Policy, emphasising the need for diffused economic agglomeration and integrated territorial development.

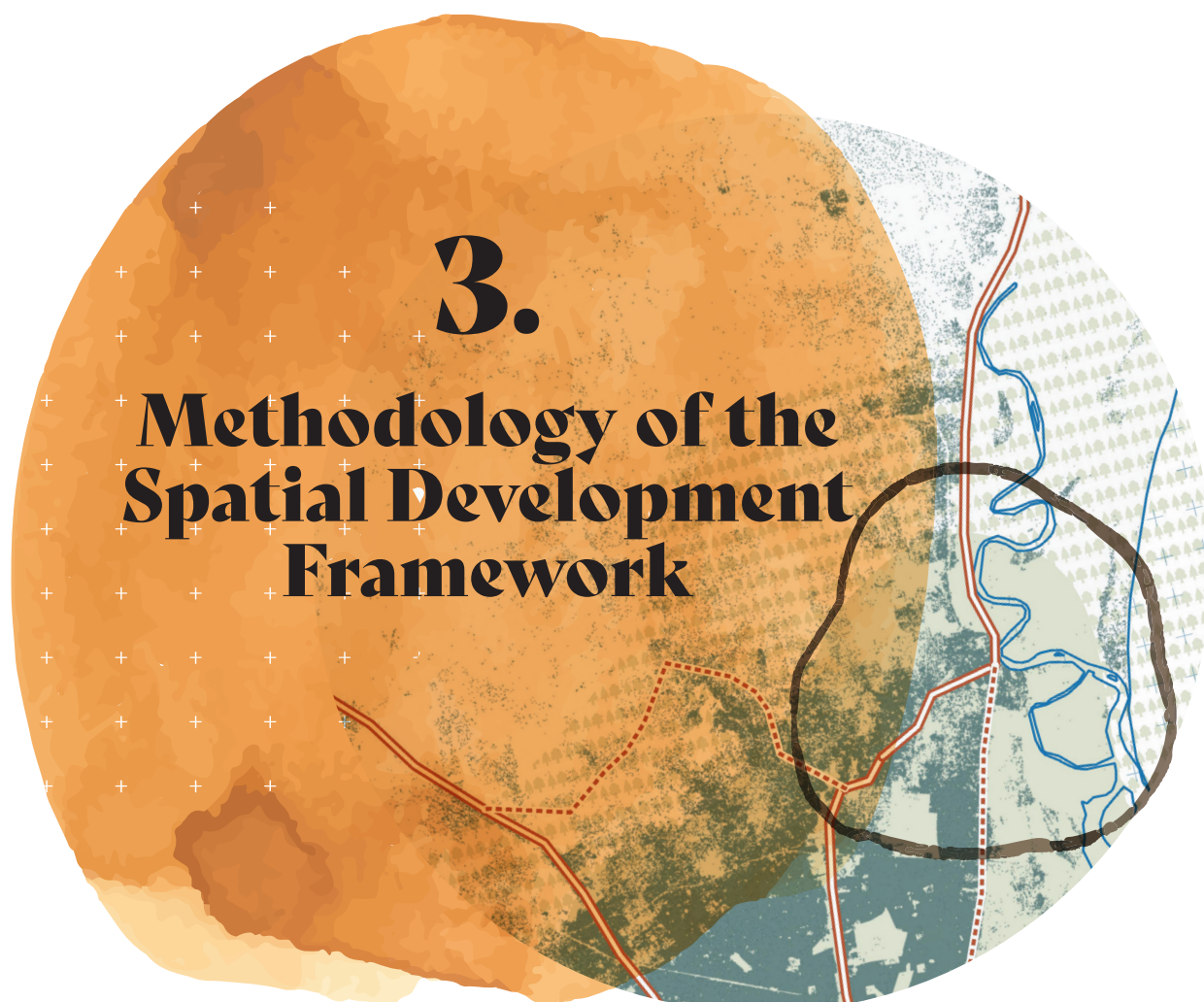
UN-Habitat developed the Spatial Development Framework (SDF) methodology **to assist national, regional and local governments to make spatially informed strategic decisions** to achieve policies, plans or strategies, based on the empirical understanding of the territorial dynamics of a region and the role settlements take in the region's structure.

The methodology (in its full version or as components of it) has already been implemented in Darfur, Sudan (2011-2013), Rwanda (2015-2016), in Myanmar (2016-2017) and Nampula Province (2017). For the latter, the SDF was used to conduct a spatial analysis to guide the spatial integration of **Maratane refugee camp** within the Greater Nampula Area through the development and implementation of value chains to support the local integration of the population.

Main Objective

The main objective of the report is to respond to *“Output 5: The analysis of the Spatial Development Framework (SDF) and MoF”* under *“E.A.1: Increased normative knowledge by localizing UN-Habitat’s global methodologies and piloting capacity development tools for regional analysis and urban and territorial planning to the Mozambican context”* by conducting a spatial and territorial analysis using the “Matrix of Functions” (MoF), a specific component of the SDF, in the **Metropolitan Area of Maputo (MAM)**.

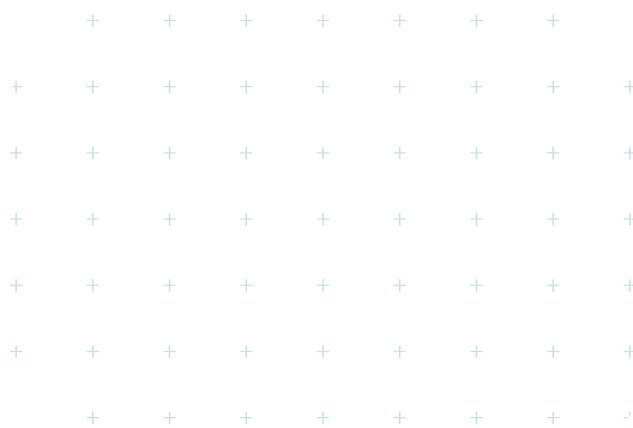
The overall result is to present a comprehensive spatial analysis of the current situation to guide and influence planners at the state/region and national level who will be able to use the findings of the report to make more informed, strategic planning decisions. Furthermore, results will be shared with other development partners in the region, to seek for collaboration, for example in the sector of transport and infrastructure provision.



3.

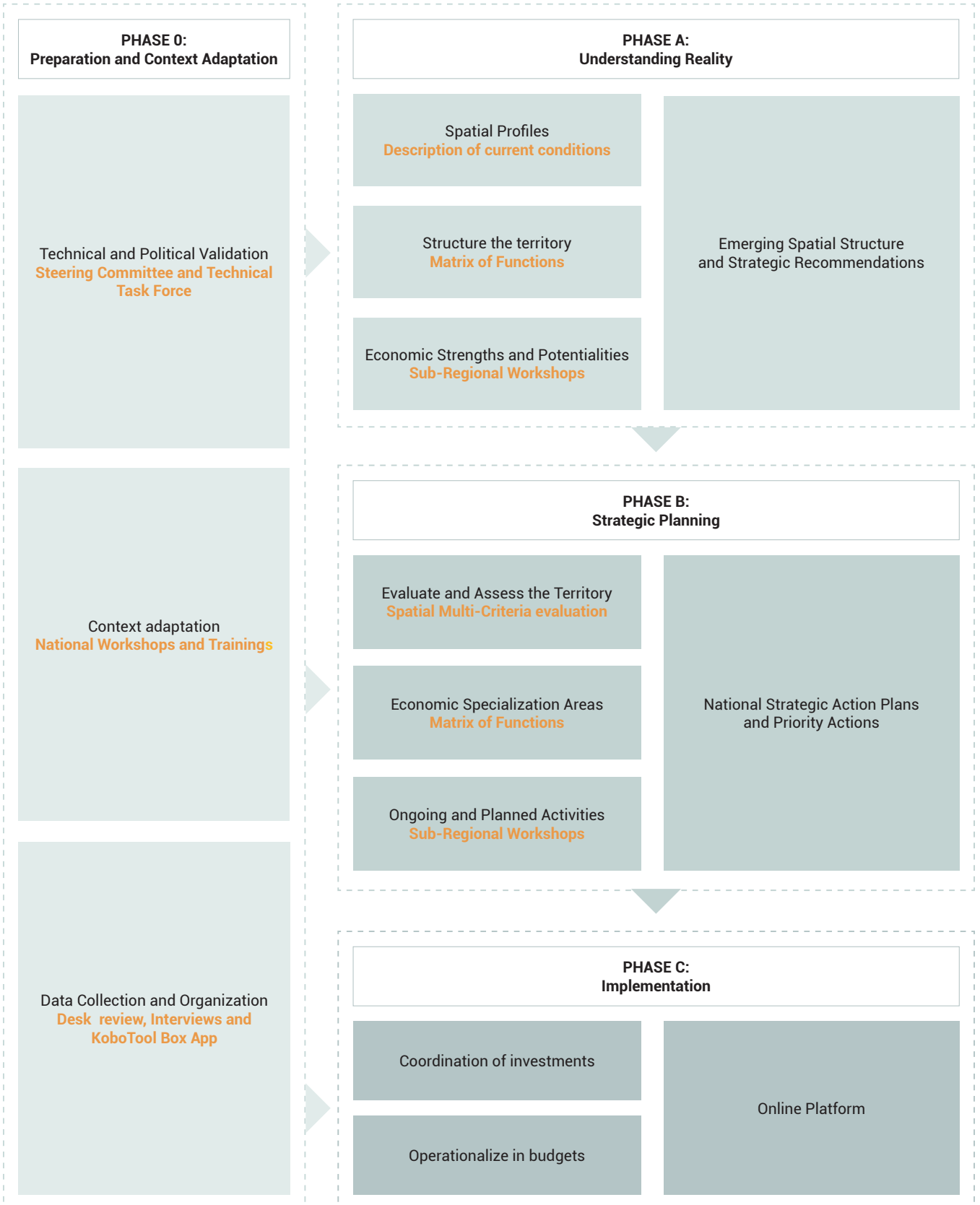
Methodology of the Spatial Development Framework

The *Spatial Development Framework (SDF)* is a participatory regional spatial planning method to support national, regional and local government decision-making processes on where to prioritize investments by articulating industrialization, infrastructure development and urbanization, thus contributing to the sustainable economic growth and bringing about more realistic planning and implementation.



The methodology is structured in four main phases and the different components have been designed to easily adapt to the specific context in which it is being used.

Figure 1: Methodological phases of the Spatial Development Framework and main spatial planning tools used



Phase 0: Context Adaptation

All three phases start with a preparatory phase to present and adapt the proposed method to the local context.

The whole process of the SDF follows a participatory and capacity building approach, guided by a *National Steering Committee* and a *Technical Task Force*, in the form of *National or Sub-regional Consultative Workshops (CW)* to discuss, validate and disseminate preliminary results and *Training of Trainers Sessions (ToT)* to instruct participants on the main spatial planning and data collection tools used

Phase A: Understanding Reality

This second phase identifies the emerging spatial structure of the territory and strategic recommendations are proposed in priority areas to address critical issues in the perspective of adequate access to quality of life standards for the entire population.

The *Matrix of Functions* (MoF) is a spatial planning tool that uses a simplified, fast and participatory methodology for data collection to provide an empirical understanding of the territorial dynamics of a region and the role settlements take in this structure based on the presence (or not) of key environmental services, physical infrastructure, social and economic activities.

Phase B: Strategic Planning

This third phase assess the spatial structure identified against key policies / strategies of economic and territorial development of the region and define priority actions to promote economic specialization and cooperation between settlements to ultimately strengthen the spatial structure identified.

The *Spatial Multi-Criteria Evaluation* (SMCE) is a spatial planning tool that helps planners and decision-makers to evaluate, compare and prioritize spatial alternatives or locations, by giving an understanding of how good certain areas or locations in comparison to others against objectives of key policies/strategies. All data comes from official" data sets (spatial and non-spatial) from government agencies, international agencies, or NGOs to define spatially specific policy targets.

Phase C: Implementation

Finally, the last phase operationalizes budgets through an online platform to visualize and coordinate the proposed priority actions

3.1 The SDF in the Maputo Metropolitan Area

The SDF methodology focused on **Phase A**, by conducting the Matrix of Functions (MoF) analysis to understand how **the Metropolitan Area of Maputo is structured** and delineate **priority areas of intervention**.

The whole process has been implemented in partnership with representatives from all Municipalities and Districts within the Metropolitan Area (*Maputo, Matola, Marracuene and Boane*) and followed three main phases (fig.2): the launching and preparation phase (phase 1), the analytical phase (phase 2) and the validation and dissemination phase (phase 3).

Phase 1: Launching and preparation phase

The objective of this phase was to present and adapt the proposed methodology to the Mozambican context and, more precisely, to the metropolitan context.

An Expert Group Meeting (*Methodological Adaptation Workshop*) was organized in Maputo on the **27th-29th of August of 2019**, with different stakeholders, to discuss and adapt the methodology proposed. During these sessions participants were trained on the use of the main spatial planning tools used in the project, the Matrix of Function (MoF), to select the administrative unit of analysis and the most relevant functions

Phase 2: Analytical phase

The main objective of this phase is to determine the Emerging Spatial structure of the Metropolitan Area of Maputo and a define key strategic recommendations to support national, regional and local government decision-making processes on where to prioritize investments.

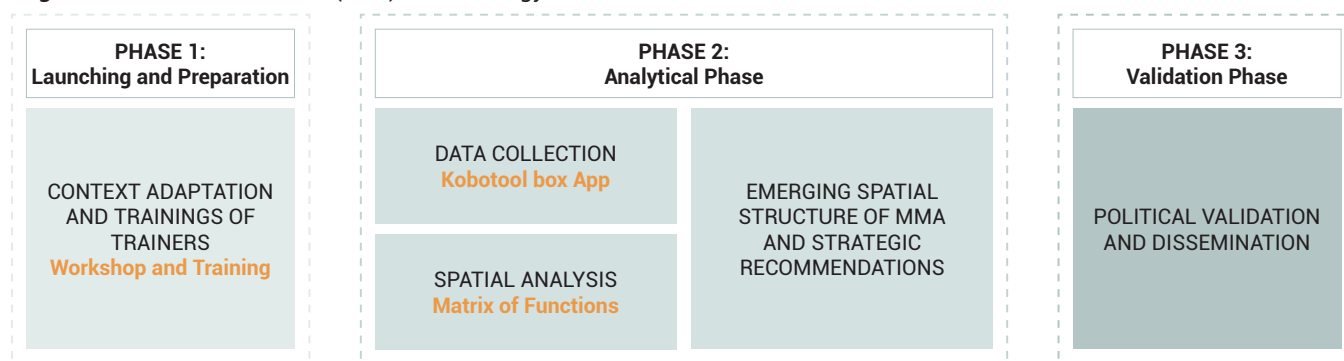
This phase started by filling the Matrix of Function's questionnaire through representatives from the Municipalities and Districts within the Metropolitan Area (*Maputo, Matola, Marracuene and Boane*) considering their knowledge on-the-ground and of relevant sectorial institutions to get the information requested.

The spatial analysis carried out in the MMA was based on data collected at the administrative posts/districts (14) through a questionnaire to inventory 135 functions grouped into three main categories infrastructure and basic services (45), government and social services (50) and economic activities (40).

Phase 3: Validation and dissemination phase

Finally, a Consultation/Validation on-line session was organized on the **7th of October 2020**, to present and discuss the results to obtain the technical and political endorsement of key stakeholders.

Figure 2: Matrix of Functions (MoF) methodology flowchart



4.

MATRIX OF FUNCTIONS: how does the territory of the metropolitan area of Maputo work?

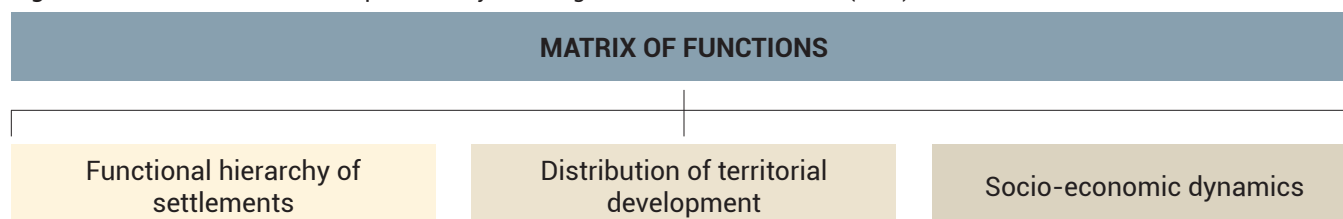


The Matrix of Functions (MoF) is a spatial planning tool that provides an empirical and integrated understanding of a region by producing a set of hypotheses and assumptions about the existing network of human settlements and its organization. The main purposed of this methodology is to **understand and visualize the current qualities of the territory** from which **policy-makers and society can better plan their investments.**

Each **human settlement is characterised by all the functions¹ it performs in a given territory** (functional hierarchy of settlements) and its centrality increases with its ability to supply key services to people living in surrounding areas. Mapping (through geographic information system) the different categories of settlements helps **visualising how balanced the spatial development of the region is** (distribution of territorial development) and **understand the development patterns**.

In addition, it identifies the current spatial structure (socio-economic dynamics), supported by **"clusters of settlements" with similar level of development** (areas of concentration of settlements which are strongly interconnected and work cooperatively in terms of socio-economic activities), or in **isolation by providing important functions to least developed neighbouring settlements**. (Fig.3)

Figure 3: Main outcomes of the spatial analysis using the Matrix of Functions (MoF)



4.1 Methodological adaptation

Administrative unit of analysis

The *Maputo Metropolitan Area* (MMA) covers and extension of 2.200,00 km², including the capital city of Maputo (346 km²), and the neighbouring districts of Matola (375km²), Boane (820 km²) and Marracuene (666km²).

During the *Expert Group Meeting (Methodological Adaptation Workshop)* to discuss and adapt the methodology to the Mozambican context, participants agreed that the best administrative unit of analysis in the Metropolitan Area

would be districts in Maputo City and administrative posts in Districts, as are legally recognized, are granted a certain degree of autonomy through local government and are geographically delimited.

According to the preliminary results of Census 2017, *Matola District* is the most populated district of the metropolitan area (44%), followed by *Maputo City* (41%), *Marracuene District* (10%) and *Boane District* (6%) (Map01)

Table 1: Administrative posts and Districts of the Metropolitan Area of Maputo

CITY/DISTRICT	ADMINISTRATIVE POST/DISTRICT	POPULATION (2017)
City of Maputo	KaMpfumo	80.550
	KaNihamankulu	129.405
	Ka Maxaquene	199.255
	KaMavota	331.968
	KaMubukwana	207.509
	Katembe	32.248
	KaNyaka	6.098
District of Matola	Infulene	410.000
	Machava	421.676
	Matola Sede	238.637
District of Boane	Boane Sede	106.629
	Matola rio	35.435
District of Marracuene	Marracuene	230.925
	Machubo	5.250

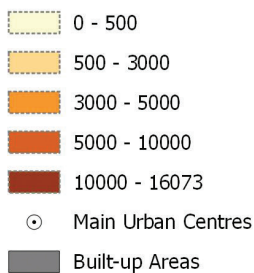
¹ A "function" is every service, equipment, activity and facility which has an environmental, economic, administrative, social or cultural function in a given human settlement

² Anuário Estatístico Maputo Província, 2017 Instituto Nacional de Estatística

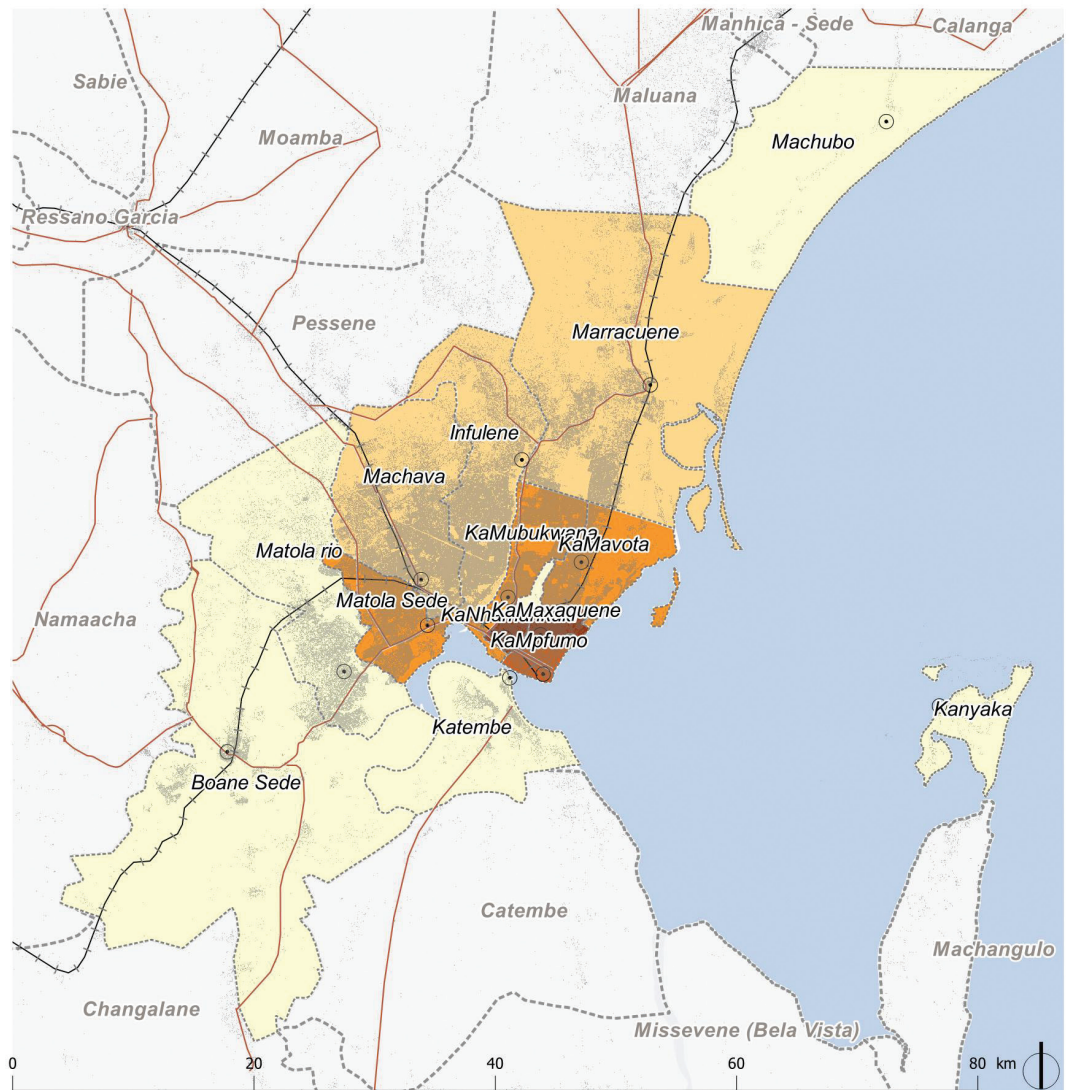
DISTRIBUTION OF THE POPULATION AND POPULATION DENSITIES

According to the preliminary results of Census 2017, the MMA concentrates 2.435.585 inhabitants. The spatial distribution of the population shows that Matola District is the most populated district of the metropolitan area (44%), followed by Maputo City (41%), Marracuene District (10%) and Boane District (6%). Maputo City and Matola District have the highest population density across the metropolitan area.

Population density (Hab/Km²)



Transport infrastructure



ADMINISTRATIVE DIVISIONS

The Maputo Metropolitan Area (MMA) includes the capital city of Maputo, and the neighbouring Districts of Matola, Boane and Marracuene. The city of Maputo is divided in Districts and the neighbouring Districts are subdivided in Administrative Posts.



Sources: Instituto Nacional de Estadística (INE), High Resolution Settlement Layer (HRSL), UN-Habitat

Selected functions

Participants elaborated the list of key functions, which was further revised by relevant stakeholders to ensure complete adaption to the context of the Metropolitan Area. A total number

of 135 functions (follow this link <https://ee.kobotoolbox.org/x/o30Y3Z6T> to see the full questionnaire or refer to Annex a1) were selected and grouped under the following categories and sub-categories

Table 2: List of functions used to conduct the spatial analysis

CATEGORIES	SUB-CATEGORIES	N. FUNCTIONS
INFRASTRUCTURE AND BASIC SERVICES	Water supply systems	8
	Electricity and gas network	5
	Telecommunication network	6
	Sewage system	4
	Waste management	3
	Transport infrastructure and services	19
GOVERNMENT FACILITIES AND SOCIAL SERVICES	Government institutions and decentralization services	4
	Judiciary services	8
	Security services	6
	Health facilities and services	10
	Education institutions	12
	Cultural and sport facilities	10
ECONOMIC ACTIVITIES AND SERVICES	Financial institutions	7
	Commercial Establishments	10
	Markets	6
	Business and industrial activities	11
	Professional services	6

Data collection strategy

The spatial analysis using the MoF in the Metropolitan Area of Maputo was based on data collected through a simple questionnaire to inventory the selected 135 functions and filled by government representatives from Districts (Maputo City) and Administrative Posts (Matola, Boane e Marracuene).

- > At the **Metropolitan Area** level, UN-Habitat’s planning team, was responsible for coordinating the process of data collection by distributing paper copies of the questionnaire and checking them before uploading the information to the KoboTool Box App.
- > At the **District** and **Administrative Post** level, selected focal points filled the questionnaire for their respective administrative unit in paper and send it to UN-Habitat. When needed, they contacted relevant institutions to get accurate and updated data to fill the questionnaire.

4.2 Functional hierarchy of settlements

The data collected through the online platform Kobo Toolbox was fed into an unordered matrix (spreadsheet), columns are functions (135) and rows are Districts and Administrative Posts (14), black squares indicate when the functions are available in each administrative unit of analysis.

The matrix is then ordered to categorise sectors and establish a set of prevalent functions for each category. (Fig.4) Districts with a smaller number of functions (basic functions) are located at the bottom of the matrix (Local Districts), while districts (Central Districts) with more functions (central functions) are located at the top of the table. (Refer to Annex a2 for the complete Matrix of Ordered Functions)

In the context of Maputo Metropolitan Area, districts were classified into four functional categories (table 3), **Central Districts (CD)**, **Secondary Districts (SD)**, **Tertiary Districts (TD)** and **Local Districts (LD)** considering the number and type of functions available in them. (Refer to Annex a3 for the complete list of prevalent functions for each category)

Figure 4: Image of the Matrix of Ordered Functions (MoF) of Maputo Metropolitan Area

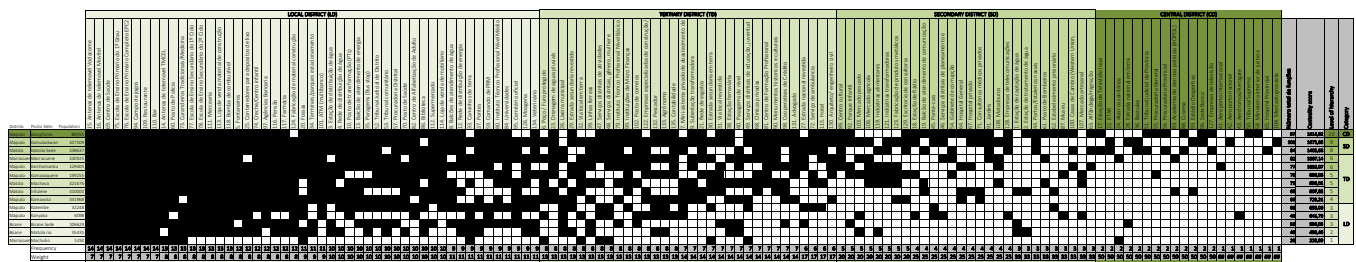


Table 3: Categories of human settlements identified in the Metropolitan Area of Maputo

	Centrality Score	Main Characteristics	Level of hierarchy	Name of Administrative Unit
Local Districts (LD)	229,00	Is the lowest level of physical and socio-economic development of the region. Despite showing a good coverage of water, electricity and communication network, transport infrastructure mainly relies on unpaved local roads which seem to be the main constraint of specialized economic and commercial activities	1	Machubo
	-		2	Matola rio
	655,00		3	Katembe, Kanyaka, Boane Sede
Tertiary Districts (TD)	729,20	Third level of urban and socio-economic development of the region. Access to better transportation services coupled with the presence of Government Extension Services and technical education facilities , allows commercial and economic activities and professional services	4	Kamavota
	-		5	Kamaxaquene, Machava, Infulene
	1.067,15		6	Marracuene, Kanihamankulu
Secondary Districts (SD)	1.405,70	Second level of urban and socio-economic development of the region. The presence of specialized transport infrastructure (<i>Ponte-cais and Portos/ Estalerios navais</i>) and higher levels of health facilities (<i>Hospital General, Hospital privado</i>) allow a range of business and industrial activities and higher level of urbanization through the presence of more recreational and cultural services	7	Matola Sede
	-		8	
	1.671,80		9	Kamubukwana
Central Districts (CD)	1.815,00	It is considered the central administrative core of the region providing the highest levels security services and judiciary services across the whole Metropolitan Area of Maputo	10	Kampfumo

4.3 Spatial distribution of the territorial development in Maputo Metropolitan Area

The analysis of the number of administrative units of each category, its spatial distribution across the region and the functions covered already gives information on the current level of development:

- > **Kampfumo (Maputo), Kamubukwana (Maputo) and Matola Sede (Matola) are the most developed districts of the metropolitan area.** The district of **Kampfumo (Maputo)** is considered the **central administrative core** of the region while the neighboring districts of **Kamubukwana (Maputo)** and **Matola Sede (Matola)** concentrate the industrial and commercial activities of the region.
- > **Enhanced mobility networks enable economic growth and urban development.** Administrative units where accessibility is better (access to main road infrastructure and more means of transportation are available), show better coverage of public services (education) and commercial and economic activities and professional services.
- > **Northern and southern areas of the region show the lower levels of territorial development across the region.** These areas concentrate administrative posts categorised as Local Districts (LD), considered the lowest level of physical and socio-economic development of the region.

4.4 Main socio-economic linkages identified

The cartographic representation of the ten levels of hierarchy as based on isopleths¹, allows visualising the degree of “territorial influence” (where any) of each settlement over neighbouring settlements (map MMA02) and draw some assumptions of the regional spatial structure.

> Maputo’s Centro Urbano and Matola Sede configure the “central core” of the metropolitan area

Located at the centre of the metropolitan area **concentrates the highest levels of physical and socio-economic development of the area**. The total population is 855.361 inhabitants, around **65 per cent of the total population of the region**.

The “territorial influence” of *Kampfumo*, considered the main urban and trade centre of the region (Central District), is mainly observed along the main routes of transportation towards *Kamubukwana* and *Matola Sede* both categorised as Secondary District. Weaker socio-economic linkages are observed towards *Kanihamankulu*, *Kamaxaquene*, *Machava* and *Kamavita* all categorised as Tertiary District.

Main Administrative Post	Population (2017)	Level of hierarchy	Type
Kampfumo	80,555	10	Central Districts
Kamubukwana	207,509	9	Secondary District
Matola Sede	238,637	8	
Kanihamankulu	129,405	6	Tertiary District
Kamaxaquene	199,255	5	
Machava	421,676	5	
Kamavita	331,968	4	
Total Population	855,361		

> Strong territorial influence is observed between the “central core” and the northern districts of the metropolitan area

Physical and socio-economic linkages are observed between the “primary cluster” along the **main transportation routes** towards the northern administrative posts of **Marracuene** and **Infulene**, both categorised as Tertiary District.

Infulene and *Marracuene* concentrate 25 per cent of the population of the metropolitan area and are strongly linked through the northern primary road. This access **to transport infrastructure and services** allows a good range of **commercial activities** and **professional services**.

Main Administrative Post	Population (2017)	Level of hierarchy	Type
Marracuene	230,925	6	Tertiary Districts
Infulene	410,000	5	
Total Population	640,925		

> Weaker territorial influence is observed between the “central core” and the southern areas of the metropolitan area

The administrative posts of **Matola Rio**, **Boane sede** and **Katembe** concentrate only 7 per cent of the population of the Metropolitan Area. Despite their connection with the “Central core” through the primary road, the railway and the new bridge, their urbanization and socio-economic level is still very low, as they are categorized as Local Districts.

Main Administrative Post	Population (2017)	Level of hierarchy	Type
Boane Sede	106,629	3	Local Districts
Matola rio	35,435	2	
Katembe	32,248	3	
Total Population	174,312		

> Isolated administrative posts

Weak territorial and socio-economic influence is observed between the “primary cluster” and the administrative posts of **Machubo** and **KaNyaka**. The lack of adequate transport infrastructure and services seems to be the main constraint, as they mainly rely on unpaved local roads or boats, which leaves them **isolated from the socio-economic dynamics of the metropolitan area**.

> Primary corridors

Along the **main transportation routes, national road and the railway**, towards South Africa (west) and the north of the country.

> Secondary corridor

Along the **main transportation routes, national road and the railway**, towards South Africa (south).

¹ NB: In meteorology, an isopleth indicates a geographical line connecting points showing an equal level of incidence of a specific meteorological feature. In the case of the MoF, the term is used to indicate a geographical line representing a specific aggregate ranking.

MAIN SOCIO-ECONOMIC LINKAGES IDENTIFIED

Maputo's Centro Urbano and Matola Sede configure the "central core" of the metropolitan area. Strong territorial influence is observed between the "central core" and the northern districts of the metropolitan area, while the southern districts are less influenced. Machubo and Kanyaka appear to be rather isolated.

Categories of settlements

- Central District (CD)
- Secondary District (SD)
- Tertiary District (TD)
- Local District (LD)

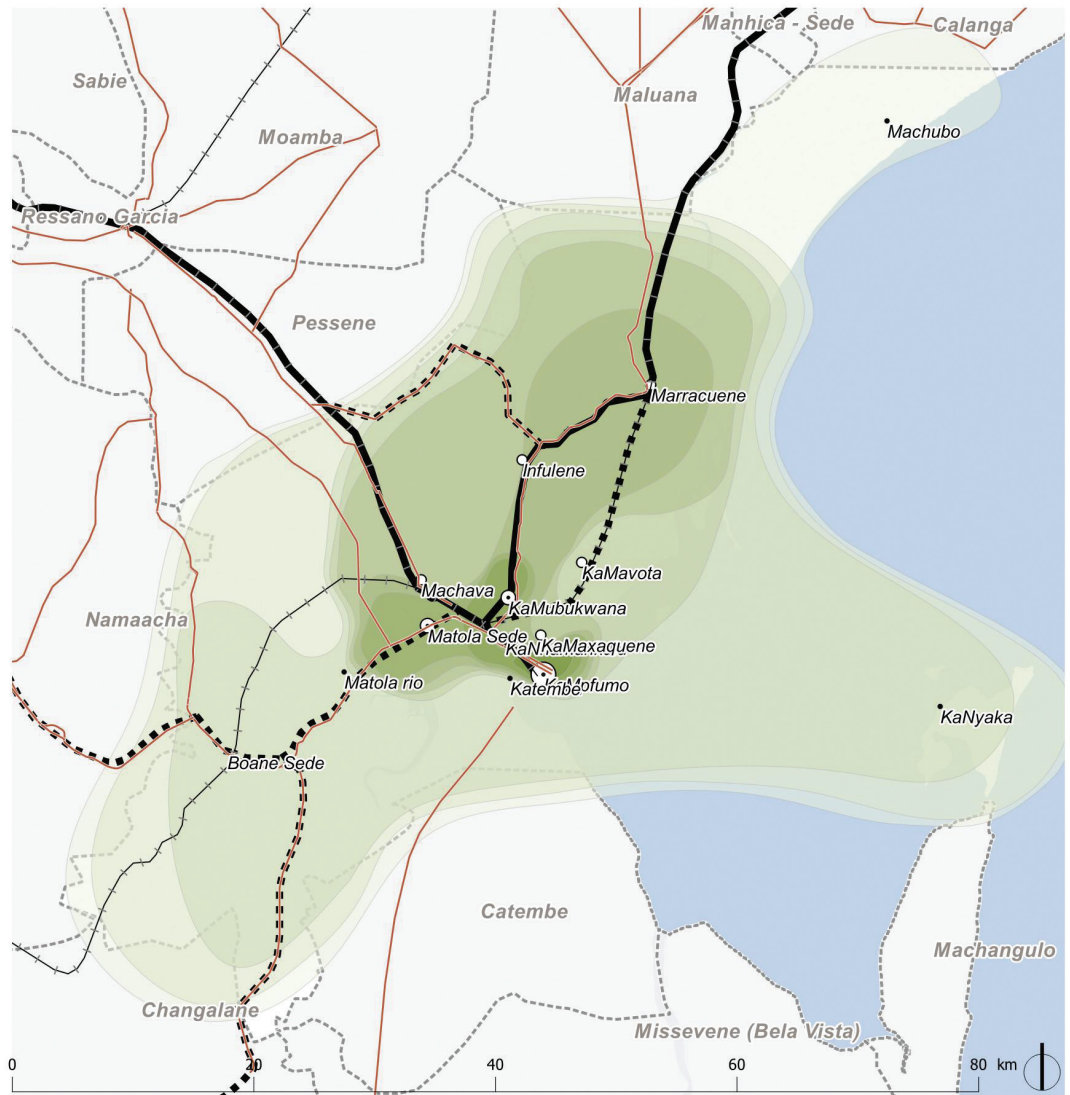
Hierarchical levels (MoF)

- 1
- 2
- 3
- 4
- 5
- 6
- 8
- 9
- 10

- Main corridor
- - - Secondary corridor

Transport infrastructure

- Primary Road
- Secondary Road
- Railway
- - - Locality boundaries
- Ocean



SPATIAL DISTRIBUTION OF THE TERRITORIAL DEVELOPMENT

Kampfumo (Maputo), Kamubukwana (Maputo) and Matola Sede (Matola) are the most developed districts in the region. Enhanced mobility networks enable economic growth. Northern and southern areas of the region show the lower levels of territorial development.



- Central District (CD)
- Secondary District (SD)
- Tertiary District (TD)
- Local District (LD)
- Ocean

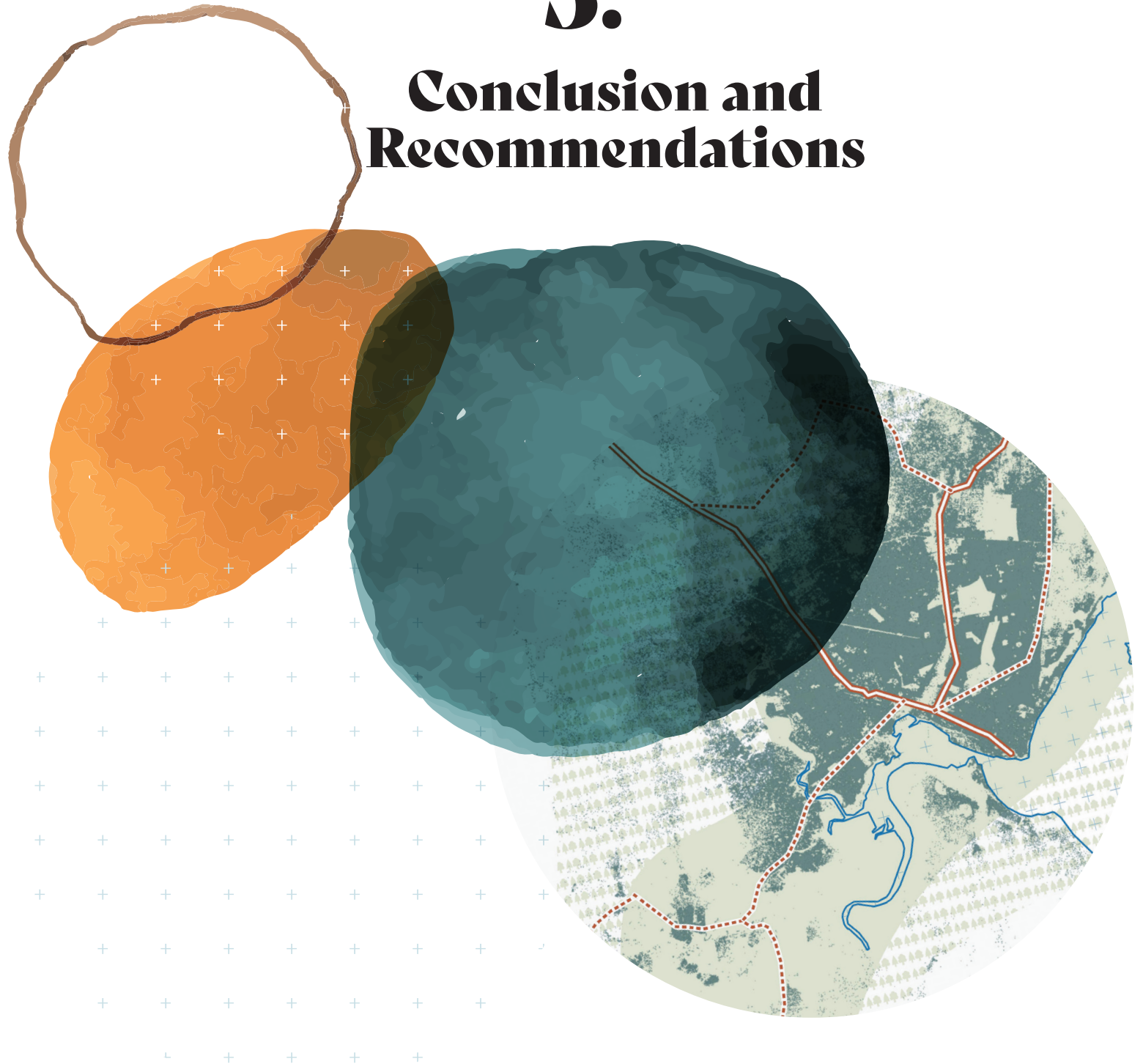


Sources: Instituto Nacional de Estadística (INE),



5.

Conclusion and Recommendations



● 5.1 Summary of findings

The *Spatial Development Framework (SDF)* is a participatory regional spatial planning method to support national, regional and local government decision-making processes on where to prioritize investments. The methodology combines three main spatial planning tools that can be easily adapt to the specific context in which it is being used.

The **Matrix of Functions (MoF)**, which is the main SDF tool serve as a **pilot to adapting this methodology** to the Mozambican context and more specifically to the **context of urban metropolitan areas**. Moreover, it provides the basis for the definition of a **work plan for a study that includes the whole country to support policies related to urbanization and national transformation., such as the forthcoming implementation of a National Urban Policy**.

The exercise is based on data collected through a simple questionnaire to inventory the selected **135 functions and filled by government representatives from Districts** (Maputo City) and Administrative Posts (Matola, Boane e Marrcuene).

The spatial analysis shows that the territorial development across the Metropolitan Area of Maputo is mainly concentrated in **Kampfumo (Maputo), Kamubukwana (Maputo) and Matola Sede (Matola)**. The district of **Kampfumo (Maputo)** is considered the **central administrative core** of the region while the neighboring districts of **Kamubukwana (Maputo)** and **Matola Sede (Matola)** concentrate the industrial and commercial activities of the region.

On the contrary, **Machubo, Boane and Kanyaka, appear to be rather isolated** and **show lower levels of territorial development across the region**. These areas are the least populated and the predominant activities are related mainly to agriculture production.

Administrative units where accessibility is better (access to main road infrastructure and more means of transportation are available), **show better coverage of public services** (education) and **commercial and economic activities and professional services**.

The analysis of specialized economic functions helps to delineate three **Economic Specialization Areas** to allocate strategic interventions to **reinforce the socio-economic linkages identified between the administrative units and facilitate strategic planning and coordination between districts and administrative units, and between local and regional government**.

The **Administrative and Commercial Core** located at the **centre of the metropolitan area, provides central commercial and administrative functions at the national and metropolitan level**. The first core of influence, the **Logistic and Urban Expansion Area**, account for a good accessibility to transport infrastructure and availability of land which have the potential to prioritise **logistic economic activities and urban expansion to alleviate the city centre**. The third core of influence, the **Productive and Environmental Area**, is predominantly rural, which can **provide the required forestry and agriculture land, as well as green spaces for recreational and tourism activities**.

● 5.2 Synthesis of scenarios

Business as usual scenario

If business is conducted as usual, meaning that strategic recommendations are not implemented, the **territorial development of the Metropolitan Area of Maputo will be more unbalanced and inequitable**.

- > **Mobility constraints across the Metropolitan Area will lead to the concentration of socio-economic development in fewer administrative posts/districts**

The lack of adequate transport infrastructure within the administrative posts of **Machubo, Boane and Kanyaka**, will expose communities to the risk of being isolated for several days from markets, medical facilities, schools, and other core community services. Therefore, population will be pushed to find their living in **Kampfumo (Maputo), Kamubukwana (Maputo) and Matola Sede (Matola)**, which will be **unlikely to be able to support current and expected population growth** at the same living standard as today.

- > **Poor urban planning and land management will increase spontaneous occupation of protected areas which will lead to biodiversity loss**

Without adequate planning instruments to support the expected urban expansion, unplanned **urban areas will occupy protected areas** such as **forests or rivers and streams**. This will lead to **forest loss, soil erosion and land degradation, sewage and solid waste discharge into rivers** resulting in **loss of biodiversity and pollution of water sources**

- > **The loss of agricultural land coupled with a weak agro-industrial and industrial sector will increase vulnerabilities of communities**

The loss of **agricultural land** coupled with the **lack of investments to enhance agro-industrial and industrial sector** to promote entrepreneurship and create new jobs, will reduce **incomes from crops and vegetables** and increase **informal selling and daily wages with low employment opportunities**, leaving communities highly vulnerable.

Implementation strategic interventions to support the Economic Specialization Areas

The implementation of recommended strategic investments in each **Economic Specialization Area** will support **people's socio-economic development** through a **diversified economy, improved infrastructure and healthy ecosystems**.

- > **Cooperation and coordination between all levels of government, private sectors and civil society will ensure more balanced and participatory territorial planning**

Enhancing **cooperation and communication between districts and administrative posts** will avoid that several administrative posts **propose the same development**

projects or a concentration of intervention in some administrative posts, which would lead to districts competing among themselves and more unbalanced territorial developments. Moreover, improving Local leaders' capacity building towards more participatory territorial planning instruments will strengthen realistic and integrated territorial development.

- > The use of adequate planning instruments will support urban expansion and urban infill while protecting biodiversity

There is a very significant and strong body of evidence linking contact and exposure to the natural environment with improved health and wellbeing. Access to, and engagement with, the natural environment is associated with numerous positive health outcomes, including improved physical and mental health.⁴ Investments on basic services and infrastructure through renewal energy sources such as solar power coupled with the implementation of adequate planning instruments to support urban expansion in Katembe, Boane, Marracuene and Infulene, and urban infill in Kamaxaquene, Machava and Kamavota will alleviate the urban pressure in Kampfumo, Kamubukwana and Matola Sede, while protecting forestry and agriculture land in Machubo as well as green spaces for recreational and tourism activities in Kanyaka.

- Good access to mobility network enables economic growth and poverty reduction across all the Metropolitan Area

Investment on transport infrastructure and services across the whole metropolitan areas will ensure urban-rural connectivity from productive areas in Machubo to reach logistic and distribution sites in Boane, Marracuene and Infulene and commercial markets sites in Kamubukwana and Matola Sede.

- Fostering local employment, local production and local consumption will support livelihoods and employment opportunities among young people

Investments on education and skills on agroindustry and logistic activities linked to the existing transport infrastructure (railway and national road) in Boane, Marracuene and Infulene will enable young people to remain in these administrative posts and find more remunerative employment. Moreover, promoting entrepreneurship linked to existing commercial network through capacity-building programs on marketing and overall business management will create new jobs and employment opportunities the districts of Kamaxaquene, Machava and Kamavota.

5.3 Strategic Recommendations

It is worth mentioning that a well-balanced socio-economic development can only be achieved if the rural and the urban environment are developed simultaneously, hence a well-structured system of settlements/centres recognises and reinforces these rural-urban linkages to accommodate and supply the needs for both, urban and rural population.

The analysis of specialized economic functions helps to delineate three Economic Specialization Areas to allocate strategic interventions to reinforce the socio-economic linkages identified between the administrative units and facilitate strategic planning and coordination between districts and administrative units, and between local and regional government. (Map MMA03)

Cooperation between districts and administrative posts appears to be crucial towards coordinated implementation of interventions, to avoid that several administrative posts propose the same development projects or a concentration of intervention in some administrative posts, which would lead to districts competing among themselves and more unbalanced territorial developments.

- > The Administrative and Commercial Core is located at the centre of the metropolitan area concentrates the highest levels of physical and socio-economic development of the region. Provides central commercial and administrative services for the whole metropolitan area.

Administrative posts/ District	Category	Population
Kampfumo	Central District	The total population of this area is 1.609.005 inhabitants, 65% of the total population of the Metropolitan Area
Kamubukwana Matola Sede	Secondary District	
Kanihamankulu Kamaxaquene Machava Kamavota	Tertiary District	

Strategic recommendations

- > Draft adequate planning instruments to support urban infill and to avoid occupation of protected areas
- > Promote entrepreneurship linked to existing commercial network through capacity-building programs on marketing and overall business management to create new jobs
- > Enhance collective transport services across the whole metropolitan areas

- > The Logistic and Urban Expansion Area is the first core of influence of the city centre. The administrative posts within this area account for a good accessibility to transport infrastructure and availability of land which have the potential to prioritise logistic economic activities and urban expansion to alleviate the city centre.

Administrative posts/ District	Category	Population
Marracuene Infulene	Tertiary District	The total population of this area is 815.237 inhabitants, about 35% of the total population of the Metropolitan Area
Boane Sede Katembe Matola rio	Local District	

Strategic recommendations

- > Draft adequate planning instruments to support urban expansion to alleviate the urban pressure in the city centre and to avoid occupation of protected areas
 - > Improve access to basic services and infrastructure through renewal energy sources such as solar power
 - > Support agroindustry and logistic activities linked to the existing transport infrastructure (railway and national road) to promote entrepreneurship and create new jobs
- > The **Productive and Environmental Area** is the **second core of influence**. These administrative posts are predominantly rural, which can provide the required forestry and agriculture land, as well as green spaces for recreational and tourism activities.

Administrative posts/ District	Category	Population
Machubo Kanyaka	Local Districts	The total population of this area is 11.348 inhabitants

Strategic recommendations

- > Draft adequate planning instruments to protect forestry and agriculture land, as well as green spaces for recreational and tourism activities
- > Enhance road infrastructure and collective transport services from the productive areas in Machubo to commercial markets and distribution sites
- > Improve agricultural practices to increase crop yields and diversify crop varieties to increase family incomes
- > Support the hospitality industry and build the capacity of the private sector to provide high levels of service delivery

● 5.4 Contribution to national policies and strategies

The results and objectives defined in the Matrix of Function are in line with the specific objectives defined by the Spatial Planning Policy in Mozambique for rural and urban areas. These objectives consist in the promotion of planning strategies for urban centers that favor **productive activities, services, full employment, environmental health, spatial integration of residential functions, cultural and leisure activities, the improvement of living conditions in discriminated areas** in terms of their environmental quality, its deficiencies in

infrastructure and services and its low environmental, residential and suburban location.

In Mozambique, urban areas are areas limited to territories with status of Autarchy / Municipality - being city or town. According to Law 2/97 local authorities are created, extinguished and modified taking into account: geographic, demographic, economic, social, cultural and administrative factors; national or local interests; historical or cultural reasons; assessment of the financial capacity to carry out their duties.

Within these evaluation criteria for creating local authorities, we understand that in addition to evaluating existing data, there should be simple and quick tools that can measure the level of social and economic development of the territorial units and their relationship with neighboring areas in order to contribute to improve the evaluation of these criteria. The Matrix of Function is one of these tools, taking into account of its simplicity and rapidity in crossing and systematizing different data in order to obtain an assessment close to reality at social and economic development level.

During the Expert Group Meeting held in 2019, some necessities emerged about updating some legal instruments, where the results of the pilot exercise of the Matrix of Function in Maputo demonstrated that they can be a basis to support in the review:

- > The Land Law regulation (rural areas) and the Urban Soil Regulation (urban areas) derive both from the Land Law, and may in their review to define a strategy for the provision of infrastructure and minimum services in less attractive areas or areas with less potential within the territory (rural or urban), in order to enhance them and guarantee the balance in spatial development, as recommended by the Matrix of Function;
- > The result of the Matrix of Function brings several gaps in relation to provision of services and infrastructure, while prioritizing some investments. Where there are well-conceived spatial plans developed and implemented, the level of imbalance is lower, meaning there is a need for policy and strategy designs (in financial and human resources) to facilitate their implementation in order to reduce territorial inequalities and imbalances in socio-economic development between different territorial units.

Urban expansion and coordination in infrastructure development are concrete actions that often mean a relationship of interdependence between central urban, peri-urban and rural areas adjacent to urban centers in Mozambique, meaning greater coordination in governance, provision and management of certain services and infrastructures (such as roads, transport, water supply and others). This fact implies the creation of legal structures or mechanisms to operationalize a multidisciplinary, inter-ministerial team that can favor the connection and coordination between the different local organs of the State in the social and economic development.

ECONOMIC SPECIALIZATION AREAS

The analysis of specialized economic activities helps to delineate three Economic Specialization Areas: Administrative and Commercial core, located at the centre of the metropolitan area concentrates the highest levels of physical and socio-economic development of the area.

Logistic and Urban Expansion Area, good access to transport infrastructure coupled with availability of land allow logistic economic activities and urban expansion to alleviate the city centre

Productive and environmental areas, to protect forestry and agriculture land, as well as green spaces for recreational and tourism activities

Strategic Economic Areas

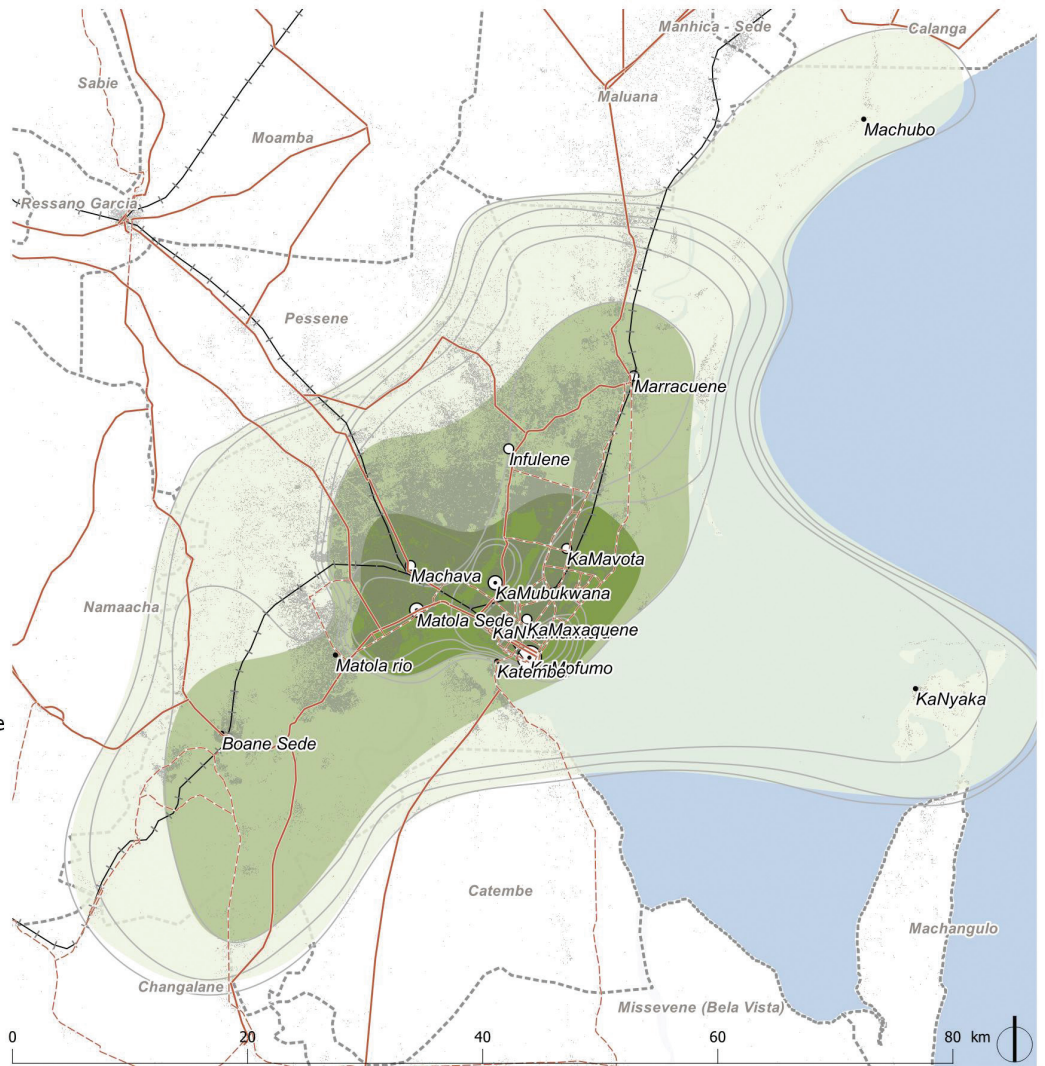
- Productive and Environmental Area
- Logistic and Urban Expansion Area
- Administrative and Commercial Core
- Built-up Areas

Categories of settlements (MoF)

- Central District (CD)
- Secondary District (SD)
- Tertiary District (TD)
- Local District (LD)

Transport infrastructure

- Primary Road
- Secondary Road
- Railway
- Locality boundaries
- Ocean



SOCIO-ECONOMIC LINKAGES

Maputo's Centro Urbano and Matola Sede configure the "central core" of the metropolitan area

Strong territorial influence is observed between the "central core" and the northern districts of the metropolitan area, while the southern districts are less influenced. Machubo and Kanyaka appear to be rather isolated.



Sources: Instituto Nacional de Estatística (INE),

PRINCIPAL DISTRICT (PD)	SECONDARY DISTRICT (SD)	CENTRAL DISTRICT (CD)	Número total de funções	Centrality score	Level of hierarchy	Category
7. Mini-sistema privado de abastecimento de água			97	1814,92	10	CD
9. Subestação transformadora			101	1671,83	9	SD
21. Rede de esgotos			84	1405,68	8	SD
30. Estrada secundária em terra			82	1067,14	6	TD
31. Via local revestida			77	1032,07	6	TD
38. Estação ferroviária			70	898,06	5	TD
40. Paçagens de nível			71	859,01	5	TD
49. Serviços distritais de educação, Juventud			60	807,82	5	TD
68. Clínicas privadas			66	729,21	4	TD
81. Centro de Formação Profissional			61	655,00	3	LD
90. Monumentos históricos e culturais			46	641,79	3	LD
98. Cooperativas de Crédito			59	596,03	3	LD
131. Advogado			45	492,46	2	LD
27. Estrada nacional revestida			20	228,99	1	LD
72. Serviço de ambulância						
115. Hotel						
130. Arquiteto/engenheiro civil						
89. Centro cultural						
92. Parque Infantil						
103. Mercado pescado						
106. Mercado agrícola						
119. Indústrias alimentares						
121. Indústrias transformadoras						
123. Fabricação de produtos metálicos						
129. Escritório de consultoria						
18. Estação de Rádio						
19. Balcão de atendimento de comunicação						
45. Ponte-cais						
46. Serviços distritais de planeamento e						
54. Gabinete de corrupção						
64. Hospital General						
67. Hospital privado						
71. Consultórios médicos privados						
91. Jardins						
108. Matadouros						
128. Empresas de telecomunicações						
1. Estação de captação de água						
2. Estação de tratamento de água						
44. Portos/Estaleiros navais						
61. Posto de Bombeiros						
62. Estabelecimento prisionário						
87. Museu						
100. Casas de Cambio (Western Union,						
107. Mercado artesanal						
63. Alfândega/migração						
17. Estação de Televisão local						
22. ETAR						
24. Aterros sanitários						
28. Estrada nacional em terra						
36. Basculas						
51. Tribunal judicial de Província						
55. Procuradoria General						
56. Procuradoria Provincial						
83. Academia de ciencias policiais (ACIPOL)						
88. Cinema						
93. Estádio Desportivo						
96. Sede Banco						
127. Empresas de televisão						
41. Aeroporto Internacional						
42. Aeroporto nacional						
43. Aeródromos/Aerogare						
50. Tribunal Supremo						
58. Ministério Interior de Justiça						
65. Hospital Provincial						
104. Mercado grossista						
			97	1814,92	10	CD
			101	1671,83	9	SD
			84	1405,68	8	SD
			82	1067,14	6	TD
			77	1032,07	6	TD
			70	898,06	5	TD
			71	859,01	5	TD
			60	807,82	5	TD
			66	729,21	4	TD
			61	655,00	3	LD
			46	641,79	3	LD
			59	596,03	3	LD
			45	492,46	2	LD
			20	228,99	1	LD

A2. Prevalent functions by category

Category of Function	LOCAL DISTRICT (LD)	TERTIARY DISTRICT (TD)	SECONDARY DISTRICT (TD)	CENTRAL DISTRICT (TD)	Nº Functions
	Hierarchical Level: 1 - 2 - 3	Hierarchical Level: 4 - 5 - 6	Hierarchical Level: 4 - 5 - 6	Hierarchical Level: 10	
Abastecimento de Água	3. Estação de distribuição de água	6. Poço / Furo protegido	1. Estação de captação de água		8
	4. Rede de distribuição de água	7. Mini-sistema privado de abastecimento de água	2. Estação de tratamento de água		
	5. Fontanários				
	8. Balcões de atendimento de água				
Energia Elétrica	10. Posto de transformação (PTs)	9. Subestação transformadora			4
	12. Rede de distribuição de energia				
	13. Balcão de atendimento de energia				
Rede de telecomunicações	14. Antenas de telemovel TMCEL		18. Estação de Rádio	17. Estação de Televisão local	6
	15. Antenas de telemovel Vodacom		19. Balcão de atendimento de comunicação		
	16. Antenas de telemovel Movitel				
Saneamento e esgotos	20. Fossas	21. Rede de esgotos		22. ETAR	4
		23. Drenagem de águas pluviais			
Limpeza pública	25. Contentores para depositos de lixo	26. Lixeira municipal		24. Aterros sanitários	3
Infraestruturas e rede de transporte	33. Caminhos de terra	27. Estrada nacional revestida	44. Portos/Estaleiros navais	28. Estrada nacional em terra	19
	34. Terminais/parques estacionamento	29. Estrada secundaria revestida	45. Ponte-cais	36. Basculas	
	35. Paragems (Bus stop)	30. Estrada secundaria em terra		41. Aeroporto internacional	
	37. Pontes	31. Via local revestida		42. Aeroporto nacional	
		32. Via local em terra		43. Aerodromos/ Aerogare	
		38. Estação ferroviária			
		39. Linhas ferreas			
		40. Pasagems de nivel			
Sub total	16	14	6	8	44

Category of Function	LOCAL DISTRICT (LD)	TERTIARY DISTRICT (TD)	SECONDARY DISTRICT (TD)	CENTRAL DISTRICT (TD)	Nº Functions	
	Hierarchical Level: 1 - 2 - 3	Hierarchical Level: 4 - 5 - 6	Hierarchical Level: 4 - 5 - 6	Hierarchical Level: 10		
Serviços e Estabelecimentos Sociais	Órgãos Locais do Estado/ Serviços de Extensão do governo provincial	47. Serviços distritais de atividades económicas (SDAE) 48. Serviços distritais, género, mulher e accção social (SDSMAS) 49. Serviços distritais de educação, juventud e tecnologia (SDEST)	46. Serviços distritais de planeamento e infraestrutura (SDPI)		4	
	Serviços Judiciais	52. Tribunal Judicial de Distrito 53. Tribunal comunitário 57. Procuradoria Distrital		54. Gabinete de corrupção 50. Tribunal Supremo 51. Tribunal judicial de Província 55. Procuradoria General 56. Procuradoria Provincial	8	
	Serviços públicos de segurança	59. Comando de PRM 60. Posto de Policia		61. Posto de Bombeiros 62. Estabelecimento prisionário 63. Alfândega/ migração 64. Hospital General	58. Ministerio interior de justicia	7
	Unidades Sanitárias	69. Centro de Saúde 70. Posto de Saúde 73. Curandeiros Tradicionais/ Medicina tradicional	68. Clínicas privadas 72. Serviço de ambulancia	67. Hospital privado 71. Consultórios médicos privados	65. Hospital Provincial	8
	Estabelecimentos de Educação	74. Creche/Centro infantil 75. Escola de Ensino Primário do 1º Grau (EPI) 76. Escola de Ensino Primário Completo EPC2 (EPII) 77. Escola de Ensino Secundário do 1º Ciclo (ESGI) 78. Escola de Ensino Secundário do 2º Ciclo (ESGII) 80. Instituto Técnico Profissional Nível Médio 82. Centro de Alfabetização de Adulto 84. Universidades	79. Instituto Técnico Profissional Nível Básico 81. Centro de Formação Profissional		83. Academia de ciencias policiaes (ACIPOL)	11
	Equipamentos culturais, desportivos	86. Biblioteca 94. Campo de jogos 95. Cemitério oficial	90. Monumentos historicos e culturais	87. Museu 89. Centro cultural 91. Jardins 92. Parque Infantil	88. Cinema 93. Estádio Desportivo	10
	Sub Total	19	8	12	9	48

Category of Function	LOCAL DISTRICT (LD)	TERTIARY DISTRICT (TD)	SECONDARY DISTRICT (TD)	CENTRAL DISTRICT (TD)	Nº Functions	
	Hierarchical Level: 1 - 2 - 3	Hierarchical Level: 4 - 5 - 6	Hierarchical Level: 4 - 5 - 6	Hierarchical Level: 10		
Atividades Económicas	Instituições Financeiras e Meios de Pagamento	97. Agências Bancaria 101. ATM (multibanco)	98. Cooperativas de Crédito 99. Instituições de Micro Finanças 102. Posto de correios	100. Casas de Cambio (Western Union, Money Gram) 96. Sede Banco	7	
	Mercados			103. Mercado pescado 104. Mercado grossista 106. Mercado agricola 107. Mercado artesanal 108. Matadouros	5	
	Comércios e atividades comerciais	109. Restaurante 110. Bar 111. Mercearia 112. Supermercado 113. Loja de venda material de construção 114. Loja de venda de mobiliário 116. Pensão 117. Farmácia 118. Bomba de combustível	115. Hotel			10
	Empresas e atividades industriais	124. Fabricação de material construção (blocos, telhas,...) 126. Moageria	122. Empresas especializadas de construção/ Engenharia civil	119. Indústrias alimentares 121. Indústrias transformadoras 123. Fabricação de produtos metálicos 128. Empresas de telecomunicações 129. Escritorio de consultoria	127. Empresas de televisão	9
	Serviços Profissionais	134. Veterinário	130. Arquiteto/ engenheiro civil 131. Advogado 132. Pescador 133. Agrônomo 135. Contabilidade			6
	Subtotal	14	10	10	3	37
Total	49	32	28	20	129	

Leaving no one and no space behind

The Matrix of Functions to Strengthen Integrated Territorial Development in Maputo Metropolitan Area



REPÚBLICA DE MOÇAMBIQUE
MINISTÉRIO DA ADMINISTRAÇÃO ESTATAL E FUNÇÃO PÚBLICA

UN HABITAT
FOR A BETTER URBAN FUTURE

ACCD Agência Catalana
de Cooperació
al Desenvolupament



Município de Maputo



Município da Matola



Município de Boane



Distrito de Marracuene

