



Ministry of Urban Renewal, Housing and
Living Environment



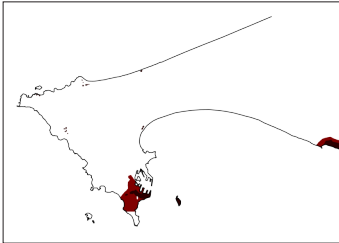
Project for Urban Master Plan of Dakar and Neighboring Area for 2035



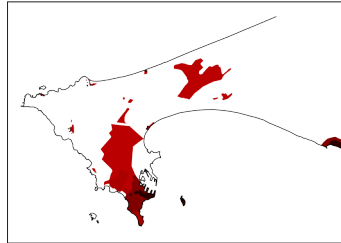
January 2016
Department of Urbanization and Architecture
(DUA)

PROJECT FOR URBAN MASTER PLAN OF DAKAR AND NEIGHBORING AREA FOR 2035

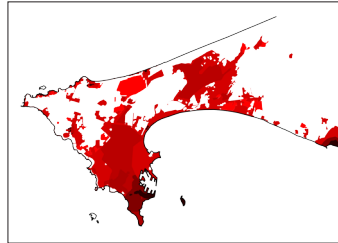
1 Background and Planning Area



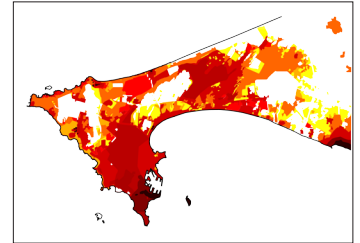
In 1900 with a population of 100,000



In 1967 with a population of 500,000



In 1986 with a population of 1.25 million



In 2009 with a population of 2.5 million



Background

Dakar is the capital of Senegal, the western most country in West Africa. In 1902 Dakar became the capital of French West Africa, comprising eight regions (Senegal, Mauritania, Mali, Guinea, Cote d'Ivoire, Niger, Burkina Faso and Benin). It was the center of politics, administration, economy and international trade.

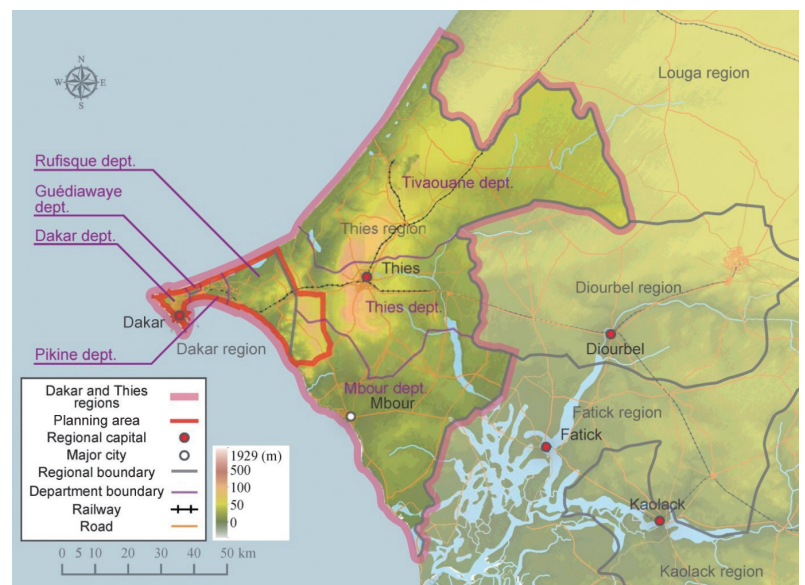
Traditionally Dakar has been expanding eastward. The population has continued to increase mainly due to the massive influx of the rural population. It grew from 0.5 million in 1967 to 3.1 million in 2013, a growth equivalent of 4 percent per year. The rapid urbanization caused by this increased population has resulted in various urban problems.

The Planning Area

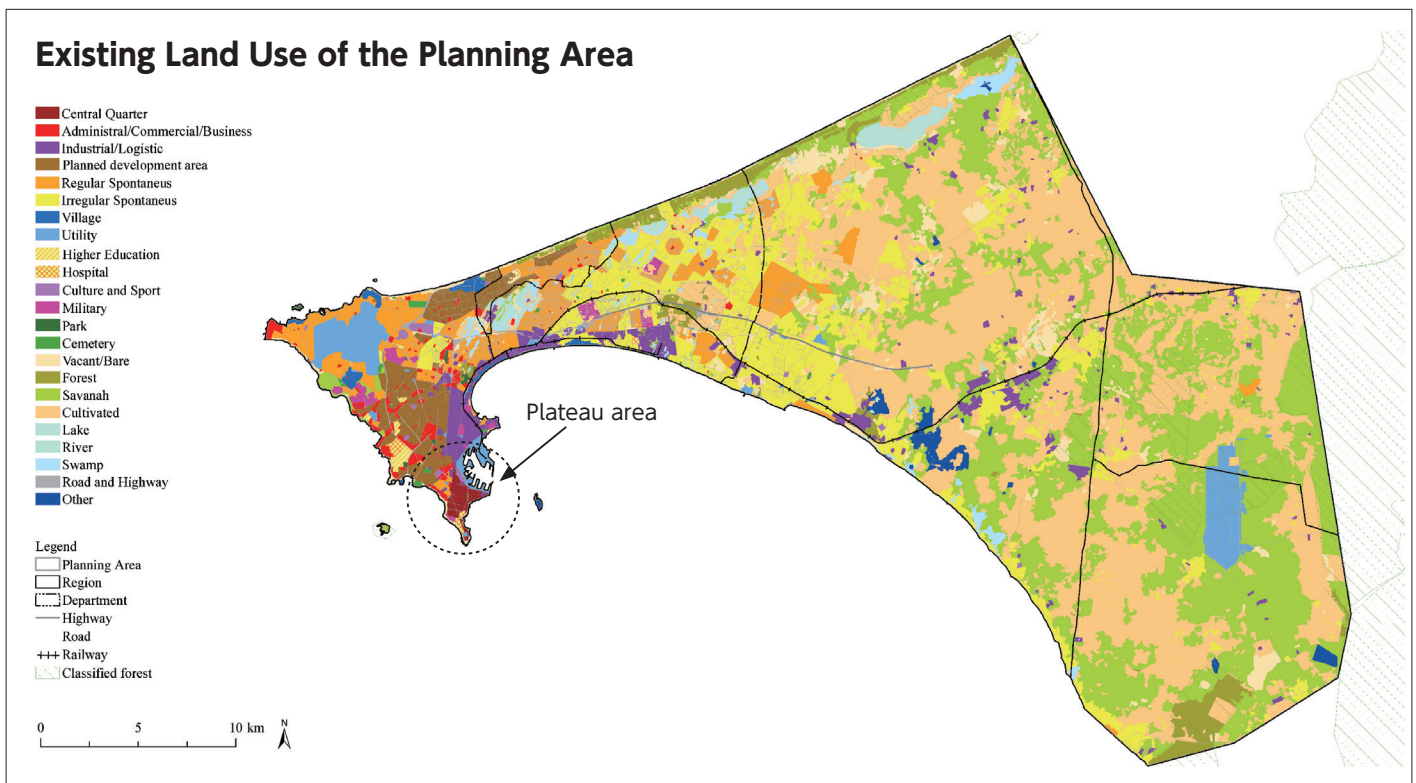
The Planning Area is Dakar Region and part of the Thies Region, which covers an area of about 820 km². It comprises four departments (Dakar, Guediawaye, Pikine and Rufisque) and five communes (Diender Guedj, Keur Moussa, Noto (Thies Dept.), Diass and Sindia (Mbour Dept)) in the Thies region.

This planning area was selected in consideration of the need for an appropriate master plan to coordinate various development efforts already taking place and expected to come in such a way as to strengthen the leading role and potential of this area in the development process of Senegal.

The Department of Urbanization and Architecture (DUA) under the Ministry of Urban Renewal is in charge of the project. DUA will support local governments in preparing PDUs and PUDs based on the experience in preparing the PDU for Dakar and the neighboring area.



2 Urban Problems and Issues



Mono-polar urban structure The Planning Area is characterized by a mono-polar structure with a concentration of business and commercial activities in the Plateau area as shown in the Existing Land Use of the Planning Area presented above. This mono-molar structure is causing chronic heavy traffic congestion in the morning and evening peak hours (Photo-1) and an excessive burden on urban infrastructures.



(Photo-1) Chronic traffic congestion in the morning and evening peak hours

Reduction of fertile farmland The rapid urbanization has proceeded without adequate land use control. This has resulted in the encroachment of the urban areas into farmlands with high horticulture potential, especially in the Niaye area (Photo-2). This trend has been accelerated by the ongoing master plan for 2025.



(Photo-2) Urbanization encroaching into farm lands with high agriculture potential

Urbanization in unsuitable areas The massive influx of the rural population has resulted in habitation in unsuitable areas such as flood prone areas, which has caused a deterioration in the living environment and increased urban disaster risks (Photo-3).

Environmental problems Environmental problems are emerging such as the pollution of the Hann Bay coastal area, which is a result of the discharge of untreated industrial wastewater (Photo-4), and unsanitary dumping of waste at the Mbeubeus waste disposal site (Photo-5).



(Photo-5) Mbeubeus land fill site causing serious environmental problems



(Photo-4) Hann Bay coast polluted by untreated industrial wastewater



(Photo-3) An abandoned house in a flood prone area

3 Sustainability Diagnosis

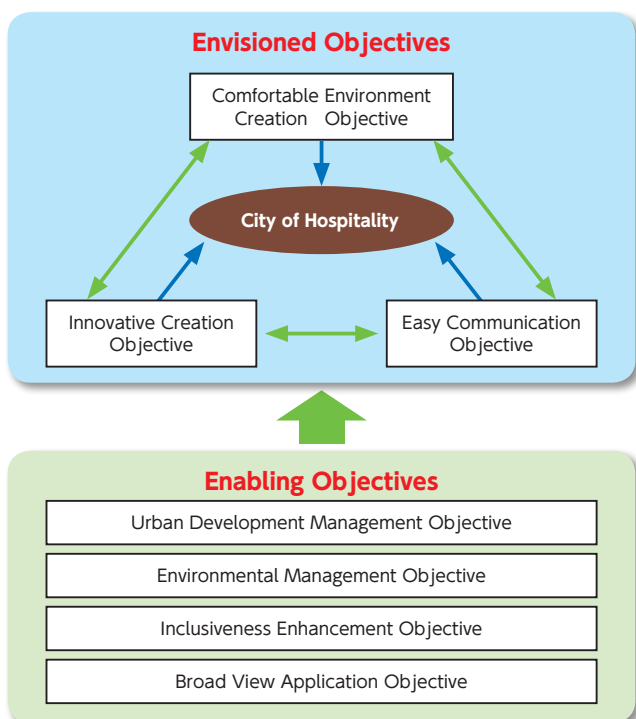
| Perspective | Number of indicator with high sustainability | Number of indicator with low sustainability | Overall Sustainability |
|--|--|---|------------------------|
| 1. Management of risks caused by rapid changes | 2 ⁽¹⁾ | 4 ⁽²⁾ | Low |
| 2. Inclusiveness | 1 ⁽³⁾ | 3 ⁽⁴⁾ | Low |
| 3. Attractiveness | 0 | 4 ⁽⁵⁾ | Low |
| 4. Urban management capacity and urban infrastructures | 0 | 8 ⁽⁶⁾ | Low |
| 5. Participation | 1 ⁽⁷⁾ | 1 ⁽⁸⁾ | Medium |
| 6. National, international, regional perspective | 2 ⁽⁹⁾ | 2 ⁽¹⁰⁾ | Medium |
| Total | 6 | 22 | Low |

Sustainable development is defined as *the improved quality of life is ensured continuously for the present generation without sacrificing the needs of the future generations by minimizing the load on regional and global environment.* The sustainability of the Study Area was analyzed from the six perspectives

The sustainability of the Study Area is generally low with only six indicators showing high sustainability, while 22 indicators showed low sustainability. The development of the Study Area could be built upon the high sustainability factors such as peaceful society and people and a long tradition of participation.

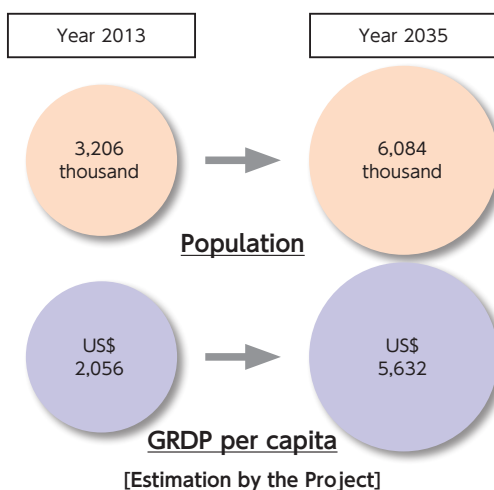
Note: The indicators evaluated include the following. ⁽¹⁾ CO₂ emission, ethnic conflict ⁽²⁾ regional environment, natural disasters, global economy, social risk (security) ⁽³⁾ elderly protection (social safety net) ⁽⁴⁾ poverty, access to school in irregular settlements, access to health facilities in irregular settlements ⁽⁵⁾ investment environment, urban park, amenities, tourism ⁽⁶⁾ urban planning system, personal capability for urban planning and management, financial capability, urban infrastructures such as transport, water supply, sewerage/sanitation, solid waste management and power ⁽⁷⁾ traditional participation practice ⁽⁸⁾ official participation system ⁽⁹⁾ international communication infrastructure (internet), international cooperation (ECOWAS, UEMOA) ⁽¹⁰⁾ national and regional planning system, regional hub function in West Africa

4 Master Plan for 2035



Vision and Objectives

- A “City of Hospitality (teranga)” is the vision for the Planning Area in the year 2035 agreed by all the stakeholders. It is a city (including the neighboring area) where generosity, openness and receptiveness toward different values, both internally and externally, are ensured.
- “City of Hospitality” will be realized by achieving the three objectives envisioned by the people (Envisioned Objectives) and the four objectives that will support the three envisioned objectives (Enabling Objectives). A set of strategies and policy packages are proposed to realize these seven objectives.
- The vision and objectives were elaborated with the participation of citizens, local administrations officers, the private sector and the DUA officers. Four rounds of stakeholder meetings were held at the five places in the Planning Area, 20 stakeholder meetings in total.



Stakeholder meeting in Rufisque



Stakeholder meeting in Pikine

Socio-economic Framework

A socio-economic framework for the Planning Area was prepared for population and gross regional domestic products (GRDP) for 2035. It is estimated that the population of the Planning Area will almost double in 20 years. Per capita GRDP will reach the level of middle income countries.

Land Use Plan for 2035

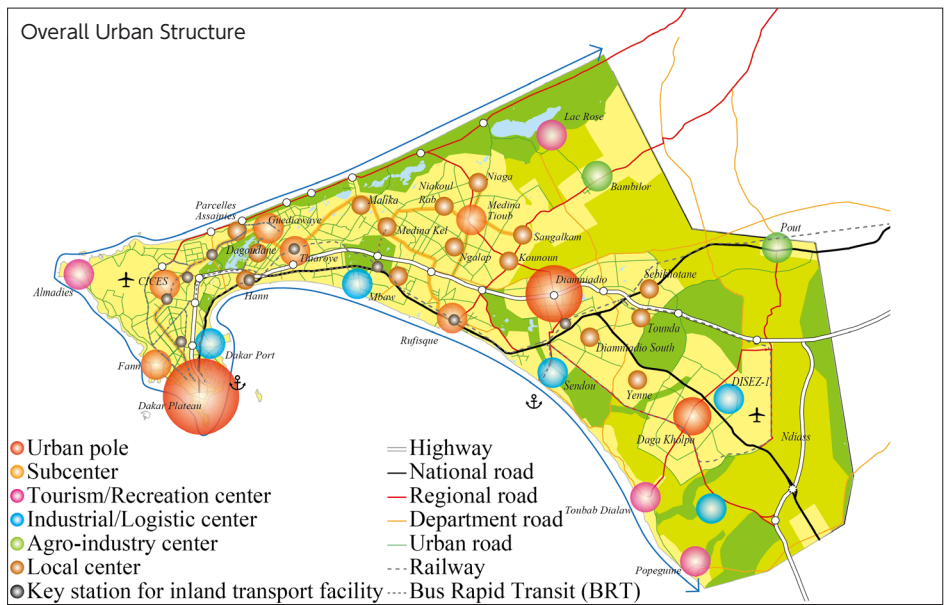
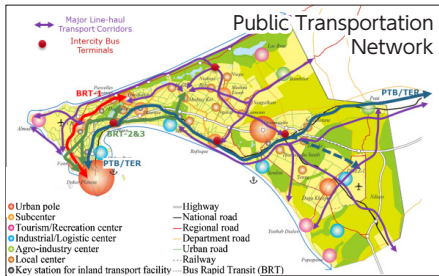
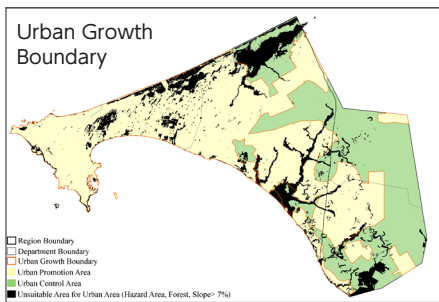
Urban Structure: The proposed urban structure in 2035 is characterized by (i) a multi-polar urban structure with Diamniadio and Daga Kholpa as the new urban poles in the east in addition to the existing Plateau pole, (ii) the suppression of urbanization in hazard areas such as flood prone areas, (iii) the preservation of the Niaye area where the productivity of fruits and vegetable production is high and (iv) the green belts surrounding the urban agglomerations. The land use plan for 2035 is proposed integrating these factors as presented in the Land Use Plan for 2035.

Urban Growth Boundary: The concept of an urban growth boundary is proposed to ensure the development of an urban area in a compact form avoiding hazard areas, while adequately preserving classified forests and farm areas.

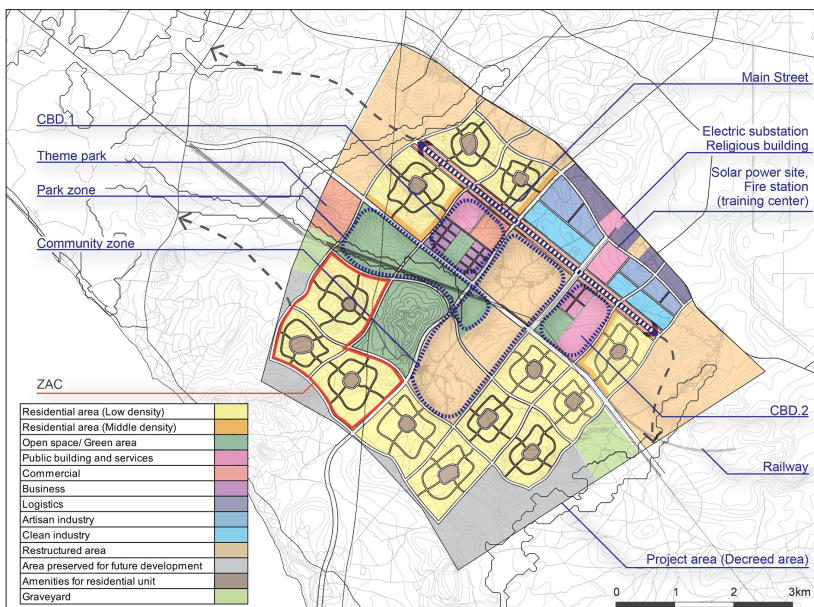
Public Transportation System: The urban poles of Diamniadio, Daga Kholpa and Plateau and other urban centers will be connected by an efficient public transportation system including BRT (Bus Rapid Transit) and a regional train as well as a radial and north-south trunk roads system.

Strategic Environmental Assessment (SEA): A strategic environmental assessment (SEA) endorsed the proposed land use plan from an environmental perspective.

Sector Development Plans: The sector development plans in transportation, water resources and water supply, sewerage, solid waste management, electricity and renewable energy and urban disaster risk reduction are prepared in harmony with the land use plan 2035.



5 Detail Urban Plan for Daga Kholpa

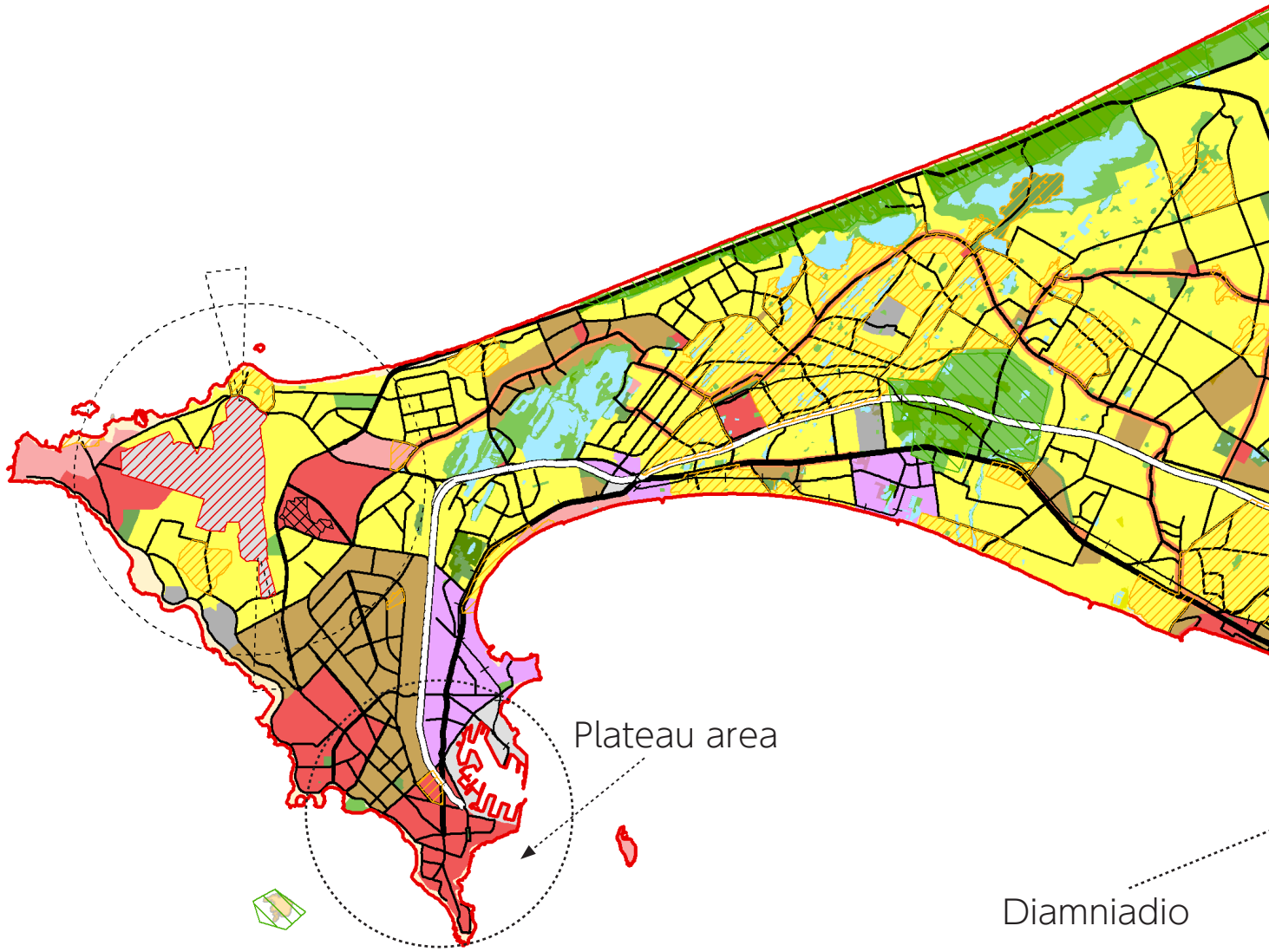


Daga Kholpa located adjacent to the new international airport (AIBD) under construction and constituting a part of the special economic zone is planned to be a new international gateway city. A population of 184 thousand will be accommodated in an area of 3,891 hectares in 2035.

The planned land use is characterized by (i) a vast green area in order to prevent urbanization in the flood prone areas, (ii) the coexistence of a modern urban area with the existing villages and its surrounding areas and (iii) securing good living environment.

Note: The restructured area: the area comprising the existing villages and surrounding areas including farm lands where land uses are reorganized and the infrastructures are improved.

Land Use Plan for 2035



Legend

- Study Area
- Urban Growth Boundary
- Highway
- National Road
- Regional Road
- Department Road
- Urban Road
- Railway
- Urban Pole

Land Use

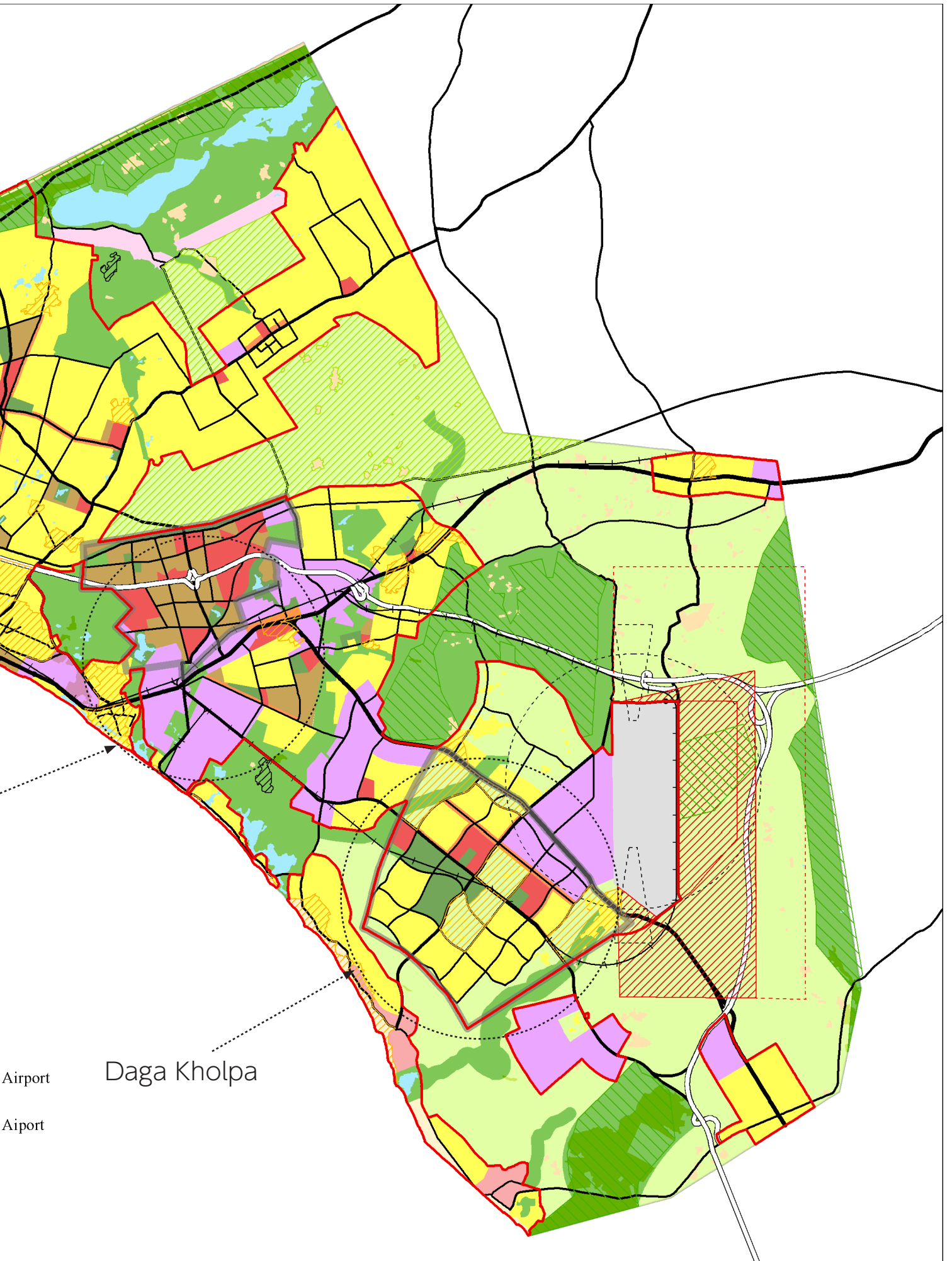
- CB: CBD
- RD: Roadside Development
- MX: Mixed Use
- UC: Urban Community
- IL: Industrial and Logistics
- TR: Tourism and Recreation
- TRs: Rural tourism and Recreation
- RC: Rural Community
- UT: Utility
- SE: Security
- GP: Green Promotion and Management
- PK: Park
- AG: Agriculture
- CA: Coastal Protection
- WB: Water Body

Regulatory Frame

- Classified Forest
- Enhanced Agriculture Area
- Restructuring Area
- Redevelopment Area
- Reserve Area for Infrastructure
- Reserve Area for Urban Area around
- Special Control Area around Airport
- Obstacle Limitation Surfaces around

0 3 6 km





Airport

Aiport

Daga Kholpa

6 Policy Packages and Pre-feasibility Study

Policy Packages Proposed

All the projects and actions proposed are grouped into eight policy packages shown below. They follow the seven objectives for achieving the City of Hospitality vision with the addition of the technical foundation building policy.

| | |
|--|--|
| Comfortable Environment Creation Policy | Easy Communication Policy |
| Urban infrastructure improvement | Transportation infrastructure improvement |
| Non-structural urban services improvement | Transportation demand control initiative |
| Law and order improvement | Logistic infrastructure improvement |
| Amenity improvement | ICT infrastructure improvement |
| Innovative Creation Policy | Urban Development Management Policy |
| Agriculture & fishery promotion | Strengthening technical, institutional and legal tools for master plan |
| Industry promotion | Awareness raising of people on master plan |
| Service & tourism promotion | Awareness raising of ministries, central organizations and local administrations |
| Investment environment improvement | |
| Environmental Management Policy | Technical Foundation Building Policy |
| Regional environment improvement | Studies & surveys |
| Global environment improvement | Capacity development |
| Inclusiveness Enhancement Policy | Broad View Application Policy |
| Livelihood improvement | West African regional cooperation strengthening for sustainability enhancement |
| Tax and social insurance improvement improvement | |
| Public transportation access improvement for irregular settlements | |
| Gender mainstreaming | |

Pre-feasibility Study

Among the projects and actions proposed in the policy packages, three infrastructure projects with higher urgency were selected for a detailed analysis. The result of the pre-feasibility studies suggests that the following two transportation projects should be promoted to the implementation stage.

- IntelIntersection Improvement Project on VDN and Front de Terre Road: improvement of the five intersections (SDE, Cite Keur Gorgui, Aime Cesaire, Khar Yalla and Bourguiba)
- InteTraffic Improvement Project around Baux Maraichers Bus Terminal: improvement of intersections at N-1/access road and at Rufisque Road/access road, improvement of access for buses to the terminal, widening of the access road and the establishment of a direct on-ramp to the motorway

Based on a preliminary analysis in the solid waste management sector, it is recommended that a region-wide study on introducing a waste-to-energy system to West Africa be conducted. The waste-to-energy system is expected to reduce the amount of waste as well as the import of coal and CO₂ emission by generating power utilizing the heat generated in the waste incineration process.