

Dr Oumar Cissé

Challenges of Urbanisation in Dakar

Land-use Planning, Sanitation, Public
Transportation and Public Housing



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ACRONYMS AND ABBREVIATIONS

AADM	Municipal Development Agency	MULHP	Ministry of Urban Planning, Housing and Public Hygiene
AFTU	Urban Transport Professionals' Fund	NDF	Nordic Development Fund
AGEROUTE	Roads Works and Management Agency	ONAS	National Sanitation Office of Senegal
AIBD	Blaise Diagne International Airport	PAMU	Urban Mobility Improvement Programme
ANAT	National Agency for Land Use Planning	PAP	Priority Action Plan
ANSD	National Agency for Statistics and Demography	PDA	Sanitation Master Plan
APIX	Agency for the Promotion of Investments and Major Works	PDAL	Master Plan for the Management of Liquid Waste
ARD	Regional Development Agency	PDD	Drainage Master Plan
ASC	Sports and Cultural Associations	PDU	Master Plan for Town Planning
BOS	Operational Monitoring Office	PDUD	Dakar Urban Travel Plan
BRT	Bus Rapid Transit	POS	Land Use Plan
CBO	Community Based Organisation	PROGEP	Rainwater Management and Climate Change Adaptation Project
CETUD	Executive Council of Urban Transport in Dakar	PROZEBID	Zero Slum Project
DGUA	General Delegation for the promotion of the Urban Centres of Diamniadio and Lac Rose	PSE	Plan Senegal Emergent
DGPU	Directorate of Town Planning and Architecture	PTB	Petit Train de Banlieue
DSCOS	Land Occupation Monitoring and Control Directorate	PUD	Detailed Urban Plan
DUA	Town Planning and Architecture Directorate	RGPHAE	General Census of Population and Housing, Agriculture and Livestock
EMTASUD	Household Survey on Mobility, Transportation and Access to Urban Services in the Agglomeration of Dakar	SAFRU SA	Société d'Aménagement Foncier et de Rénovation Urbaine
ENES	National Employment Survey in Senegal	SDADT	Land Use Planning and Development Master Plan
FDV	Fondation Droit à la Ville	SDAU	Master Plan for Town Planning and Development
FORREF	Land Restructuring and Regularization Fund	SN HLM	National Low-cost Housing Company
GEF	Global Environment Facility	SEZ	Special Economic Zone
IAGU	African Institute of Urban Management	STAGD	Grand-Dakar Temporary Development Service
JICA	Japan International Cooperation Agency	TER	Train Express Regional
MGLDAT	Ministry of Local Governance, Development and Land Use Planning	UGL	Urban Growth Limit
MRUHCV	Ministry of Urban Renewal, Housing and Living Environment	UNACOIS	National Union of Tradesmen and Industrialists of Senegal
		ZAC	Concerted Development Zone

EXECUTIVE SUMMARY

In many African countries, such as Senegal, we are witnessing poorly controlled urbanisation with the proliferation of so-called “spontaneous” neighbourhoods. The Dakar region is marked by this reality through the inadequacies of its current urban planning system, which leads to a lack of control of urban space, a deterioration of the living environment and the social vulnerability of many segments of the population.

The Dakar region is a peninsula surrounded by the sea and has 70 kilometres of coastline. It covers an area of 550 km² and stands out from the rest of the country with a density of 6,973 inhabitants per km². Its population was 3,835,019 in 2020, or nearly a quarter of the total population (22.9%) on an area representing 0.3% of the national territory (ANSD 2015 Rapport Projection de la population du Sénégal 2013 - 2063). The Dakar region is home to 48.7% of the urban population, 90% of industry and 80% of infrastructure.

Town planning in the Dakar region is characterised by imbalances in terms of the geographical location and distribution of urban infrastructures and services. Uncontrolled urban sprawl has created an unbalanced urban structure with the concentration of commercial infrastructure in downtown Dakar. This has led to heavy traffic congestion, particularly at peak times. The development of infrastructure and public facilities has not kept pace with the rapid urbanisation. The gap thus created has led to the deterioration of the living environment and conditions.

The Senegalese government has tried to control the urban growth of Dakar by designing Master Urban Plans (1948, 1967, 1980 and 2000), but without much success. The Dakar Urban Master Plan 2025, designed in 2000 and approved in 2009, was not very effective, mainly because it did not take sufficient account of local realities, did

not involve local governments and the population in its development and was unable to deal adequately with disaster risks such as flooding. It is in this context that in 2014 the PDU Dakar and its surroundings 2035 was prepared by the Ministry of Urban Renewal, Housing and Living Environment with the support of the Japan International Cooperation Agency (JICA).

Land-use planning in Senegal is governed by the town planning code (Law No. 2008-43 of 20 August 2008 revised by Law No. 2009-26 of 8 July 2009 amending Article 68) and its implementing decree (Decree No. 2009-1450 of 30 December 2009 on the regulatory part of the town planning code). Competences in designing the Urban Master Plan (PDU), the Master Plan for Town Planning and Development (SDAU), the Detailed Urban Plan (PUD), the Concerted Development Zones (ZACs), urban renewal and replotting areas are transferred to the communes or to the city if it is established between the communes (law n° 2013-10 of 28 December 2013 on the general code of local governments).

The Urban Master Plan (PDU) and the Detailed Urban Plan (PUD) include a presentation report, planning maps and regulations. They are subject to public enquiry and consultation with municipal councillors. They are approved by decree and are revised in the same way as their establishment.

The Master Plan for Urban Development of Dakar and its surroundings horizon 2035 was approved in 2016 and its land use plan (POS) provides for 25.2% of land use for agriculture and 18.5% for the promotion and management of green spaces. The POS also includes areas to be reorganised, road infrastructure, forests, parks and green spaces, and water bodies. However, planning maps

at the appropriate scale (1:10,000) are not available in town halls or posted in public places to allow participatory operational monitoring of land use restrictions and reserves. The total amount of investments planned to achieve the 2035 Master Plan is estimated at CFAF 7,231 billion. Unfortunately, there is no explicit monitoring and evaluation mechanism for this plan.

The detailed urban development plan (PUD) of Pikine Guédiawaye is designed in accordance with the general guidelines set out in the Master Plan for Urban Development of Dakar and its surroundings for the period up to 2035, and it integrates the conclusions of the Drainage Master Plan by preserving spaces dedicated to the storage of rainwater or to drainage works. The PUD provides for 36 development and equipment projects in 11 sectors for a total budget of 338,550 million CFAF. The PUD's land-use map for 2035 shows the different zones of use, the spaces dedicated to the planned facilities and infrastructures, the road layouts, the areas to be cleared and their protection measures. The PUD does not provide for appropriate mechanisms for disseminating these planning maps to the population.

The shortcomings in the **participation of local and regional authorities** stem from the lack of technical resources dedicated to town planning in these institutions and from lack of consideration by the ministries responsible for designing the plans. Local governments should be involved as co-heads in the planning process. In the same way as for the agents of the DUA, the capacity of municipal professionals in town planning should be built.

The PDU Dakar 2035 and the PUD of Pikine and Guédiawaye was based on a **participatory process**. However, several stakeholder groups state that they have no knowledge of these planning documents. This is particularly true of craftsmen, traders and even youth organisations. The urban plan is a "reserved domain", "a matter for technicians", according to the traders' and youth associations. The special needs of people living with a disability are not taken into account in these documents. In addition, the craftsmen feel that their needs, particularly in terms of the allocation of dedicated spaces, are ignored.

Community participation can be strengthened through **public enquiry** by ensuring that the appropriately scaled planning maps are displayed in places accessible to and frequented by the public in all relevant town halls. In addition, they should be publicised through advertising in the media in national languages.

The PUD Pikine Guédiawaye provides for specific developments that can be promoted through the dissemina-

tion of large-scale maps (e.g. 1/5,000 or even 1/2,000) fostering ownership. In addition, the use of participatory mapping in the design of urban plans can contribute to promote a better understanding by the public of land allocation to different uses and restrictions.

The development phase of the master plan is only one step and monitoring and evaluation is another that must be planned. Thus, reducing the duration of the development and official approval phases of urban plans is essential to improve the effectiveness of their implementation. Finally, the department of Rufisque, which has the largest land reserves and the strongest urban growth in the region, must urgently be the subject of a PUD.

The urban expansion of the Dakar region is taking place in Pikine (Keur Massar in particular) but above all in Rufisque where the communes of Bambilor, Diamniadio, Ti-vauane Peulh-Niaga, among others, are facing a strong urban push. In order to study this urban expansion, three (03) peripheral extension districts in Bambilor, Diamniadio and Keur Massar were the subject of participatory territorial diagnoses including an urban wandering and a focus group. The urban centre of Diamniadio was also studied on the basis of available documentary data.

These extension districts were studied from the point of view of subdivisions, the development of which is subject to administrative authorisation issued by the Minister in charge of town planning. This authorisation requires the developer to carry out viability work. It is refused if the land is unfit for habitation, for example if it is exposed to flooding or if it is located in a protected area of ecological interest.

The Bambilor Extension 3 district was created from the transformation of farmers' fields into housing plots. In this recently expanded district, which is partially inhabited and under-equipped, there are subdivisions supervised and initiated by the commune of Bambilor and others by property developers under the auspices of the municipality. In the context of these subdivisions, the plots are shared between the developer, the municipality, the surveyor and the company in charge of the earthworks. None of the subdivisions studied in Bambilor Extension 3 has been the subject of a subdivision permit issued by the Minister in charge of town planning. In this district of Bambilor, most of the land is national domain land, initially allocated for agriculture. Thus, none of the field owners have any real right to the land that was allocated to them for agricultural use. Today, the holders of residential plots only hold written instruments from the municipal council that has made the allocation decisions, or the allocation decisions signed by the mayor. These

deeds issued by the commune are illegal, as national domain land is allocated for farming and clearing. It is therefore understandable that land purchasers in these types of subdivisions may find it difficult to transfer the ownership to their name. Land use change is necessary before re-allocation.

The Boune district, an old village in the commune of Keur Massar, was built without a subdivision plan. Most of the land occupied belongs to the national domain and the inhabitants mostly hold deeds of sale or transfer validated by the municipality as well as deeds of donation. A few people have official title deeds. The central core of the district is characterised by a winding pattern of narrow streets. The expansion of the village has been unplanned and land reserves are currently exhausted. The community is experiencing enormous difficulties in finding a site for community facilities. For the population, urban reorganisation remains the only alternative to improve their living environment.

The district of Déni Malick Guèye in the municipality of Diamniadio is an old agricultural village. The district is located in the agroecological zone of the Niayes, and for a long time the population has derived most of its livelihood from horticulture. Crossed by the toll motorway, which has split it into two weakly connected parts, the district is blocked in its expansion by the Diamniadio urban centre. Déni Malick Gueye was first subdivided in 2006 under the leadership of the rural council of Diamniadio, which was approved by the administrative authority. The subdivided areas have streets of 6 to 8 metres in width. As part of this subdivision of 1,500 plots, the field owners received housing plots in return (four plots per hectare) while benefiting from the plots reserved for the village population. A second subdivision of 1,596 plots was made but was not authorised. Today, the entire extension area of the original allotment has been swallowed up by the Diamniadio urban centre. The agroecological potential of the village is being challenged by the urban centre, which favours investments in ministerial buildings, apartment blocks, hotels, industrial and sports facilities, among others.

The Diamniadio urban centre is being built to compensate for the extreme concentration of economic activities and administrative services in downtown Dakar. It is being developed according to the principle of mixed use on a site of about 2,000 ha, which is to polarise industrial and commercial activities as well as administrative structures. By 2035, it should accommodate a population of 300,000 inhabitants. The site of the centre straddles four municipalities. However, the development of the centre should have integrated part of the horticultural areas

that existed on the site. The existence of 3 lakes and 4 dams shows the importance of the site's agricultural vocation, which agroecology could have consolidated. The populations of the neighbouring communes of Bargny and Diamniadio, whose possibilities for expansion have been erased, should also be able to access housing in the centre, for greater social cohesion and integration of the latter into its host environment. This should help to avoid the rejection of the centre by some local people. Finally, the development of the centre should have integrated the neighbouring areas for greater territorial consistency and infrastructural continuity.

The concentration of commercial, administrative and institutional activities in Dakar Plateau and the urban sprawl towards the north-eastern sectors are detrimental to movement fluidity in the Dakar region where households spend 11% of their income on mobility. **Walking is the most common means of transport in Dakar, accounting for 70% of the total. More than 80% of motorised movements**, which accounts for 30%, are provided by public transport (PT). Among these means, AFTU minibuses ("Tatas"), cars rapides and clandestine taxis (clandos) are the most used, accounting for 35%, 20% and 12% of trips respectively. Dakar Dem Dikk buses cover only 6% of trips. **The department of Dakar accounts for 64% of all means of transport in the region for 46% of households.**

Travel in the Dakar region is affected by the lack of public lighting, passable roads, public transport, pavements, space on pavements, footbridges, speed bumps and pedestrian crossings. These deficiencies are mostly observed in the informal settlements of the suburbs. As for walking, it is confronted with the absence, congestion or poor condition of pavements, the lack of lighting at night, flooding in the rainy season, bad smells and the presence of litter, the risk of accidents, the failure of pedestrian crossings, connecting or crossing structures, footpaths and pedestrian walkways.

In order to cope with these dysfunctions, the Dakar Urban Development Plan 2025 (PDUD 2025) adopted twenty-five (25) projects for a total budget of CFAF 647,043,000,000 in order to improve the fluidity of the movement of people, the efficiency and reliability of goods transport, increase road safety, control development with a view to rational management of space and better coherence between urbanisation and the transport system, preserve the environment and ensure adequate and equitable financing of the transport system.

Two (02) new structural transport projects have also been designed in Dakar: the Train Express Regional (TER) and the

Bus Rapid Transit (BRT). The TER crosses 18 communes in the departments of Dakar, Pikine and Rufisque and will be built in two phases: the first from Dakar station to Diamniadio (36 km) and the second from Diamniadio to the AIBD (19 km). The financing of phase 1 of the project is 483.3 billion CFAF. The TER will carry up to 115,000 passengers per day and serve 13 stations and stops between the suburbs of Dakar and the new town of Diamniadio. The BRT will carry up to 300,000 passengers per day over a distance of 18.3 km, with twenty-three (23) stations, crossing fourteen (14) communes from the Petersen bus station to the prefecture of Guédiawaye and will have 144 articulated buses. Its overall funding is 306 billion. The BRT fare is set at 300 CFAF on the corridor. These projects must be combined with bold initiatives to improve pedestrian travel and promote vertical housing to facilitate commuting. Also, the TER fare should be accessible to low-income populations in order to make it a means of mass transport.

In terms of satisfaction, public transport users consider the cost of using a taxi to be high and the cost of using a clando taxi to be affordable. However, they consider the clando taxi as a risky means of transport. The price of transport is considered to be the main advantage of cars rapides, but users deplore their slowness and the risk of accidents. The *Ndiaga Ndiaye* is handicapped, according to them, by its poor spatial coverage, while the Dem Dikk bus, although considered the safest mode of transport, is confronted with long waiting times at stops and insufficient space in the buses. They appreciate the AFTU mini-buses for their speed but deplore the inadequacy of seats on board. The two main qualities they recognise in the Petit Train Bleu (PTB) are its speed and its low fare. However, they deplore that the stops are far from their homes.

The populations of the suburbs, particularly Pikine and Guédiawaye, are still the most affected by deficiencies in urban movements, particularly because of the very high concentration of activities in the department of Dakar, urban sprawl, and the lack of development, subdivision and equipment of the peri-urban area. Improving the quality of movements for the population of the Dakar suburbs inevitably requires more regular urbanisation.

The prevalence of autonomous sanitation in the departments of Pikine and Guédiawaye, which contributes to the pollution of the water table, can be explained by the irregularity of the urban fabric and the density of the built-up area, as the majority of these sites have not been developed prior to the settlement of the population.

The wastewater treatment system selected by ONAS as part of the update of the Dakar 2025 liquid sanitation

master plan for a large part of Guédiawaye and Pikine (Zone EST in the PDA) is the conventional collective sewerage network. The total estimated investment for the complete implementation of the PDA by 2025 in this zone represents CFAF 143,026 millions (wastewater networks, collection works and treatment plant).

The implementation of the PDA 2025 started timidly in Pikine in 2019 with the financing by the West African Development Bank (BOAD) of 3 billion 245 million francs to carry out works capable of impacting less than 5% of the population of the area (30,000 inhabitants in Pikine). The classic collective sanitation network chosen for the Pikine-Guédiawaye area is nevertheless confronted with major constraints, namely a shallow relief made up of a succession of small depressions, the presence of the water table at a depth of often less than 2m, and predominantly spontaneous or village-type urbanisation, which will result in considerable additional costs.

The master plan for stormwater drainage in the Dakar peri-urban region (PDD) carried out by ADM in 2012 has compartmentalised the area into 20 catchment areas. The works planned by the PDD include nearly 150 km of canals, 185 stormwater storage areas with a total storage capacity of more than six million cubic metres and 23 sea discharge structures.

To ensure the implementation of the PDD, **the Rainwater Management and Climate Change Adaptation Project (PROGEP)** was carried out with a budget of 36.8 billion CFAF. The PROGEP has made it possible to protect 900 ha and 167,000 inhabitants from recurrent flooding in 8 communes of the suburbs. It has resulted in a lowering of the water table by 1 to 2 metres. However, the drainage works carried out within the framework of PROGEP are exposed to obstruction by litter, silting, accumulation of sediment carried along which favours the growth of aquatic plants, and the degradation of the slopes protecting the basins against erosion. To this end, an effective and regular maintenance system involving the local governments and communities must be put in place.

With the observed drop of one to two metres in the water table following the PROGEP drainage works, it is important to carry out a major collective wastewater treatment programme in the area. At the same time, the local governments should support the population in the construction of individual sanitation facilities that meet the standards. Finally, the department of Rufisque should also have a master sanitation plan (PDA) and a rainwater drainage master plan (PDD).

In the Dakar region, informal housing occupies 35% of

inhabited areas and 43% of the territory of the Pikine department. In order to reduce this housing, **urban re-organisation**, which allows the development of undeveloped, dilapidated or unhealthy areas, is necessary.

The purpose of Fondation Droit à la Ville (FDV) is to carry out land restructuring and regularisation projects for the benefit of local governments and the State and with the participation of the beneficiary populations. Between 2002 and 2021, it has restructured 630 ha, or an average of 33.16 ha per year. The Hann Bel Air restructuring project is considered to be the most successful of the FDV's initiatives, in particular because of better management of the wastewater sanitation aspect with the possibility of connecting households to the network. Tableau Ferraille, a restructured neighbourhood in the municipality of Hann Bel Air, has benefited from a main road and ten access roads, the paving and reforestation of the rights-of-way, public lighting, the installation of public benches and a sewage system. However, the people of Tableau Ferraille have noted shortcomings in communication and awareness-raising, delays in land regularisation and difficulties in recovering related costs, the elimination of certain streets that were initially validated, and the delay in receiving the sanitation works.

The PUD of Pikine Guédiawaye provides for the restructuring and regularisation of 22 km² of land in 12 communes in Pikine and Guédiawaye. At the current rate of operations to restructure informal settlements implemented by the FDV (33.16 ha per year), it will take 66 years to reorganise the informal neighbourhoods in the suburbs of Dakar (Pikine and Guédiawaye), not taking into account the growth of informal housing in the Dakar region and the failure to take into account the situation in the department of Rufisque, which nowadays accommodates most of the urban extensions.

In 2013, the housing deficit was estimated at 322,000 units nationwide, including 158,000 in Dakar, while the

supply was barely 5,000 units per year. Dakar is the only region in the country where renting is the majority tenure status, with 46.0% of households renting against 37.1% owning their own home. To reduce the shortage of affordable housing, Senegal has invested in the massive production of **public housing**.

Thus, through its 2014-2018 Priority Action Plan (PAP), the Plan Senegal Emergent had planned to carry out the Programme for Accelerating the Supply of Public Housing with the ambition of building 10,000 to 15,000 public housing units per year. However, only a total of 28,898 housing units (9,897 public housing units and 19,001 serviced housing units) were built between 2014 and 2018 (Operational Monitoring Office of Plan Senegal Emergent). Since 2019, the Government of Senegal has committed to building 100,000 public housing units in 5 years through the Zero Slum Project (PROZEBID). In order to assess this **'100,000 housing project'**, it is first necessary to examine the reasons for the ineffectiveness of previous initiatives. Several other questions remain in relation to this new project. They concern in particular access to housing for workers in the informal sector and the consideration of self-construction.

Thus, strategies for the production of public housing must be multi-faceted and include, among other things, the mass production of serviced and equipped land intended for supervised self-construction, the production of rental housing, the support of municipalities in the creation of administrative subdivisions with transparent allocation, the creation of PUDs targeting extension areas as a priority, and the allocation of minimum quotas of public housing to underprivileged groups, including workers in the informal sector, women, and heads of households living with a disability. In addition, beyond affordable housing, particular emphasis should also be placed on access to workspaces for informal actors (especially craftsmen and traders) in these urban development programmes.

INTRODUCTION

Accelerated urban growth has become a global reality. Faced with this phenomenon, we are witnessing a re-course to urban planning which is evolving and adapting to the different contexts, in order to frame and guide urban developments in the short, medium and long term. Urbanisation on the African continent is taking place rather late, but massively. Its particularity is that it is taking place in a context of fairly weak industrialisation.

In many countries, such as Senegal, there is anarchic settlement of populations, voluntary approaches to the provision of basic urban services, often without respect for the required standards. And it is only afterwards that those in charge of planning think of intervening, often without consultation with the local population or the main actors of the informal economy sector. The consequence is that we are faced with poorly controlled urbanisation and the emergence of so-called 'spontaneous' neighbourhoods on the one hand, and on the other hand with over-dimensioned planning of urban space in the new cities created for the middle classes with relatively high incomes. This planning does not take into account a large proportion of workers in the informal economy whose income does not allow them to apply for houses in these new cities and who often encounter problems of transport and mobility.

The Dakar region is not immune to this constraining reality, which exposes the inadequacies of the current town planning system. It is encountering major difficulties in providing a structured and coherent framework for urbanisation, but also in a democratic and fair manner, in order to promote sustainable urban development taking into account the economic, social and ecological dimensions.

In this context, the lack of control over urban space, land speculation, strong demographic growth, the problem of public transport, the public housing crisis, the rapid growth of cities in the Dakar region, the deterioration of the living

environment and the social vulnerability of many segments of the population, all contribute to the multiplication of problems and the difficult situation experienced by town planning.

Faced with this situation, the study on land-use planning in Dakar that this report proposes to present has proved to be more than necessary. To carry out the study, the following four major data collection tools were used:

1. Documentary research on laws and decrees, planning documents, study reports, monographs, etc.;
2. Participatory territorial diagnoses of four extension districts of the Dakar agglomeration, including formal and informal settlements as well as the urban centre of Diamniadio;
3. Semi-structured interviews with institutional actors from the central state, local governments, non-governmental organisations;
4. Two mini multi-stakeholder workshops, each bringing together relevant actors at central, local, association and community level.

The processing of the data collected through content analysis has made it possible to produce this report, which is structured around the following six chapters:

1. Overview of the Dakar region;
2. Land-use planning in Dakar;
3. Peri-urban extensions of Dakar;
4. Access to essential services in the suburbs: mobility and sanitation;
5. Prevention and eradication of informal settlements in Dakar;
6. Recommendations for inclusive and equitable urban development of Dakar.

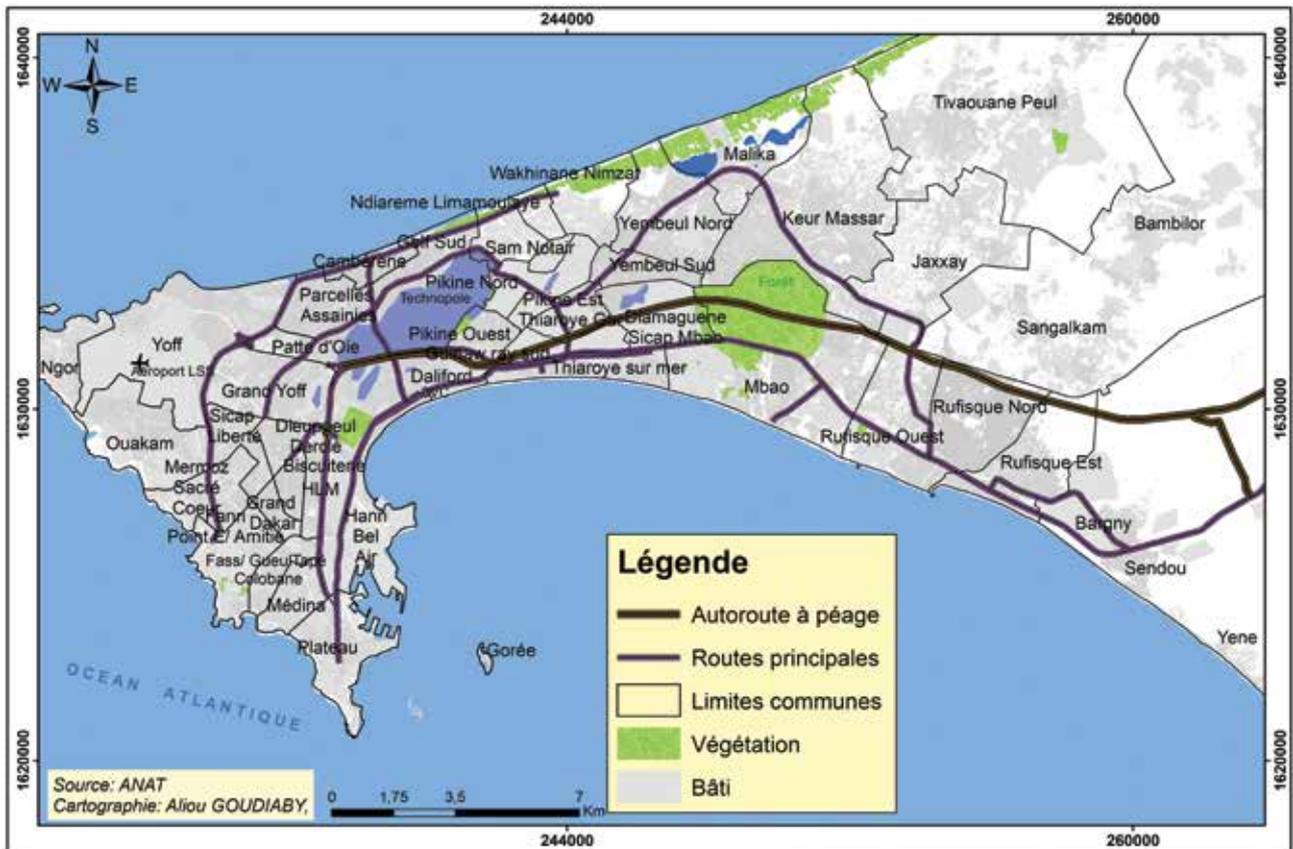
1

OVERVIEW OF THE DAKAR REGION

The Dakar region is a peninsula surrounded by the sea and has 70 kilometres of coastline. It covers an area of 550 km² and stands out from the rest of the country with a density of 6,973 inhabitants per km². Its population was 3,835,019 in 2020, or nearly a quarter of the total population (22.9%) on an area representing 0.3% of the national territory (ANSD 2015 Rapport Projection de la population du Sénégal 2013 - 2063). The Dakar region is home to 48.7% of the urban population, 90% of industry and 80% of infrastructure.

The expansion of the Dakar region occurred naturally with massive rural exodus mainly driven by industrialisation, business development, tourism and urbanisation. It took place mainly in natural ecosystems, including in the Niayes, for a vegetable-producing area playing a key role in the development of market gardening in Senegal. The Niayes are coastal wetlands which are still hosting a great diversity of flora despite overexploitation by market gardeners. It is a major catchment area and an important source of

FIGURE 1. ZONING MAP OF THE COMMUNES OF THE DAKAR REGION¹



Source: Aliou Goudiaby & ANAT, 2017; adapted by IAGU, 2021

water for agriculture and aquaculture. The main threats to this ecosystem are pressure from urban expansion, encroachment on agricultural land and soil salinisation.

Urban GDP represents 75% of national GDP. The Senegalese economy is therefore definitely driven by the cities where secondary and tertiary sector activities are concentrated. Two thirds of urban GDP is distributed in the Dakar region and one third in the country's other cities. Sixty-five per cent of businesses are concentrated in Dakar and 13 per cent in Thiès. Dakar also accounts for 62% of business openings and more than 52% of jobs generated. The unequal distribution of activities between cities is also illustrated by the data on collected patent duties, the proceeds of which are entirely allocated to the communes. 87% of the revenue from this tax is collected in the Dakar region, which hosts 50% of the urban population. The main cities of the interior, which account for 33% of the communal population, account for only 10% of tax revenue. The other communes, which account for 17% of the communal population, account for 3% of the national revenue. The Dakar region also accounts for 80% of Senegal's vehicle fleet, i.e. approximately 24,000 vehicles out of the 30,000 registered in 2007 (World Bank 2015).

In Dakar, the level of unemployment is 13.8%. In terms of education, people without a diploma account for 40.1% of the unemployed. The combined rate of time-related underemployment and unemployment is estimated at 36.0% in Dakar (39.3% in Senegal) (ANSD 2015 ENES).

Dakar is the only region where the proportion of renting households (46.0%, thus twice the national average) is higher than owners (37.1%). In Dakar, self-construction, with 71.5% of owner households, remains the main mode of housing acquisition. The sewage system is more developed in the Dakar region (ANSD 2014 RGPHAE 2013).

Urban planning in the Dakar region is characterised by imbalances in terms of the geographical location and distribution of urban infrastructure and services. Uncontrolled urban sprawl has created an unbalanced urban structure with the concentration of commercial infrastructure in the centre of Dakar, leading to heavy traffic congestion, particularly at peak times. The development of infrastructure and public facilities has not kept pace with rapid urbanisation, and the resulting gap has led to a deterioration in the living environment and conditions of the population.

The Senegalese government has tried to control the urban growth of Dakar by designing Master Urban Plans (1948, 1967, 1980 and 2000), but without much success. The Dakar Urban Master Plan for 2025, designed in 2000 and approved in 2009, was not very effective, mainly because it did not adequately take into account local realities, did not involve local governments and the population in its development and was unable to deal adequately with disaster risks such as flooding. It is in this context that in 2014 the PDU Dakar 2035 was prepared by the Ministry of Urban Renewal, Housing and Living Environment with the support of the Japan International Cooperation Agency (JICA).

1 This zoning does not take into account the new partitioning of the region of Dakar with the creation of the department of Keur Massar.

2

LAND-USE PLANNING IN DAKAR

Only 30% of Senegal's communes have a master plan for town planning (PDU) and existing plans are not implemented. Detailed urban plans (PUD) are non-existent, while subdivision plans do not integrate PDUs or PUDs. Ecological resources and climate risks are not taken into account in land-use planning.

Land-use planning in Senegal also suffers from a lack of ownership by the local governments, to whom the competence has been transferred, and from a lack of inclusion of communities and informal stakeholders. In Senegal, land-use and sectoral planning has focused on the Dakar agglomeration since the end of the Second World War.

2.1 LEGAL AND REGULATORY FRAMEWORK

Competences for designing the master plan for town planning (PDU), a land use planning and development master plan (SDAU), a detailed urban development plan (PUD), concerted development zones (ZACs), urban renewal and replotting are transferred to the communes or to the city if the latter is instituted between the communes (law n° 2013-10 of 28 December 2013 on the general code of local governments).

Land-use planning in Senegal is governed by the town planning code (Law No. 2008-43 of 20 August 2008 revised by Law No. 2009-26 of 8 July 2009 amending Article 68) and its implementing decree (Decree No. 2009-1450 of 30 December 2009 on the regulatory part of the town planning code). These are the two documents that establish the rules for town planning, development operations, urban regrouping and concerted development zones. It is on the basis of these documents that the Dakar 2035 Urban Master Plan and the Pikine and Guédiawaye Detailed Urban Plan were designed. The urban planning rules are expressed in (i) the Master Plan for Town Planning and

Development; (ii) the Master Plans for Town Planning; (iii) the Detailed Urban Plans; and (iv) the subdivision plans. The PDUs set the overall guidelines and indicate the essential elements of urban development within the framework of the national land use plan. Detailed urban development plans (PUDs) set out on a larger scale the development provisions for an area or parts of the urban master development plans. They specify and complete the provisions of the master plans and master plans for development and town planning, according to the specificities of each sector concerned, in particular the delimitation of allocation zones in consideration of the nature and value of the soil, the rules of land use and the ecological balance (Law No. 2008-43 of 20 August 2008 on the Town Planning Code, art. 8 and 9)

According to Decree no. 2009-1450 of 30 December 2009 on the regulatory part of the town planning code, the **Master Plan for Town Planning (PDU)** comprises a presentation a report, planning maps and regulations. The report presents:

- a) an analysis of the existing situation and the main prospects for the demographic and economic development of the area under consideration, taking into account its connection with neighbouring areas;
- b) an analysis of the initial state of the environment and the extent to which the plan takes into account its preservation (environmental impact assessment);
- c) an indication of the main phases of implementation of the chosen plan, and possibly the planning and cost of public facilities and infrastructure;
- d) the development plan adopted and its rationale, taking into account in particular the prospects referred to above, the balance that should be maintained between urban development and rural development, and the optimum use of existing or planned major facilities.

The planning maps show in particular: (i) the distribution and organisation of the land in zones according to their use; (ii) the layout of all the traffic lanes (national roads, main roads, secondary roads) as well as the classification of these lanes; (iii) the general organisation of transport; (iv) the location of the main activities and the most important public or general interest facilities and the classified establishments referred to in the Environmental Code; (v) the open spaces or wooded areas to be maintained or created; (vi) the preferential extension zones; (vii) the main urban or natural sites to be protected; (viii) possibly the perimeters of the zones in which the detailed urban plans will be designed, the special zones for land use planning and the special protection zones covered by the Environmental Code; (ix) possibly the sectors to be safeguarded for historical, ecological or cultural reasons, or for reasons that justify conservation; (x) the master plans for the various networks.

The regulations, referring to the provisions contained in the plan, set out the rules and easements relating to the use of the land (Decree no. 2009-1450 of 30 December 2009 on the regulatory part of the town planning code, art. R 38).

The Urban Master Plan is prepared for a period of **twenty years** (art. R 39)

The draft master plan is submitted to the concerned municipal or rural council(s) and to the regional council. If the local governments concerned have not made their opinion known within one month of the day on which the request is notified to them, their silence is deemed to be approval of the plan (art. R 41 and 42).

The draft urban development master plan is subject to a **public enquiry** which takes place in the manner provided for in matters of expropriation in the public interest. The draft plan is made available to the public in relevant town halls and rural councils' headquarters and in the services of the state representative. The written decision to open the enquiry mentions the appointment of an investigating commissioner and indicates the places where the plan is made available to the public for a period of two months. It is published in the Official Gazette or in a newspaper available for sale in the region and is communicated through the media (art. R 43 and 44). After public enquiry and consultation of municipal councils, the draft master plan is sent to the Minister in charge of town planning.

The master plan is approved by a decree which includes the provisions of the town planning regulations. Within fifteen days of the publication of the decree approving it, the master plan is made available to the public in the offices

of the state representative and at the headquarters of the concerned local governments (Art. R 46).

The Detailed Urban Plan (PUD) is designed in particular within the framework of the guidelines laid down by the urban development plans and master plans. It also includes a presentation report, planning maps and regulations.

The report presents an analysis of the existing situation and the main prospects for the development of the concerned area. It justifies the compatibility of the provisions laid down in the detailed urban plan with those of the urban master plan.

The planning maps show in particular:

1. The delimitation of zones based on land use allocation;
2. Sites reserved for public services, public facilities and open spaces as well as special protection areas referred to in the Environmental Code;
3. The layout of traffic lanes;
4. The districts, streets, monuments and sites to be protected or restored when they are of a historical or aesthetic nature, the land of any other nature which, because of their characteristics, must be protected;
5. Miscellaneous networks.

The regulations set out the rules and easements relating to the use of the land (art. R 53).

After a public enquiry, the Detailed Urban Plan (PUD) is submitted to the concerned municipal and rural council(s), which decide by deliberation within one month. Failing this, the project is forwarded to the Minister in charge of town planning by the representative of the State in the Region for arbitration (art. 56). The detailed urban development plan is approved by a decree that includes the provisions of the urban development regulations. Within fifteen days following the publication of the decree approving it in the Official Gazette, the detailed urban development plan is made available to the public in state services and at the headquarters of the concerned local governments (Art. R 57).

The revision of urban plans follows specific rules. The revision is ordered by decree and may concern all or part of the provisions of the urban plan. During the revision period, the urban development plan remains in force; however, safeguard measures may be enacted with a view to designing the new plan (art. R 75).

2.2 URBAN PLANS OF DAKAR

Town Planning in Dakar dates back to a few years before Senegal gained independence, under French colonisation, when local governments were established in Dakar and Rufisque. The first plan for Dakar was designed in 1862 by Pinet-Laprade, the head of the engineering battalion. This plan showed its limits due to its military character and between 1945-1946 a new plan was designed. The particularity of this plan was that it addressed for the first time the issue of the holistic development of the Cap-Vert and constituted the basis of the vast equipment programme whose realisation was entrusted to the Grand-Dakar Temporary Development Service - STAGD. In 1957, with the project to create the Dagoudane - Pikine clearance district, the plan was modified to include this district. In addition, the post-World War II period, particularly with its ups and downs, led to a change in economic activities, resulting in significant migration to Dakar. These movements of people contributed to the reorganisation of the area so that there was a perimeter dedicated to rural areas and to facilitating the integration of the populations.

The 1967 Urban Master Plan, commonly known as Plan ECOCHARD, covered the Cap-Vert peninsula as far as the Mbao forest. This plan will support the spatial development of the Commune of Dakar and the western zone of Pikine - Guédiawaye and will later become the reference for the realisation of the Detailed Urban Plans of several agglomerations in Senegal.

The 1967 plan gave way to the 1982 plan, which projected harmonious development centred on the Dakar, Pikine and Rufisque cities, combining the introduction of an efficient public transport system with the availability of land for the Dakar-Thiès motorway and the Voie de Dégagement Nord (VDN). Due to delays in the development of this plan, the spatial configuration has evolved, making the PDU obsolete in some communes. This obsolescence justified the PDU Dakar horizon 2025, designed in 2000 but approved in 2009. Its ambition was to rebalance the regional space with other urban centres and to propose the creation of seven new growth centres. In addition, the plan included other projects such as the Blaise Diagne Airport, the extension of the Dakar-Diamniadio motorway, the extension of the VDN, the development of the Diamniadio urban centre, the development of the special economic zone (SEZ) and the construction of the new port of Sendou.

Unfortunately, the PDU Dakar 2025 was not effective because the local conditions for its implementation were not shared with all actors from the outset. Also, the lack of participation of local governments and populations in the planning process was noted, which was an obstacle to

the good knowledge of the plan and its ownership by the actors in charge of its implementation. To correct these limitations, the State of Senegal contacted the Government of Japan to revise the PDU Horizon 2025. The Japan International Cooperation Agency (JICA) and the Ministry of Urban Renewal, Housing and Living Environment (MRU-HCV) were thus entrusted with the task of conducting the project to draw up the Master Plan for Town Planning in Dakar and its Surroundings Horizon 2035 (MRUHCV and JICA, 2016, PDU Dakar 2035).

2.2.1 THE DAKAR 2035 URBAN MASTER PLAN

The study area of the PDU Dakar 2035 is the Dakar region and the surrounding of the Blaise Diagne International Airport in the Thiès Region, with a surface area of approximately 820 km². The preparation of the PDU Dakar 2035 was led by the Town Planning and Architecture Directorate (DUA), given the limited technical resources of the local governments, which are responsible for territorial planning (MRUHCV and JICA, 2016, PDU Dakar 2035).

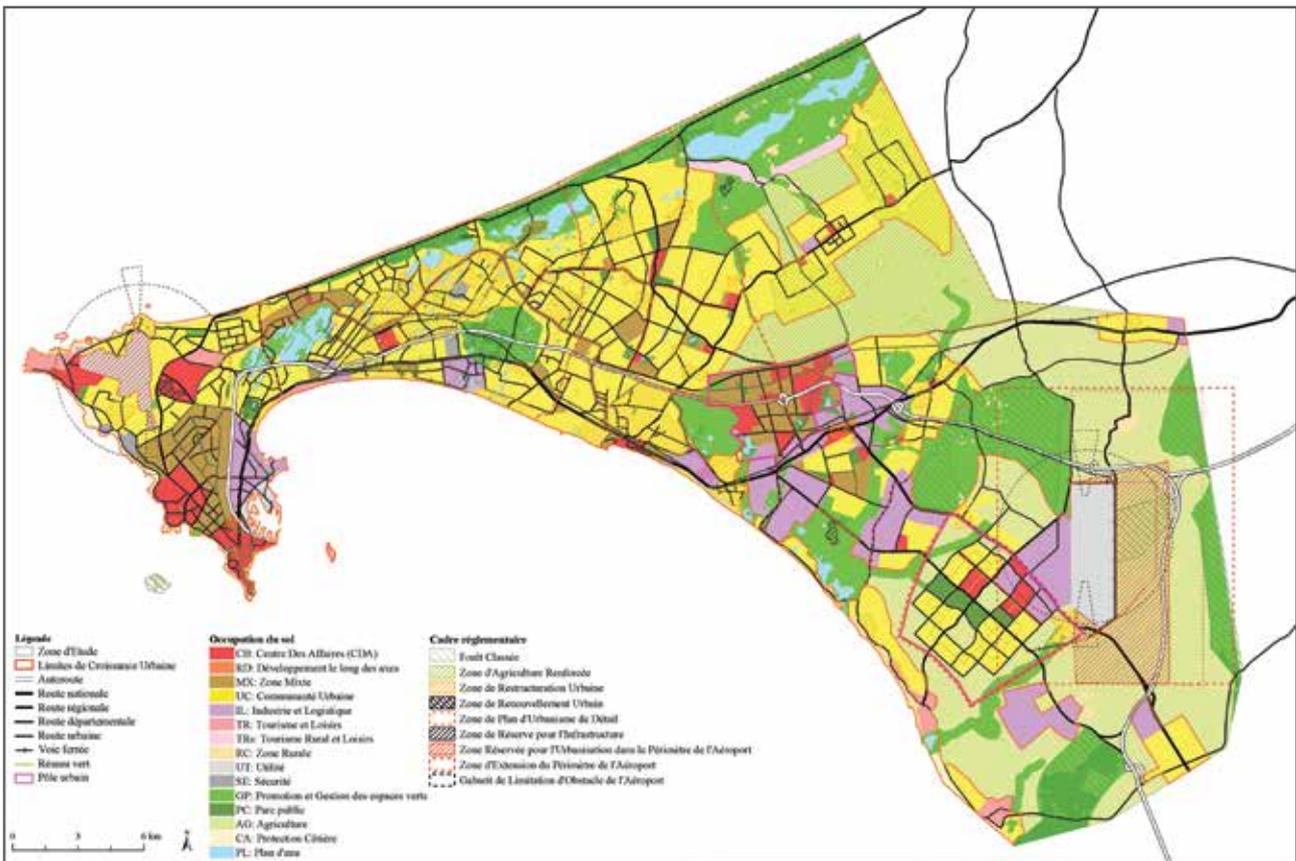
The PDU, through a participatory process, aims to make Dakar a "City of Hospitality", characterised by a comfortable living environment, easy communication and innovative, inclusive, sustainable, competitive and supportive creation.

The content of the PDU highlighted, among other things, the major development issues, the Master Plan 2035 itself including the spatial development framework, the sectoral development plans for 2035, the strategic environmental assessment, the Daga-Kholpa PUD, the pre-feasibility of priority projects and the management of town planning.

The spatial development framework has defined the Urban Growth Limit (UGL) which delimits the urban promotion zone and areas unsuitable for urbanisation (risk areas, agricultural land, forests, etc.).

The Land Use Plan (POS) of the Master Plan 2035 foresees 25.2% of land use for agriculture and 18.5% for the promotion and management of green spaces. In urban areas, areas to be reorganised and renewed are also indicated. Road infrastructure, forests, parks and green spaces and water bodies are integrated in the land use plan. The plan includes a regulatory framework that delineates classified forests, agricultural areas, urban reorganising areas, urban renewal areas, infrastructure rehabilitation areas, among others. However, planning maps at the appropriate scale (1:10,000) are not available in town halls or posted in public places to allow for participatory operational monitoring of land use restrictions and reserves.

FIGURE 2. LAND USE PLAN UNDER THE PDU OF DAKAR AND ITS SURROUNDINGS UP TO 2035



Source: MRUHCV and JICA, 2016, PDU Dakar 2035

Unlike the PDU Dakar 2025, the PDU Dakar 2035 takes into account disaster and flood risk reduction and proposes a flood management framework.

The total amount of investments planned to achieve the Dakar Master Plan 2035 is estimated at CFAF 7,231 billion, distributed as follows: CFAF 4,670 billion to be financed by the private sector and CFAF 2,532 billion by the Government. However, despite the importance of this planned investment, the PDU Dakar 2035 does not have an explicit monitoring and evaluation mechanism.

2.2.2 PIKINE GUÉDIAWAYE DETAILED URBAN PLAN (PUD)

The main objective of the PUD Pikine-Guédiawaye is to provide the two cities with a planning document to guide and synergise the programmes of the State, local governments and the private sector. It has been designed in accordance with the general guidelines set out in the Master Plan for Town Planning of Dakar and its surroundings up to 2035. It integrates the conclusions of the Drainage Master Plan by preserving spaces dedicated to the storage of rainwater or to drainage works.

Sustainability is the basis of the urban Detailed Urban Plan as it guided the orientations of the draft PDU Dakar and its surroundings 2035. The PUD projects a vision for Pikine and Guédiawaye which become model cities where sustainable development is at the heart of the preoccupations: “Guédiawaye, a green and healthy city” and “Pikine, a sustainable city of culture, leisure and employment”.

The departments of Pikine and Guédiawaye have the particularity of having a large number of housing plots and no polarising infrastructure. Guédiawaye has practically no extension area and will, in the future, be obliged to turn to Pikine to satisfy some of its facility needs. On the other hand, the department of Pikine is better endowed with land reserves, noted in the communes of Mbao, Malika and Keur Massar, which can meet the needs for housing, facilities and activities.

From this vision, the following objectives are derived:

1. create viable, green and sustainable environments;
2. build resilience to climate change;
3. regenerate water systems and wetlands;
4. protect and develop Dakar’s natural resources, such as the Niayes, the coastline and the forests;

5. understand the importance of the environment as an economic driver;
6. develop urban agriculture;
7. improve the spatial balance of the periphery;
8. reduce dependence on the capital city;
9. develop local economy that complements the development of the capital city;
10. improve trip fluidity;
11. densify neighbourhoods while meeting the basic needs of the population;
12. and encourage active mobility by developing safe infrastructure for pedestrians and cyclists.

A number of developments are proposed in 11 areas to meet the vision, objectives and challenges by following the established planning principles. These include the following developments in the housing sector:

1. Suitable housing in flood-prone areas;
2. Reorganisation of informal settlements;
3. Reconversion of areas freed from flooding;
4. Sustainable development of Grande Niayes.

In fact, the PUD provides for developments to adapt the habitat models of informal or formal settlements to the

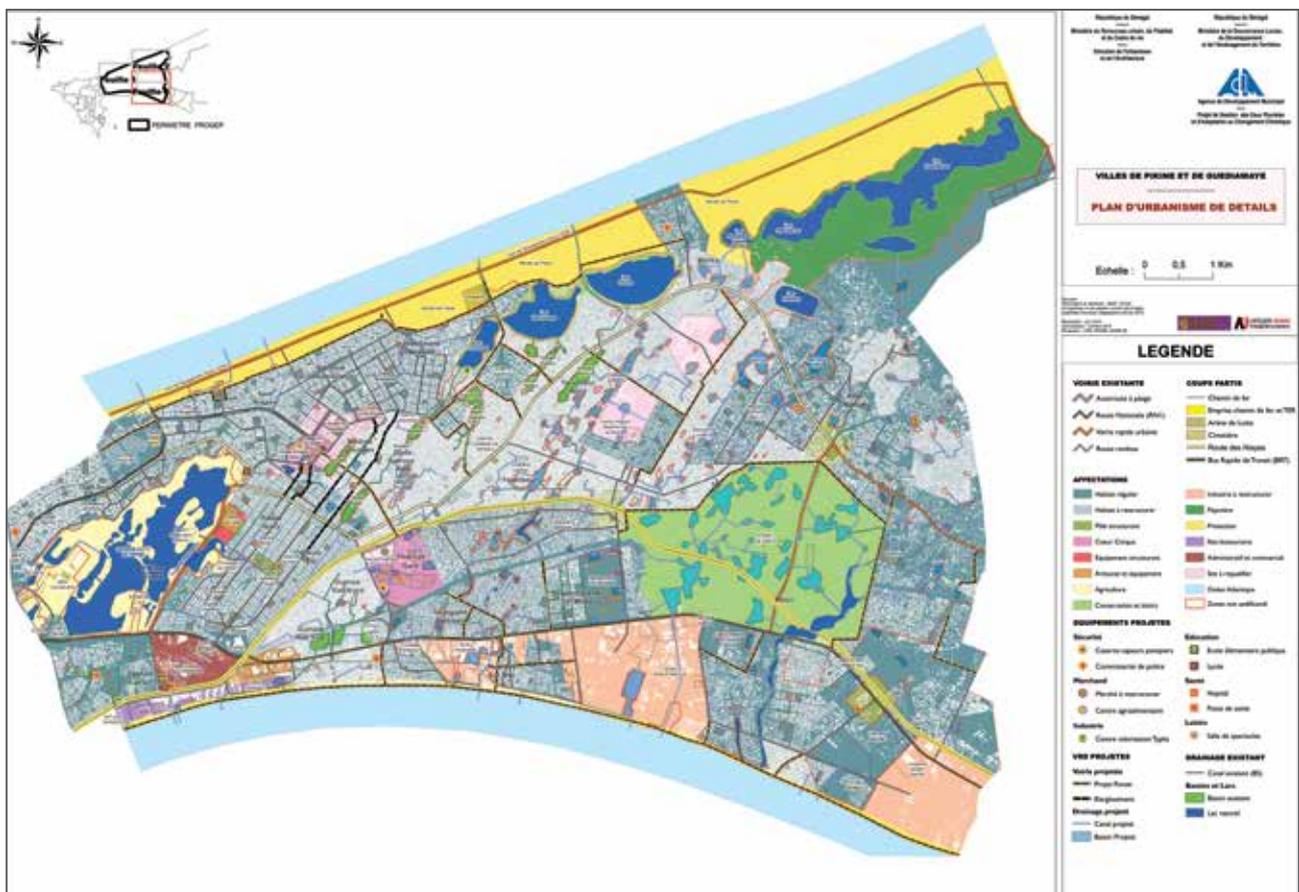
issue of rainwater management. In addition, the areas freed from flooding cover a surface area of approximately 175 ha, apart from lakes and temporary water bodies, and are subject to reclassification.

The high number of informal settlements in the suburbs, particularly in Pikine where they represent 43% of the inhabited area, justifies the reorganisation programme targeting an area of 22 km² covering 12 communes. Taking into account the frequency of floods in recent years in Senegal, the PUD has initiated a project for a green and blue belt network in the Niayes and flood-prone areas, which links large green areas such as the classified forest of Mbao and the northern and southern coastlines.

The PUD provides for 36 development and equipment projects for a total budget of **CFAF 338,550 million** but does not mention the existence of a monitoring and evaluation mechanism.

Under the PUD 2035, the land use map shows the different use zones (housing, urban centre, agriculture, protected areas, etc.), the spaces dedicated to the planned facilities and infrastructure as well as the routes of the

FIGURE 3. DETAILED URBAN PLAN OF PIKINE AND GUEDEIWAYE



Source: MRUHCV, MGLDAT & ADM, 2017, Detailed Urban Plan of Pikine and Guédiawaye

roads. It also mapped the areas to be freed and their protection measures were presented in the urban planning regulations of the PUD. All the sites prohibited from occupation are assigned to agricultural use, socio-cultural activities, tourism and leisure activities. The typology of land use on these sites is also mentioned in the PUD's urban planning regulations. The PUD does not provide for appropriate mechanisms for disseminating these graphic documents to the population, which may hinder its ownership.

2.3 ANALYSIS OF LAND USE PLANNING IN DAKAR CENTRE

The analysis of the issues in the current urban planning management done as part of a joint fact-finding mission on the PDU Dakar horizon 2035 carried out by JICA and the Town Planning and Architecture Directorate (DUA) in April 2015 in the framework of a workshop identified six factors that are at the root of the inefficiency of the PDU Dakar horizon 2035, and which are:

1. The urban plan is not in line with the land use plan;
2. Non-implementation of projects;
3. The master plan is not well respected by the population;
4. The master plan is not supported by tools such as the Detailed Urban Plan (PUD);
5. The master plan is often not well respected by local authorities;
6. Quick changes noted in the political and social environment;

To prevent these inefficiencies that jeopardize the PDU Dakar horizon 2025, the following measures will be taken as part of the PDU Dakar horizon 2035: (i) strengthen ownership of the master plan by the populations (ii) improve the supporting tools of the master plan and strengthen its recognition by the state bodies and local governments (MRUHCV and JICA 2016 PDU Dakar horizon 2035).

The cities of the Dakar Region have confirmed that they participated in the preparation of the PDU 2035 (interviews with the town planning departments of the cities of Dakar, Rufisque, Guédiawaye and Pikine). However, the quality of this participation is problematic. This is what emerges from the testimony given by an urban planner from the Municipal Development Agency (ADM) during the multi-stakeholder mini-workshop on land-use planning in Dakar.

The President of the Departmental Youth Council of Pikine adds: "Town planning is a competence transferred to local governments. I often take part in meetings at city level,

but town planning is barely discussed. Mayors are not really interested in planning, even the councillors in charge of this sector rarely have competences in this field". The shortcomings in the participation of local governments are partly due to the lack of technical resources dedicated to town planning in these institutions. In addition, the attitude of the promoters of urban plans towards the needs expressed by the local governments does not facilitate the participation of the latter. The cities of Dakar and Guédiawaye deplored the fact that their proposals were not taken into account in the end by the PDU Dakar 2035 (city of Dakar) and the PUD Pikine Guédiawaye (city of Guédiawaye). The lack of commitment of local governments could also be the result of the low consideration they receive from the ministries in charge of developing the plans.

Rather than simply seeking the city authorities' opinion on the documents submitted to them in the framework of the preparation of urban plans, it would be more judicious to involve them as co-heads in the plan development process. Land-use planning is one of their major competences and the technical elaboration of urban plans is often entrusted to consultancy firms. Like the DUA, the city technical services could co-steer the process and ensure the follow-up and quality control of the documents produced.

The poor human, technical and logistical resources of national administrations (in particular town planning departments) as well as local governments is pointed out as a cause of the inefficiency of land-use planning (World Bank 2015). Thus, the PDU Dakar 2035 recommends developing the technical and managerial skills of the DUA staff based on the proposed short-term priority capacity-building plan. In the same way, capacity building of the

Mr Diallo of ADM stressed that local governments are always consulted in the development of all plans that apply to their territory. Their absence and lack of knowledge of certain planning documents rather reflect their low level of mobilisation for the meetings that are organised. In response to this situation, strategies have been developed, including the creation of a WhatsApp forum bringing together all the authorities concerned by the plan. This initiative makes it possible to follow up the reading of the documents submitted to them. According to him, the State is not necessarily responsible for the lack of involvement and participation of decentralised local governments. The latter are also accountable. (Multi-stakeholder mini-workshop of 21 January 2021).

services in charge of town planning in the Dakar Region is a priority and should be mainstreamed as a component of the town planning projects.

According to the staff of the ministry in charge of town planning, the real and effective engagement of local governments is critical as it can foster people's participation (multi-stakeholder mini-workshop of 21 January 2021). Local governments are in a better position to encourage the participation of the population.

It is true that the development of the PDU Dakar 2035 and the PUD of Pikine and Guédiawaye was based on a participatory process. The DGUA indicated that the participation mechanism adopted in the framework of the PDU includes the organisation of four meetings in each of the four departments of the region. The decentralised state services, concerned communes, CBOs, ASCs, CSOs and technical and financial partners took part in these meetings. The meetings were also attended by steering and technical committees which include all the mayors, representatives of concerned ministers and involved technical services. These committees are set up by order of the minister in charge of town planning (interview with the DGUA).

However, several stakeholder groups stated that they had no knowledge of these planning documents. This is the case in particular of craftsmen, traders and even youth organisations. According to the president of the craftsmen association of the city of Guédiawaye, *"If you asked the artisans about the urban plan, they would ask you what it means. The urban plan is a reserved domain, a matter for technicians (president of the Departmental Youth Council of Pikine and UNACOIS JAPPO). Even those who hear about it, indicate that its elaboration is not inclusive, and their needs are not taken into account. The president of the Departmental Youth Council of Pikine maintains that "the urban plan is prepared for the future, which concerns young people, whereas the latter are not involved in its elaboration"*. The special needs of people with disabilities are not taken into account in these documents (president of the Senegalese Federation of Associations of Disabled People – FASPHA). The needs of artisans, particularly in terms of allocation of dedicated spaces, are also ignored (president of the craftsmen association of the city of Guédiawaye).

Community participation can be strengthened through public enquiry by ensuring that the appropriately scaled graphic materials (showing land use, road layouts and rights-of-way, locations of facilities and infrastructure, open or wooded areas, sites to be protected and networks) of the draft master plan are displayed in publicly accessible and frequented areas of all the town halls

concerned. These documents should be publicised in the media in local languages. Also, the town planning code should be revised to provide the populations with possibilities of appeal if their proposals made during the public enquiry are ignored by the draft plan selected. The PUD Pikine Guédiawaye has planned and mapped specific developments for the Grand Niayes, the surroundings of the retention basins, the classified forest of Mbao, and the northern and southern coastlines. It recommends types of construction adapted to flood-prone areas, non *aedificandi* zones, rights-of-way for planned infrastructures and facilities, etc. It is therefore preferable that the maps of these various developments are displayed in town halls, sub-prefectures, prefectures and the premises of the relevant state services. The population and elected officials will thus be able to take ownership of the planned developments and ensure that they are respected. The PUD should have provided a mechanism for promoting inclusion and ownership by the communes and riparian communities based on these graphic materials.

For these specific developments, larger-scale planning maps (e.g. 1/5,000 or even 1/2,000) should be used to support popularisation and ownership. It is not easy for community actors to understand long monographic-style documents with small-scale plans. The production of large-scale planning maps representing the non *aedificandi* zones or protected areas, rights-of-way and location of planned infrastructure and structural facilities and specific developments, and their display in appropriate places, is a significant step in building ownership. Making these documents available to actors and activists involved in the fight against the urbanisation of vulnerable areas (wetlands, forests) by property developers in particular is likely to provide them with "ammunition".

In addition to having graphic documents at appropriate scales, the involvement of the population in their preparation should be encouraged. Participatory mapping promotes a better understanding of the organisation and allocation of land to different uses and restrictions.

The master plan development phase is only one step, monitoring and evaluation is another. Even if the town planning code and its application decree only provide for the revision of urban plans and not for the establishment of a monitoring and evaluation mechanism, the lack of monitoring and evaluation makes it difficult to control urban development, which should allow for the adjustment of these town planning documents. The Land Use Planning and Development Master Plan (SDADT) for Dakar Thiès Mbour provides for a coordination and monitoring unit in the plan's implementation bodies and instruments, and an annual budget to finance such activities.

PUBLIC PARTICIPATION AND CONTROL OF THE OCCUPANCY OF NON AEDIFICANDI AREAS

The *non-edificandi* zones are often unknown to the population and constitute housing areas for low-income populations. Therefore, land-use planning should involve the people living in the vicinity of these vulnerable areas. The reorganisation of an area must take into account the activities and land use patterns that were already deployed there, in order to avoid conflicts with the population, which regularly result in non-compliance with the land-use plan (POS). To this end, after the POS has been designed and the non-edificandi zones identified, the populations must know the boundaries of such zones. The DGUA has indicated that the documents relating to these zones are always given to the concerned commune, which is responsible for informing its community members. The following recommendations were formulated on this issue: (i) Inform the populations on the preservation of the *non aedificandi* zones; (ii) Encourage the participation of the populations in land use allocation; (iii) Support local governments in this process; (iv) Promote the participation of the technicians in charge of the plan in public meetings; (v) Identify and promote the vision of the populations (multi-stakeholder mini-workshop of 21 January 2021).

It will also be necessary to avoid such mechanisms being exclusively managed by state services and to ensure that they are inclusive.

The lack of monitoring and evaluation will also undermine the effectiveness of urban plans.

The investments planned under the PDU Dakar 2035 and the PUD of Pikine and Guédiawaye require an effective monitoring and evaluation system to ensure the mobilisation of resources.

To correct the lack of monitoring and evaluation, the DGUA, with the technical support of JICA, plans to organise an annual evaluation session of the PDU projects involving all the stakeholders (multi-actor mini-workshop) from 2020 onwards. This is an important step. But an annual evaluation meeting cannot replace a monitoring and evaluation mechanism and resources with appropriate tools, knowledge of the baseline, targets, measurement systems and information sources.

In addition, the lack of effectiveness of urban plans is due to the long duration of their development and official approval phases, which creates a gap between the approved plans and the reality on the ground, rendering certain developments, prescriptions and restrictions obsolete. For example, the development of the PDU Dakar 2025 started in 2000 but its approval by decree only came in 2009. The PUD of Pikine Guédiawaye was completed in 2017 but is not yet approved. The lack of official approval

is a barrier to dissemination and promotion of ownership of the plan. With persistent delay in approval, the plan may become outdated and its prescriptions useless. Thus, it will simply become another monographic study, a source of data for future studies. This situation is not conducive to land-use control, as the plan only records the occupation of the site after its approval (Diongue & Diouf, 2018).

The PUD of Pikine Guédiawaye, prepared shortly after the Drainage Master Plan, is also dedicated to flood prevention and management. However, the department of Rufisque, which has the largest land reserves and the strongest urban growth in the region, has not yet been the subject of a PUD, particularly in the communes most affected by the intensity of urban expansion and land conflicts: Bambilor, Tivaouane Peulh-Niaga and Yenne.

The case of Bambilor deserves to be examined. Informal settlements are proliferating in this commune with the consent of communal authorities. The DSCOS recently warned of this. This informal urbanisation of the commune is not in line with the prescriptions of the PDU Dakar 2035 and the SDADT Dakar-Thiès-Mbour. Indeed, Bambilor is considered as an agro-industrial centre under the PDU Dakar 2035 (MRUHCV and JICA, 2016) and is included in the Niayes sensitive agricultural zone according to the Land Use Planning and Development Master Plan of the Dakar-Thiès-Mbour zone (ANAT, 2015). Thus, the inaction of the authorities in the face of this informal urbanisation is incomprehensible.

3

PERI-URBAN EXTENSIONS OF DAKAR

Due to the exhaustion of land reserves in the departments of Dakar and Guédiawaye, urban expansion is taking place in Pikine (Keur Massar in particular) but especially in Rufisque where the communes of Bambilor, Diamniadio, Tivaouane Peulh-Niaga, among others, are facing a strong urban push marked by multiple land conflicts. In the study of the recent urbanisation of the Dakar conurbation, focus will be put on the extensions in the departments of Pikine and Rufisque.

To this end, three (03) peripheral extension districts were studied in the framework of participatory territorial diagnoses. An informal subdivision (in Bambilor) and another formal one (in Déni Malick Gueye) were chosen in the department of Rufisque. Another informal subdivision in Boune (Keur Massar) in the department of Pikine was selected. The urban centre of Diamniadio is studied as a formal extension supported by the State.

Another district of the municipality of Hann Bel Air concerned by the territorial diagnosis will be treated in the framework of urban reorganisation, which is a form of internal extension.

These districts were selected based on the following criteria: (i) relative importance of the department of Rufisque compared to Pikine in terms of land reserves and urban growth, (ii) availability of resource persons in the district, (iii) suburban extension districts in Pikine relevant but discarded due to recent studies there (Yeumbeul North, Malika and Keur Massar) and (iv) number of districts chosen due to the limited resources of the study.

3.1 LEGAL FRAMEWORK FOR HOUSING DEVELOPMENT (TOWN PLANNING CODE AND DECREE)

According to Law No. 2008-43 of 20 August 2008 on the town planning code, a subdivision is any operation that results in the development, equipment and division into lots of one or more land properties for sale or transfer free of charge or for rent (art. 41). Subdivisions may be undertaken: (i) either for the building of housing, with or without commercial and administrative infrastructure; (ii) or for the building of industrial, craft, commercial or tourist facilities; (iii) or for the development of gardens, market gardening and nursery areas; (iv) or for the building of facilities (art.42). In all urban areas, **the subdivisions are subject to administrative authorisation.** The development of housing estates, gardens or industrial, commercial, handicraft, and tourist facilities or infrastructure must be carried out in accordance with the town planning regulations. **The authorisation to subdivide is issued by the minister in charge of town planning, upon consultation with the concerned local government,** to the owner of the land or to their representative (Law No. 2008-43 of 20 August 2008 on the Urban Planning Code; Art. 43).

The authorisation to subdivide is not granted if the land is unfit for habitation, in particular if the land is exposed to a natural risk such as: flooding, erosion, subsidence, landslide, and if the subdivision does not comply with the provisions of the urban plan in force in the area where the land to be subdivided is located or if the land is classified as a protected area or special protection zone due to its ecological interest (**Decree n° 2009-1450 of 30 December 2009 on the regulatory part of the urban planning code. art. R 157**).

In the case of permanent subdivisions, the authorisation requires the developer to carry out all the servicing work, in particular with regard to (i) earthworks and levelling of the land; (ii) setting up of fixed markers or milestones for the delimitation of the lots; (iii) roads; (iv) water supply; (v) waste water drainage and treatment, connection to the local networks if they exist; (vi) failing that, the selected sanitation system; (vii) development of parking areas and green spaces (R 167).

Subdivisions of evolving nature may only be permitted in areas where economic housing is planned. These subdivisions require a basic servicing of the land plots in accordance with basic standards (R 168).

3.2 CASE STUDIES IN THE DEPARTMENTS OF PIKINE AND RUFISQUE

The participatory territorial diagnosis is an inclusive approach that guarantees a qualitative analysis based on the perceptions of the inhabitants of the neighbourhoods but also on their empirical knowledge. It is structured around three main stages:

1. a preparatory phase which consists in establishing the framework of the study by designing a collective interview guide (focus group) and an observation guide for urban wandering and carrying out a prospection mission in the selected communes;
2. a phase consisting in data collection in the field through urban wandering with a group of inhabitants and a focus group with neighbourhood stakeholders chosen according to pre-established criteria;
3. a final phase dealing with data analysis and report drafting.

The four (4) selected neighbourhoods are:

1. a formal settlement in Déni Malick Guèye in the commune of Diamniadio located on the edge of the urban centre of Diamniadio;
2. an informal settlement in Bambilor Extension 3 in the commune of Bambilor;
3. an informal extension of Boune Village in the commune of Keur Massar;
4. Tableau Ferraille, a reorganised neighbourhood in the commune of Yarakh-Hann Bel-Air.

The urban centre of Diamniadio is also studied in this chapter, but on the basis of documentary information, individual interviews with resource persons and multi-actor mini-workshops. As for the participatory territorial diagnosis of Tableau Ferraille, it is dealt with in the section devoted to urban reorganisation.

3.2.1 INFORMAL SETTLEMENT IN BAMBILOR 3

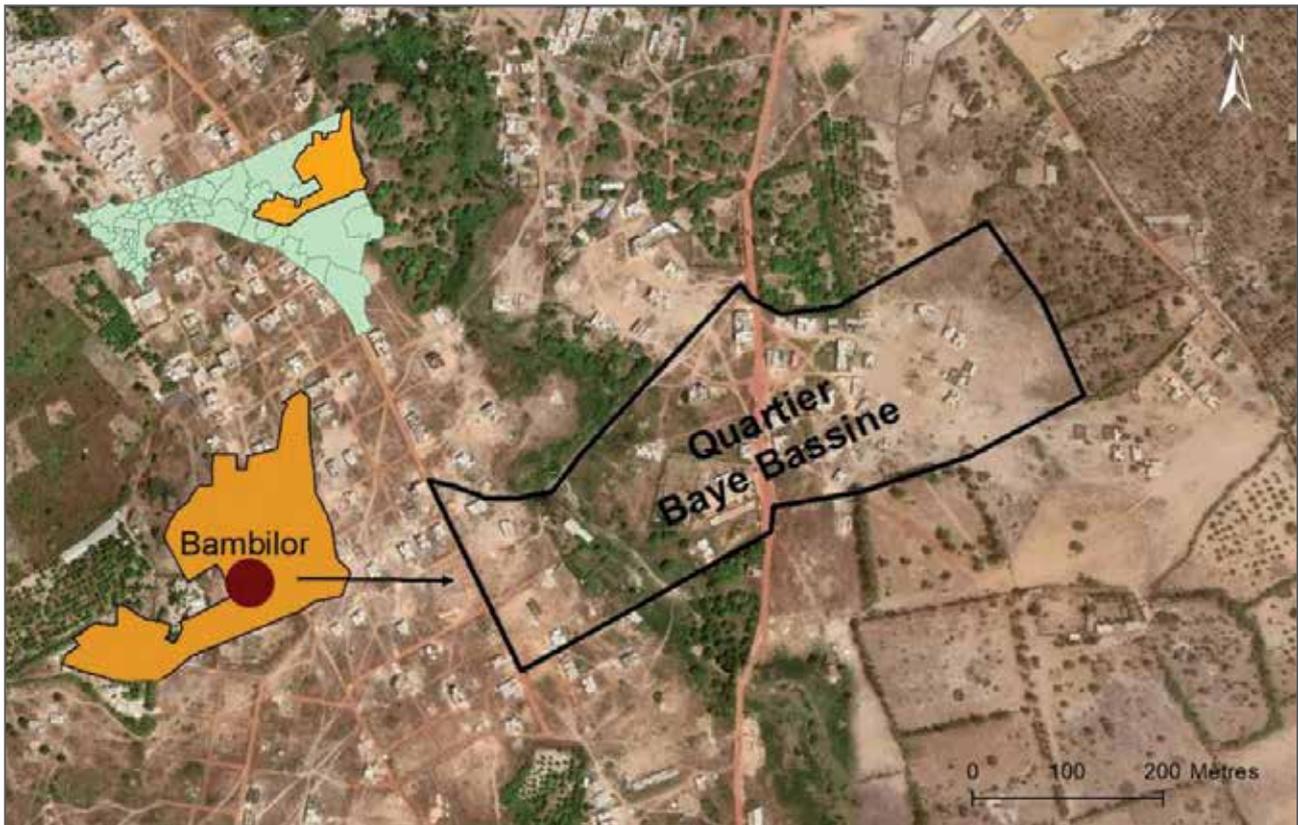
The Bambilor Extension 3 neighbourhood was born from the desire of several farmers to transform their fields into housing plots. Created in 2012, this neighbourhood is composed of three subdivisions that extend over several hectares. These lands, initially used for farming, were transformed into living space by their owners who filed an application with the municipality of Bambilor to change the land use. This land conversion required the payment of fees estimated at CFAF 200,000 per hectare (Bambilor focus group meeting). The change of land use thus made it possible for some farmers, who have become property developers, to submit individual subdivision projects.

The urban wandering activity carried out with the inhabitants made it possible to observe that Bambilor Extension 3 is a neighbourhood that is a priori “developed”. The observation tools used in this study make it possible to appreciate the level of development, equipment and division into blocks of the neighbourhood. Obviously, rough earthworks and levelling were carried out before the land was subdivided. With streets varying from 7 to 8 metres wide, the areas of the houses rarely exceed 150 m². Although it is a partially filled area with many houses under construction, the blocks have an average of 6 to 8 plots. In terms of public facilities, there is a primary school that has been in operation since 2012 (which preceded the neighbourhood), a green space of 150 m² and a place of worship of 300 m². Generally speaking, the neighbourhood’s layout is fairly regular.

The focus group organised in Bambilor Extension 3 enabled to identify two categories of land development stakeholders in the site under study. Indeed, we identified two subdivisions whose development was initiated and supervised by the municipality of Bambilor and another subdivision developed by a property developer who is also the heir of the owner of the Baye Bassine field. In the first case, the owners of the fields are approached by the municipality, which provides them with a subdivision project and put them in relation with a developer to accompany them. With the approval of the Municipal Council, the subdivision is carried out without obtaining the administrative authorisation to subdivide. At the end of this operation, 60% of the land plots are owned by the municipality, the property developer, the surveyor and the company responsible for the overall earthworks. The remaining 40% of the plots are allocated to the owner.

In the second case, the initiative is taken by the property developer, although prior approval of the City Council was sought. According to this developer, who also took part in the focus group, “the subdivision plan was approved by

FIGURE 4. MAP REFERENCE OF THE BAYE BASSINE SUBDIVISION IN BAMBILOR EXTENSION 3 (COMMUNE OF BAMBILOR)



Source : Google satellite, adapted by IAGU, 2021.

the land registry, which is why each owner has his or her own plot number, and to date, no land dispute has been reported". This statement seems dubious, since developers always assign plot numbers, even in the case of informal subdivisions. It should be noted that, like the two previous subdivisions initiated by the commune, the developer of the Baye Bassine field subdivision must also give a percentage of plots to the commune. According to the developer, 30% of the Baye Bassine field is reserved for streets, a public garden and a mosque. While most of the plots from these developments have been sold, some are shared among close friends and family members.

In this neighbourhood of Bamblor, most of the land is national domain land. This land, initially allocated for agriculture, is now being used for housing purposes. In fact, none of the field owners have any real rights to the land that was allocated for agricultural use. Today, the plot owners only hold written instruments from the municipal council that has made the allocation decisions, which are often in the name of the reselling property developer. But according to the focus group participants, they still can obtain building permits with these municipal certificates.

The purchasers face many difficulties in transferring ownership into their name. They said: *"We file applications with the town hall without success. We are sent back and forth without any explanation. Sometimes we even give them money in the hope that they will expedite our files. But nothing is done"*.

Looking at a decision on the allocation of a plot for residential use in a subdivision located in Diacksao signed by the Mayor of the Bamblor commune on 4 January 2019, we were surprised to note that the laws referred therein include Law No. 2013-10 on the General Code of Local Governments and Decree No. 72-1288 of 27 October 1972 relating to the conditions of land use and land use change in the national domain in rural communities. No reference is made to Law No. 2008-43 of 20 August 2008 on the town planning code or to Decree No. 2009-1450 of 30 December 2009 on the regulatory part of the Town Planning Code, which are the texts that govern and organise subdivisions. Besides, no subdivision permit is mentioned in the document. Also, even if the title of the decision talks about allocation, inside the document, it is written *"it is transferred..."*.

It is true that according to law n° 2013 - 10 on the general code of local governments, the communes have the authority for “*land use and land use change in the national domain*” (art. 81). This is a competence that was exercised by rural communities before 2013. However, the national domain lands are allocated for cultivation and clearing, and the allocation only confers a user right. Allocated land cannot be the subject of any transaction and in particular of any sale or lease contract (Decree 72-1288 of 27 October 1972 on the conditions for national domain land use and land use change in rural communities and Decree 80-1051 of 14 October 1980 repealing and replacing Articles 2, 8, 14, 19 and 20 of Decree 72-1288 of 27 October 1972). Furthermore, with decree 80-1051 of 14 October 1980 amending decree 72-1288 of 27 October 1972, land allocation must be the subject of decision made by the municipal council and approved by the sub-prefect. Therefore, the concerned subdivisions are informal. According to some stakeholders in Bambilor, this is the case for up to 90% of the subdivisions of the commune.

Finally, it is understandable that land purchasers in these types of subdivisions may find it difficult to transfer the ownership to their name. Land use change is necessary before re-allocation.

Therefore, landowners have no security on their ‘plots’ because these subdivisions, even if they are developed by the commune, remain illegal. For the promoter of the Baye Bassine subdivision who participated in the focus group, “*it is out of the question to share his subdivision plan with the municipality because if this document falls into their hands, it will be for them an opportunity for misappropriation*”, he said. Participants in the focus group accused local elected officials of getting rich on land (“they are driving cars worth 80 or 100 million”). They also noted that there is land speculation in the area, as 150 m² plots that used to sell for between CFAF 800,000 and 1 million now cost CFAF 3 million.

According to the people we met, **some of the newly developed areas are crossed by numerous gullies that play an important role in the drainage of rainwater.** These new subdivisions contribute to obstructing the natural drainage channels of rainwater and are the cause of the flooding observed in the district during the 2020 wet season.

For the population, the absence of rainwater drainage systems increases the vulnerability of the neighbourhood to flooding. The head of the neighbourhood said: “*For the moment, our situation is not dramatic, because the area is not yet saturated (with houses). But it is certain that one day the problem will arise*”.

3.2.2 INFORMAL EXTENSION OF THE BOUNE DISTRICT IN KEUR MASSAR

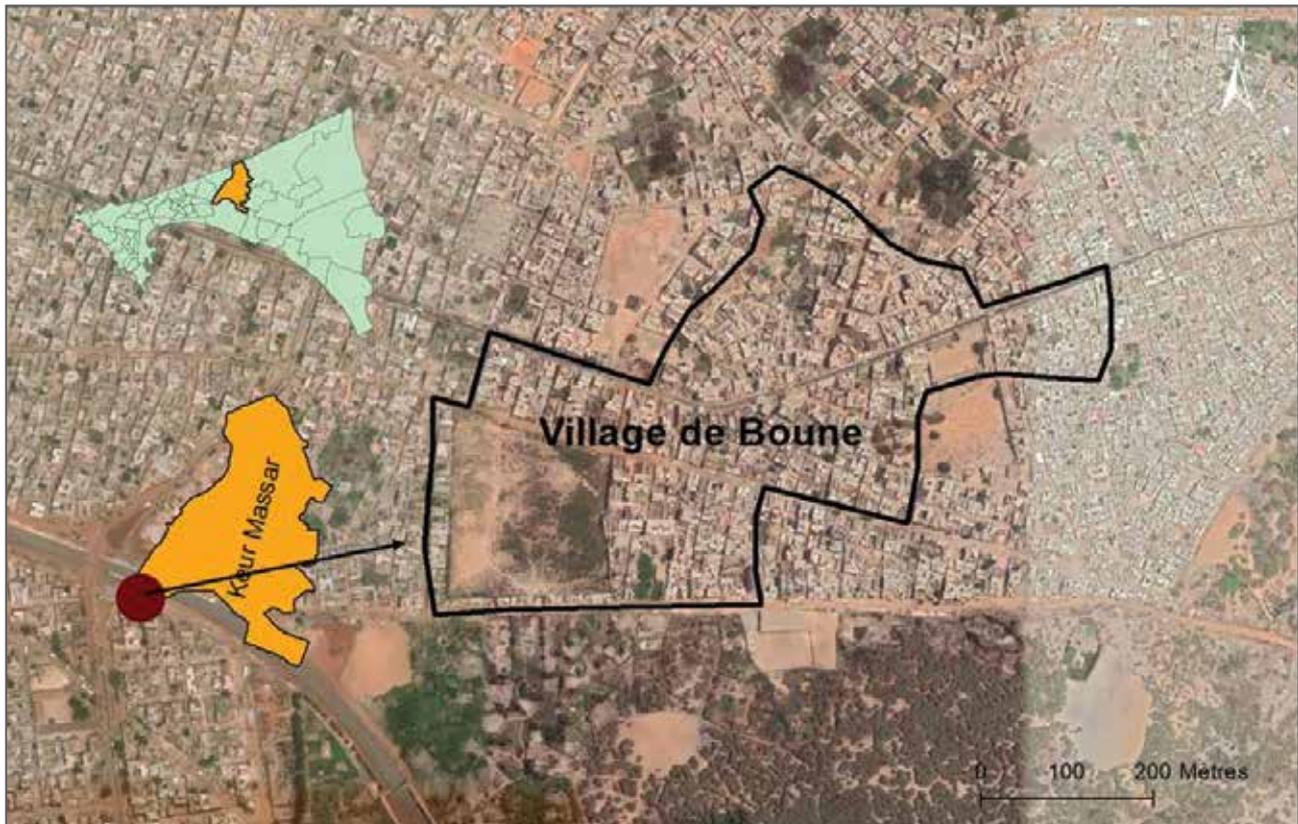
Established in 1774 (according to the elders who took part in the focus group) by farmers of the Lebou ethnic group, the village of Boune became a district of the commune of Keur Massar in 1996 as part of the second decentralisation reform in Senegal. Boune is one of the oldest villages in the Dakar region, which developed with the arrival of migrants during the droughts of the 1970s. According to local elders, the scarcity of rainfall gradually led to the abandonment of rain-fed agriculture and strongly encouraged the inhabitants of the village to divide their fields into housing plots. According to a village elder, “*due to the drought, agriculture was no longer feeding people; the rural people were flocking to the capital city (...). This situation forced us to gradually abandon agriculture and sell our fields. The village then began to grow; people came from all over to live in Boune where the price of land was very affordable*”. Thus, selling land gradually became a means of subsistence for the farmers.

3.2.3 THE BOUNE DISTRICT: A CORE WITH IRREGULAR SHAPES AND SUBDIVIDED EXTENSIONS

Like the Lebou villages of the Cap-Vert peninsula, Boune Village’s core area and extensions have an irregular morphology with a steady or advanced developing trend. Organised into eight neighbourhoods and crossed by a single road, the village has developed spontaneously without an alignment plan. Direct observation shows that the core area is characterised by a sinuous labyrinth-like pattern of narrow alleys with width ranging between 1 and 7 metres. In this part of the district, there is a very dense habitat made up of large homesteads occupied by several households. According to one of the participants in the focus group, “*people came and built houses based on a cookie-cutter approach*” without a subdivision plan or building permit. The lack of control over space occupancy has urged people to settle in the shallows. According to the youth representative, “*Some houses have even been built on ravines. During the wet season, they are flooded by rainwater*”.

Another focus group participant explains that “*the first extensions in Boune date back to 1992-1993. Our grandparents sold their land at a low price. These extensions, unlike the old village, were subdivided by the municipality. The streets in these areas are 6 to 7 metres long*”.

The municipality and SN HLM (Parcelles Assainies of Keur Massar) have developed subdivisions in the village of

FIGURE 5. MAP REFERENCE OF THE DISTRICT OF BOUNE VILLAGE IN THE COMMUNE OF KEUR MASSAR

Source: Google satellite, adapted by IAGU, 2021.

Boune that were previously used for farming because of the low water table and type of soil (fluvisol and arenosol suitable for market gardening). In 2020, during the rainy season, a large part of these areas were swallowed up by run-off water.

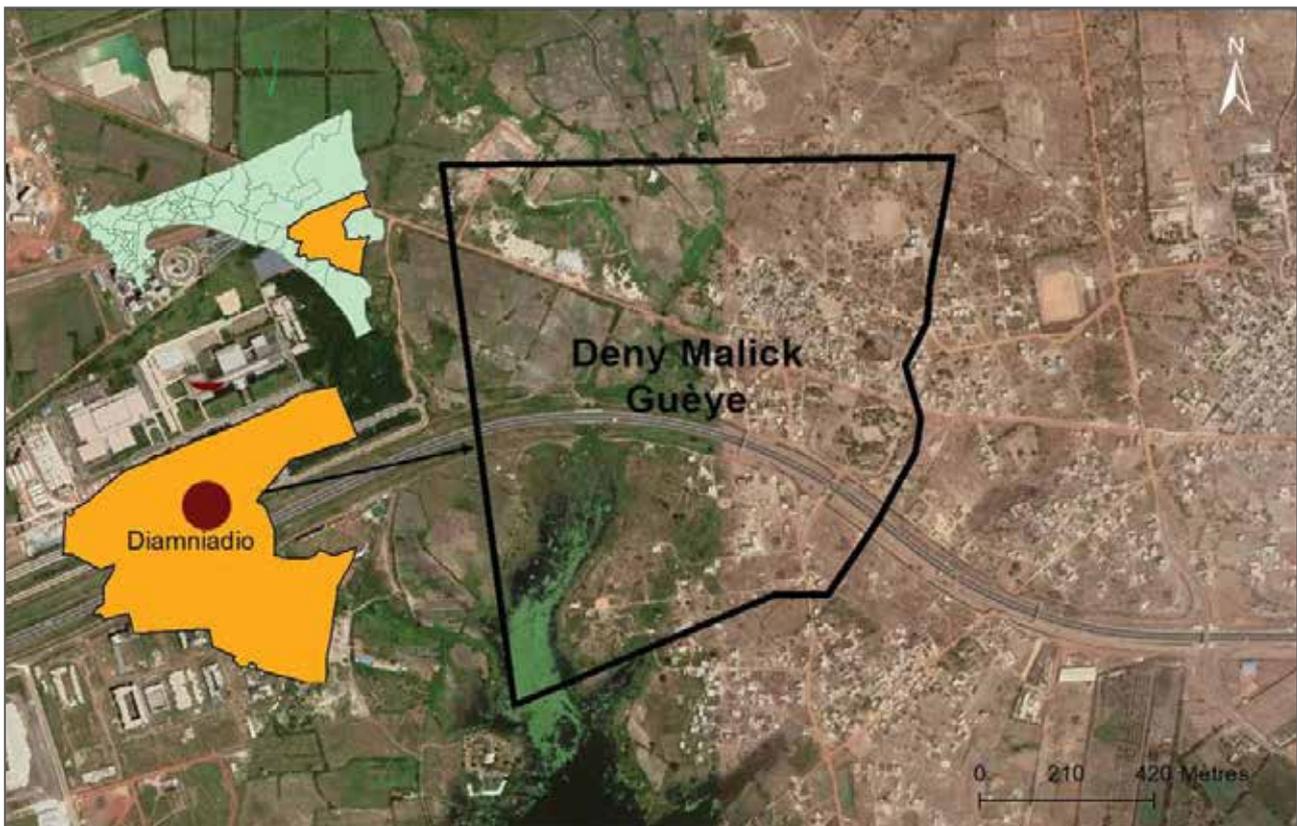
Between land titles, non aedificandi zone and classified forest: what are the prospects for the extension of the district?

Discussions on the land status of Boune Village revealed that most of the land occupied belongs to the national domain. Most of the inhabitants hold deeds of sale or transfer approved by the municipality and deeds of donation. In addition, a few people have a property title certificate. According to the focus group participants, *“there is one individual who does hold a land title for his property. A large space that extends over several hectares. As far as we know, he is the only one to have this title in the area”*. Although the village is old, the people acknowledge that they have not been sufficiently proactive in protecting the land of their ancestors. In the popular consciousness, land seemed to be extensible, and measures had not been taken to set aside land reserves for future generations. This explains why *“the village has*

no more extensions”. All habitable land is sold by native landowners, the municipality or the State.

As part of its housing programme, SN HLM built the Parcelles Assainies of Keur Massar between 1992 and 1993 (Boune Village focus group). In people’s opinion, this programme *“expropriated them from their land without compensation or indemnity and no member of the community had access to this housing”*. At present, there is very little space available, and the community is experiencing serious difficulties in finding a place for community facilities. In order to have a playground, the young people have been forced to build a piece of land in the reserved forest of Mbao. The populations claim to have significantly participated in the reforestation activities of this forest but assert that they have no right to it. They deplore the fact that a cemetery has been built there for the people of Keur Mbaye Fall.

Today, the need for housing and basic social facilities is more acute among the inhabitants of Boune Village. For the people we met, restructuring remains the only alternative for improving their living environment.

FIGURE 6. MAP REFERENCE OF THE DÉNI MALICK GUÈYE DISTRICT IN THE DIAMNIADIO COMMUNE

Source: Google satellite, adapted by IAGU, 2021.

3.2.4 FORMAL SETTLEMENT IN DÉNI MALICK GUEYE

Located in the local authority of Diamniadio, Déni Malick Guèye is a village created in 1919 (according to the focus group participants), which became a district with the reform of Act III of Decentralisation in 2013, which established full communalisation. Named after its founder Malick GUEYE, this former village had until very recently an entirely agricultural vocation. As part of the Niayes agro-ecological zone, the people of Déni Malick Guèye have for a long time derived most of their livelihoods from horticulture, particularly the production of okra and sorrel. This sector, which is mainly exploited by women, is now threatened with extinction with the construction of the Diamniadio urban centre on the cultivation areas and the parts planned for housing extension. This major state project seems to be suddenly and unexpectedly intruding into this peri-urban landscape, which has not finished adapting to the changes brought about by the toll road in 2007. Indeed, the Highway of the Future crosses Déni Malick Guèye, which is split into two weakly connected parts. Thus, the district is at the crossroads of several issues that strongly threaten the land appropriated by these communities for a century.

3.2.5 DÉNI MALICK GUÈYE AND ITS SEVERAL SUBDIVISIONS FROM 2006 TO PRESENT

The focus group made it possible to establish the history of the Déni Malick Guèye subdivisions, which is structured around two major phases. The first phase was authorised and carried out in 2006 by the rural community of Diamniadio, and the second phase was an extension of this development initiated by the municipality of Diamniadio. According to the participants in the focus group, these two operations, carried out in different socio-political contexts, followed opposite processes.

Therefore, the first subdivision was a response to the housing needs of the people of Déni Malick Guèye and the entire rural community at the time. Thus, under the leadership of the President of the Rural Council, a subdivision project to manage the extension of the village was adopted with the approval of the relevant administrative authority. The subdivided extensions have streets of 6, 7 and 8 metres in width. *“There is indeed an approved subdivision plan”* according to the people. In a participatory manner, a certain number of allocation criteria have been pre-established by the Rural Council and the village

“As for the sharing, part of the plots went to the town hall. For the rest, priority was given to the inhabitants of the village. Each resident, who was 18 years of age or older, was entitled ipso facto to a plot of 300 m². When demand became more pressing, the size of the plots was reduced to 200 m². We had listed 1124 young people who were all able to benefit from these plots. Déni also has residents who came from other places; they acquired their plots through the town hall or resellers.”

Focus group interview in Déni Malick Guèye.

claim to have no visibility on the total number of plots of the new allotment allocated to the people of Déni Malick Guèye. In addition, the execution of this extension project predates the subdivision permit, which has not yet been granted. Today, the entire extension area of the original subdivision has been swallowed up by the Diamniadio urban centre, while some plots have been allocated to third parties or sold to individuals. The erection of this new town invalidates any previous allocation of plots in this area, which is the subject of several disputes.

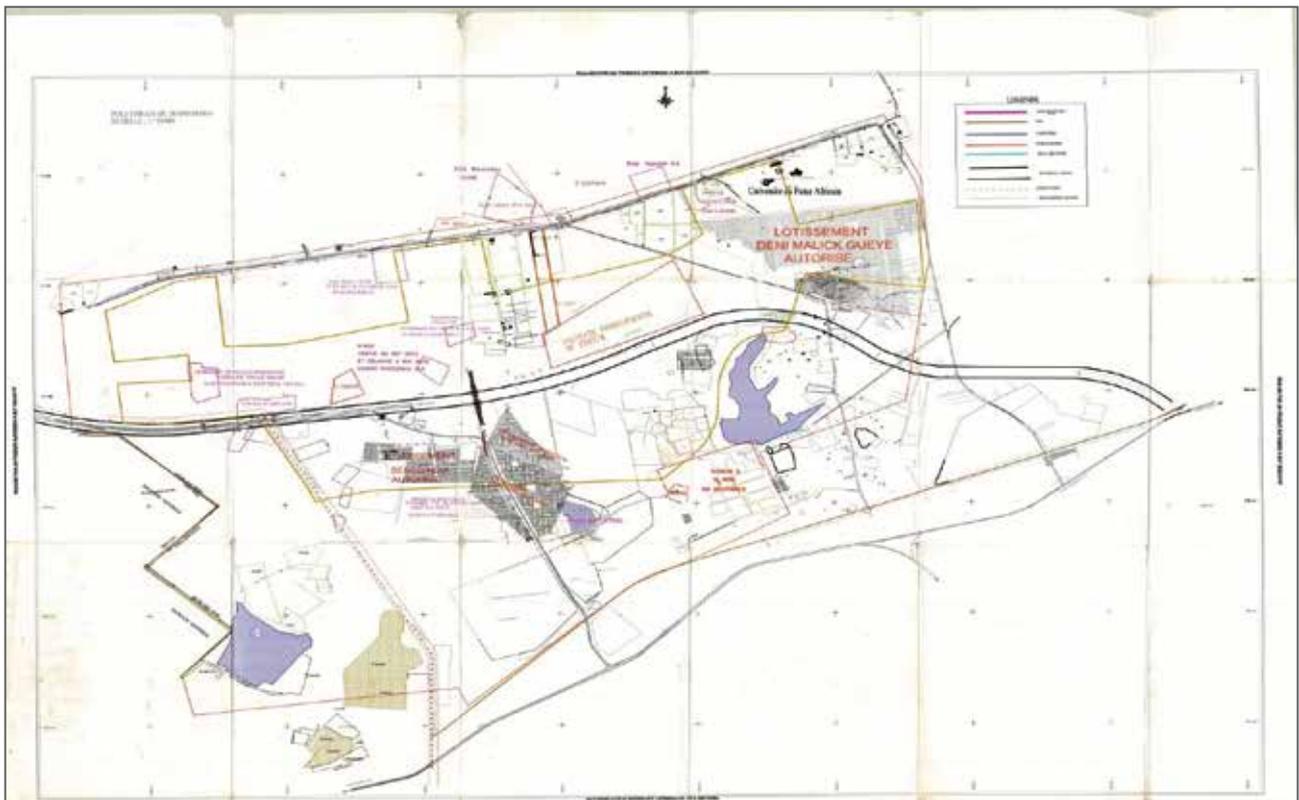
3.2.6 THE DIAMNIADIO URBAN CENTRE: WHEN THE NEW CITY EXCLUDES THE NATIVE POPULATION

elders. Thus, each owner of a field in the area to be subdivided was to receive four plots per hectare in return and at the same time benefit from the quota of 1,500 plots reserved for the village population.

The second subdivision is an extension of the first one of 1,596 plots, which was to fill the gap of the remaining 400 plots of the first operation. Thus, the municipality has committed itself to respecting the quota allocated to the inhabitants of Déni Malick Guèye. However, the people

Land-use planning is only useful if the strategies are in line with the vocation of the territories, the needs and aspirations of the communities. For the people of Déni Malick Guèye, this statement must be established as a principle in the process of designing town planning documents, especially for areas with high agricultural potential such as the Niayes. According to them, there must be convergence between urban development and urban agriculture. And this seemed to be well understood by certain state policies that allowed the creation of the Bud

FIGURE 7. MAP OF THE FORMAL SUBDIVISION OF DENI MALICK GUEYE



Source: Thioune (Surveyor), 2015 at the request of the Déni Malick Gueye Union of impacted people of the Diamniadio urban centre.

Senegal agricultural society and encouraged the promotion of agribusiness projects in the Dakar peri-urban area. The village of Déni Malick has benefited from several organisational supports, including the development of 30 ha for agriculture and poultry farming by the Young Men's Christian Association (YMCA) and the creation of an agri-business perimeter named Jeef Jeel, which produced several crops for the European market. These activities were an important source of income for young people and women. A focus group participant confirms this in the following terms: *"The exploitation of our fields offered employment to many young people, to seasonal workers who came from the interior of the country or from the sub-region. Since the area became an urban centre, all this labour has been left to its own devices."*

These initiatives have now completely disappeared from the landscape of Déni Malick Guèye, which seems to have abruptly turned its back on its agricultural vocation, giving way to housing and infrastructure. Indeed, the decision of the Senegalese government to build the Diamniadio urban centre without prior consultation and inclusion is a clear attempt to make a tabula rasa of the concerns of the people who have occupied this land for almost a century. One of the participants in the focus group, speaking on behalf of the community, said: *"We were informed of the project like everyone else, but we were not consulted on the substance"*. He added: *"We believed that with the Urban Centre, our village would be restructured and that we would benefit from this new town"*. Having understood the orientations of the Urban Centre, which seems to favour the administrative spheres and large investments in the hotel industry, information and communication technologies, among others, the people of Déni Malick mobilised to seize **the competent authorities in order to secure their last land reserves**.

The urban centre, like a fly in the ointment, has taken over the area reserved for the extension of the village (focus group). The project has expropriated plots of land that had been farmed for decades by women and young people, who say they have *"lost a large part of their income from agriculture. They have taken all our fields. The only land we have left is also under threat. Sometimes they come and plunder our fields when we were in the harvesting phase"*. Even if the people claim to have been compensated following this expropriation, they consider that *"it was not commensurate with the losses recorded. If you are given 1,000,000 CFA francs for a field that earns you 4,000,000 million CFA francs every year, that does not solve your problem"*. Compensation commensurate with the damage caused would have been fairer to them and would have enabled them to find alternative ways of ensuring their livelihood. This President of the

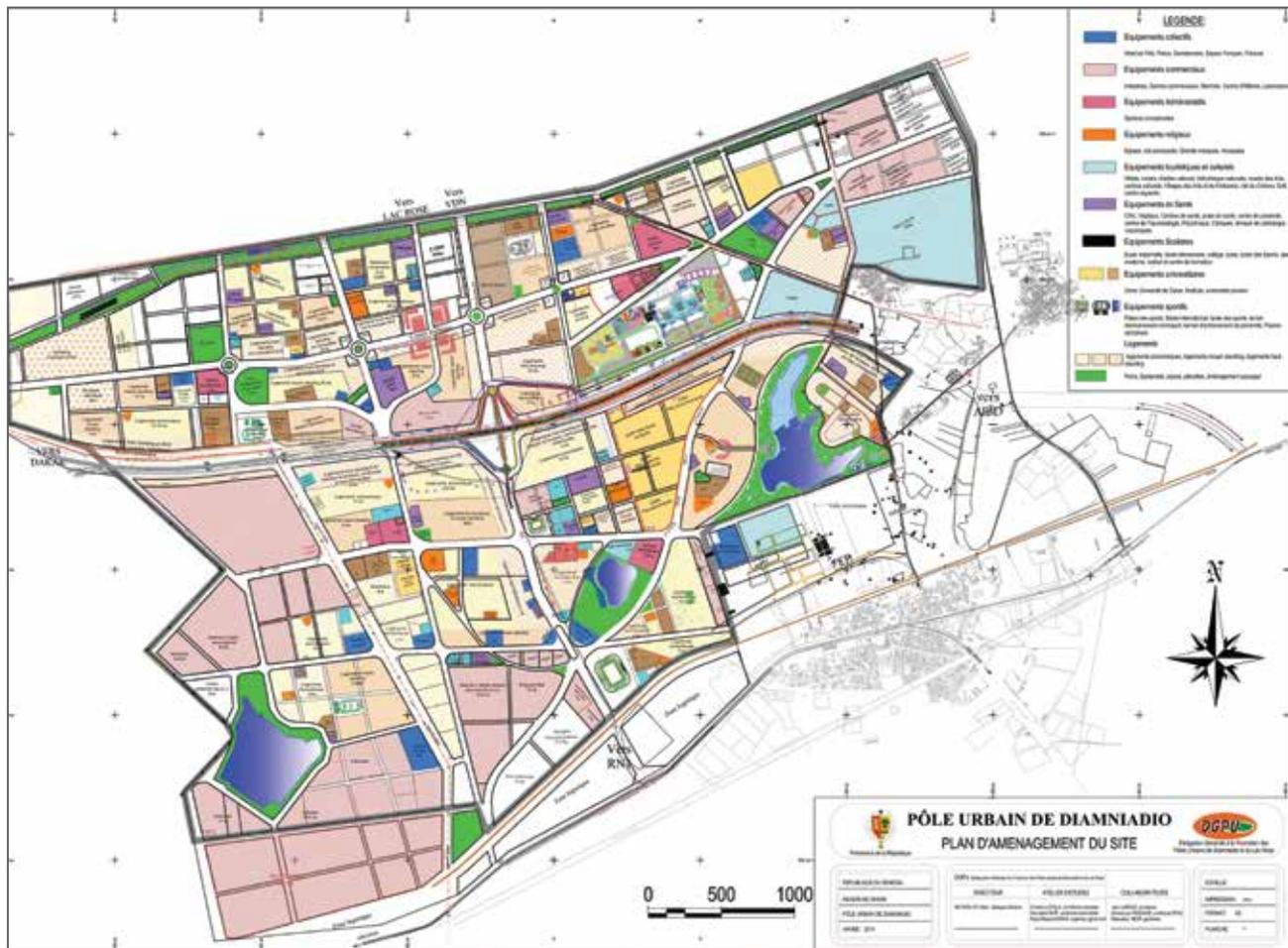
Groupement de Promotion Féminine continues: *"Since this project started, we have not been able to sleep. We have gone to the media; we have shouted our dismay from the rooftops. All we are asking for now is an extension for our future generations"*.

3.2.7 THE DIAMNIADIO URBAN CENTRE

To address the extreme concentration of economic activities and administrative services in downtown Dakar, the Government of Senegal is focusing on the development of new urban centres, in particular Diamniadio and Lac Rose. The Diamniadio urban centre, which is currently being developed, is located about 30 km from the centre of Dakar. It is being developed on a site of about 2,000 ha, which is intended to polarise industrial and commercial activities as well as administrative structures. In the city's 700-hectare germ, 80% of the land has already been allocated to operators. The site of the centre straddles four communes.

The new town is located in an important groundwater resource area. The site also hosts an industrial park. The General Delegation of the Urban Centres of Diamniadio and Lac Rose has designed a green plan which provides a framework for the development of the Diamniadio centre, and which is an integral part of the specifications accompanying the agreement which links it to operators.

However, the development approach adopted for the centre is not inclusive, for it does not take into account the horticultural areas which existed already. Promoting green cities cannot be limited to beautiful landscapes and recreation areas. Indeed, this also has connotations as far as food security, poverty alleviation and income generation for vulnerable populations are concerned. Preserving and supporting horticultural activities on suitable mixed-use lands through appropriate agro-ecological practices would add more value from an economic, social and ecological point of view. A resident met in Déni Malick Gueye said: *"I am in favour of development, but if I have to give up my field so that a hotel can be built in its place, I don't agree."* The existence of 3 lakes and 4 dams shows the importance of the site's agricultural vocation, which could have been consolidated by agro-ecology. The Sébi-Ponty dam (33ha of irrigable area), the oldest, was built in 1937 to supply drinking water and water the vegetable gardens of the former William Ponty Teachers' Training College (**Ndiaye Gora, 1999, Étude hydrologique du bassin versant de Sébi-Ponty**). These dams promoted the creation of small reservoirs for agriculture and were rehabilitated in 2007 by the Direction des Bassins de Retention et des Lacs Artificiels (DBRLA) of the Ministry of Agriculture and Rural Equipment (MRUHCV and JICA 2016, PDU Dakar et ses environs Horizon 2035 - Rapport final: Volume 1).

FIGURE 8. DEVELOPMENT PLAN OF THE DIAMNIADIO URBAN CENTRE

Source: DGPU, 2014

These reservoirs are used for agriculture, livestock and even fish farming (Sébi-Ponty).

The populations of the neighbouring communes of Bargny and Diamniadio, whose possibilities for expansion have been removed, should also be able to access housing in the centre, in order to increase social cohesion and the integration of the centre into its host environment, and thus to overcome the rejection of the centre by certain local people.

Finally, the development of the centre should have integrated the neighbouring areas for greater land-use coherence and infrastructural continuity. It is true that the PROGEP, through the urban development plan for Bargny, Diamniadio, Sébikhotane and Sindou, has initiated a corrective process based on sustainability and land-use continuity. It is to be hoped that the elaboration and approval of this PUD will not take a decade, but also that it will

be followed by the consequent implementation of investments in the communes bordering the urban centre in order to ensure better equity and land-use consistency.

The analysis of these extensions reveals the existence of four (4) forms of subdivision in the region: informal, semi-formal, formal and new town. Of all these forms, it can be observed that the State favours the new town approach to urbanisation in the Dakar region. Even the authorised formal housing subdivisions do not benefit from the support of the public authorities. The semi-formal subdivisions initiated by the municipality of Bambilor are carried out without any administrative control, which amplifies the lack of control over urban and peri-urban space. The emphasis placed by the State on the development of urban centres, even on inappropriate sites, releases anarchic urbanisation carried by self-construction in the other urban fronts.

LEGAL FRAMEWORK FOR LAND MANAGEMENT IN URBAN CENTRES

The DGPU, established by **Decree No. 2014-23 of 9 January 2015**, is responsible, among other things, for undertaking the legal and financial arrangements related to development and equipment operations, infrastructure development and equipment, allocation lands with titles that are developed and equipped in the urban centres of Diamniadio and Lac Rose.

Decree No. 2015-79 of 20 January 2015 is intended to determine the specific rules for land management in the urban centres of Diamniadio and Lac Rose. The operators involved in the urban centres are (i) **The real estate developer**, who is at the same time a land developer, a builder, if need be, and who operates on an overall surface area of more than 75,000 square metres, which he/she is in charge of developing and equipping with roads and various networks serving his/her housing and market facilities; (ii) **The builder-developer** who is a developer and, if necessary, a builder, and who operates on a surface area between 2,501 and 75,000 square metres; (iii) The individual builder who is the user who is neither a land developer nor a subdivider, and who operates on a single non-divisible plot of land with a surface area between 70 square metres and 2,500 square metres.

The titled, developed and equipped land of the Diamniadio and Lac Rose urban centres is allocated to operators within the framework of ordinary lease agreements, long term leases, concessions of surface rights, permanent transfers or authorisations to occupy. The agreements provide for (i) an annual rent for the leases, a price for the concessions of the right to build or the permanent transfers or the fee for the authorisations to occupy and (ii) a financial contribution in road works and various networks.

Order No. 693 of 21 January 2015 set the annual rent per square metre at CFAF two hundred and seventy (270) on the priority site of the Diamniadio urban centre.

The State also builds the roads outside the operators' sites that link the Diamniadio urban centre to its immediate environment, the roads surrounding the urban districts and the main roads. The building of all the roads and other networks serving the subdivision blocks and the plots allocated to them are normally the responsibility of the operators. However, in order to ensure the overall consistency of this system and to rationalise costs, the DGPU builds the roads and other networks located on the right-of-way buffer of the operators' plots and those linking the works carried out by these same operators to the roads and networks outside their sites.

Thus, the operators pay a royalty called financial contribution to the roads and various networks. **The real estate developer pays a contribution of CFAF 2,900 per square metre; the contractor CFAF 6,500 and the individual builder CFAF 10,000 per square metre.**

4

ACCESS TO ESSENTIAL SERVICES IN THE SUBURBS OF DAKAR: MOBILITY AND SANITATION

Access to basic services is more demanding in cities and creates new discriminations between social categories. Dakar appears to be a segregated city where differences in income, but also in the services offered to inhabitants, vary considerably depending on the settlement area (World Bank 2015).

4.1 MOBILITY AND INFORMAL SETTLEMENTS

Land use in the Dakar region is characterised by a concentration of commercial, administrative and institutional activities at Plateau and Fann, and industrial activities around the port and along the southern coast (Dakar department). **Commuting between the centre and the suburbs** is the main source of motorised movements due to the concentration of services and public facilities in the Plateau and Fann areas. The rest of the territory is predominantly residential.

The exhaustion of land reserves in the Departments of Dakar and Guédiawaye has led to a population shift to the Departments of Pikine and Rufisque, resulting in **urban spread towards the north-eastern sectors of the region**.

Among the shortcomings preventing an efficient and economical use of urban spaces are the anarchic occupation by informal activities, the lack of basic services, in particular lighting and sanitation in certain neighbourhoods, and the shortcomings in the implementation of the Urban Development Plans (PUDs), which are detrimental to the fluidity of traffic, the preservation of the urban environment and the protection of natural sites (CETUD 2007 PDUD 2025).

Households in Dakar spend 11% of their income on mobility. The affordability ratio is higher among poor households, as it reaches 17% among the 20% poorest households and 9% among the 20% richest households (CETUD 2015 EMTASUD).

4.1.1 PRIORITY MEANS OF TRANSPORT IN DAKAR

Walking is the most important mode of transport in Dakar, accounting for 70% of total movements.

Motorised movements account for 30% of trips and are provided for more than **80% by public transportation (PT)**. Among them, AFTU minibuses (“Tatas”) appear to be the most used (35% of PT trips). They are followed in decreasing order by cars rapides (20%), clandos (12%), taxis (10.5%), Dakar Dem Dikk buses (6%), Ndiaga Ndiaye (4%), other minibuses and the PTB (1% of public transport uses each), while 10% of public transport uses combine two different modes of public transport (CETUD 2015 EMTASUD).

In terms of motorised movements, the people of Dakar have a clear preference for private cars and taxis because of their comfort and speed. However, the modal distribution observed does not reflect such a preference, since public transport retains a market share of around 80%. The people of Dakar thus remain captive to public transport despite its negative image (CETUD 2007 PDUD 2025).

In the Dakar region, the average time declared by households to walk from home to the nearest public transport stop is just under 7 minutes (min). This means Dakar 6 minutes, Guédiawaye 5.3 minutes, Pikine 8 minutes and Rufisque 7.20 minutes. This unfavourable situation for the suburbs can be explained in part by the presence of a large area occupied by informal settlements on the periphery of Dakar. The suburbs are also at a disadvantage in terms of means of transport. Indeed, **the department of Dakar accounts for 64% of all means of transport in the region for 46% of households**; Pikine, 17.1% for 33% of households; Guédiawaye, 5.4% for 9% of households; and Rufisque 13.4% of vehicles for 12.7% of households.

MOBILITY PROBLEMS IN THE EXTENSION DISTRICTS: THE CASE OF BAMBILOR 3, BOUNE AND DENI MALICK GUEYE

The commune of **Bambilor** is served by the Niayes road, which gives access to the turnpike road and to national road No.1 from the city of Rufisque. The Bambilor Extension 3 neighbourhood is not landlocked, especially as the main road provides access to these road infrastructures. However, the inhabitants of this neighbourhood have difficulty in moving around, as the means of transport are insufficient. Working outside the municipal boundaries, most of the population faces many difficulties in getting around on a daily basis. For the youth representative at the focus group meeting, travelling by cart is very common, especially when it is a question of making short trips, or of transporting a sick person or luggage in a hurry. In his words, *“to get out of the neighbourhood, unless you have your own car, you have to take carts. The distance from the main road to the neighbourhood is about 700 m. Otherwise, you have to take a car. Otherwise, you have to take a clando car at CFAF 2,000 a ride. When someone is ill or a woman is about to give birth, a cart is used most of the time”*. Thus, transport within the commune is provided by a few “clando cars” and horse-drawn vehicles (**focus group in Bambilor Extension 3**).

The analysis of the perceptions of the inhabitants of **Boune village** on the transport system focused on the road network and the provision of public transport services. The diagnostic results show that the road infrastructure is poor and that access to transport is difficult.

Served by a narrow stretch of road called the “Boune road” which connects Yeumbeul and Keur Massar, the Boune district is known for its traffic jams at peak hours. According to the Secretary General of the district council, *“it takes two hours to get to the city. The road was in a pitiful state, and it was recently repaired by AGEROUTE,”* he says. As a result, *“all the Dakar Dem Dikk lines that used to pass through the village have been cancelled”*. These are the P 11 and P 16 lines, which have changed their route because of the narrowness of the road and the traffic jams.

Thus, inter-city transport is provided by AFTU bus lines, “cars rapides” and taxi carpooling, but difficulties persist according to the population.

In spite of the difficulties noted in transport, the populations positively appreciate the presence of the toll motorway *“which has helped to improve travel a little”*. However, they note that their needs would have been better taken into account if an exit from Boune on the motorway had been built. Indeed, the toll motorway is close to the district, as it crosses the Mbaou forest, which forms the eastern boundary of the district. With the implementation of the Regional Express Train, hope seems to be allowed among the populations, especially since a station is planned at Fass-Mbaou, located 10 minutes’ walk from the district. While waiting for the delivery of the structure, the population is hoping that the TER *“will help to further open up their locality”*.

Déni Malick Guèye does not have any public transport, the shuttles to urban centres such as Diamniadio or Sébikhotane are provided by clandos: *“We have clandos as means of transport in the village. When there is an emergency, they are the only means of transporting our patients.”* It has become very difficult for the people of Déni Malick Guèye to get around because of the toll motorway that crosses the village, leaving them with a 3-metre wide tunnel as the only way out. *“It is through this tunnel that pedestrians, oxen and cars pass. In addition to its narrowness, this tunnel poses a problem of insecurity in the village; it is poorly lit. Cases of aggression do not fail to occur there.”*

Therefore, travelling across the country or to Dakar is an ordeal for the population, who have to make a diversion through the side roads to Sébikhotane or Diamniadio to use the toll motorway or the national road. This infrastructure has contributed to the isolation of Déni Malick Guèye and has made it more difficult for people to travel. The transport of goods or other products is becoming increasingly difficult, especially when it comes to construction materials for example: *“Trucks cannot go through the tunnel; they are forced to go all the way up to Sébikhotane before going back down to Déni Malick Guèye. This means that you have to pay more than the normal price.”*

4.1.2 DIAGNOSIS OF THE MOBILITY STATUS IN DAKAR

The causes of the deterioration in mobility conditions identified by the Dakar Urban Travel Plan (PDUD) carried out in 2007 as part of the Urban Mobility Improvement Programme (PAMU) under the supervision of CETUD are multi-layered and include:

1. Institutional and regulatory issues;
2. Inconsistency between town planning and transportation;
3. inadequacy of the road network;
4. traffic planning and management;
5. parking;
6. urban environment;
7. user implications;
8. access issues for all means of transport (CETUD 2007 PDUD 2025).

Mobility in the Dakar region is impacted by the availability or lack of following facilities: public lighting, passable roads, public transport, pavements, space on pavements, footbridges, speed bumps / pedestrian crossings. They are most lacking in the informal settlements in the suburbs (CETUD 2015 EMTASUD).

Walking, which accounts for 70% of travelling in Dakar, is confronted with inconveniences arising from the characteristics of the urban environment and which are widely felt by the population (more than one person in two reports this): congested pavements (63%), lack of lighting at night (63%), absence or poor condition of pavements (58%),

flooding in the rainy season (58%), bad odours or presence of litter (56%), and risk of accidents (51%).

The footbridges put in place to allow safe crossing of major roads are, logically, regarded less negatively, but they nevertheless constitute an inconvenience for a quarter of people, probably because they induce additional effort for pedestrians by lengthening the route and forcing them to go up and down stairs (CETUD 2015 EMTASUD).

Pedestrians are also affected by the failure of pedestrian crossings, pedestrian-only phases at traffic lights, connecting or crossing structures, footpaths and pedestrian streets. Little is done to ensure the safety and security of 'vulnerable' pedestrians such as children, women and the elderly (CETUD 2007 PDUD 2025).

In order to address these shortcomings, the PDUD 2025 has set the following overall objectives: (i) Improving the fluidity of the movement of people; (ii) Improving the efficiency and reliability of goods transportation; (iii) Increasing road safety; (iv) Controlling development with a view to economical management of space and better coherence between urbanisation and the transport system; (v) Preserving the environment; (vi) Ensuring adequate and equitable financing of the transport system; (vii) Maximising the chances of realising the PDUD (CETUD 2007 and World Bank 2015).

In total, twenty-five (25) projects are defined for the first phase of PDUD-I. The total budget of the PDUD is CFAF 647,043,000,000, of which CFAF 837,377,000,000 is for phase 1 (CETUD 2007).

NEW STRUCTURAL PROJECTS FOR MASS TRANSPORT IN DAKAR

Bus Rapid Transit (BRT): The BRT project led by CETUD. Its overall funding is 306 billion. It will carry up to 300,000 passengers per day and will be operational in 2022.

The BRT will extend over a distance of 18.3 km, with twenty-three (23) stations, crossing fourteen (14) communes from the Petersen bus station to the prefecture of Guédiawaye and will have 144 articulated buses. The BRT is priced at CFAF 300 on the corridor, with the possibility of combining it with a feeder bus for an additional CFAF 100 to 150. To reduce energy consumption, the power supply of the stations will be autonomous with a solar consumption mode. The bus system will provide seating and standing places for 150 passengers per bus. (http://www.brtdakar.sn/IMG/pdf/brt_brochure_a4_2_compressed_3_.pdf)

The Train Express Regional (TER) is operated by APIX. It crosses 18 communes in the departments of Dakar, Pikine and Rufisque and was built in two phases: the first from Dakar station to Diamniadio (36 km) and the second from Diamniadio to the AIBD (19 km). The financing of phase 1 of the project is CFAF 483.3 billion. The TER will carry up to 115,000 passengers per day and will serve 13 stations and stops between the suburbs of Dakar and the new town of Diamniadio. (https://investinsenegal.com/grands_travaux/train-express-regionali/)

TESTIMONIALS FROM THE MUNICIPAL TECHNICAL DEPARTMENTS OF THE DAKAR REGION ON THEIR INVOLVEMENT IN THE TER AND BRT PROJECTS

The cities of Dakar, Rufisque, Pikine and Guédiawaye gave nuanced answers as to their involvement in the two major urban transport projects (TER, BRT) currently being implemented. The interviewees were unanimous in stating that it is only the communes affected that are directly involved. Most information on these projects is received through the press. The only time they were informed by the Prefect was during the launching ceremony. The interlocutor from the town of Rufisque maintains that their town is only exceptionally informed about the TER when there are disputes to be settled between the population and the project manager (interviews conducted as part of the study).

However, ownership of the PDUD by the other stakeholders, in particular the cities of the Dakar region, is cruelly lacking. The four (4) technical services of the cities and the ARD, questioned during the interviews, state that they are not aware of it. This lack of ownership may make the PDUD the business of CETUD and have a negative impact on the mobilisation of resources for its implementation. Even the transporters' and traders' associations (AFTU, UNACOIS) say they are not aware of the PDUD.

Furthermore, CETUD, which produces town planning documents on mobility, claims to involve the population through public consultations, information and co-construction workshops and the stakeholder engagement plan. According to our interlocutor within this organisation, with regard to the TER and BRT projects, CETUD has set up an initiative called "Pépinière Urbaine de Dakar" (Dakar Urban Incubator) to support local stakeholders in co-producing and adopting the facilities planned within the framework of these urban projects via micro-developments.

These projects should be combined with bold initiatives to improve pedestrian transport and promote vertical housing to facilitate commuting. Also, the TER tariff should be accessible to low-income populations in order to make it a means of mass transport.

These testimonies collected from the technical services of the cities do not seem to corroborate the statements of our CETUD interlocutors, at least with regard to the involvement of the communes of the region in the TER and BRT projects.

4.1.3 PUBLIC TRANSPORT USERS' SATISFACTION LEVEL

The level of satisfaction of the population with the different forms of public transport is assessed on the basis of the following criteria: rate ("It is cheap"), connection with residence ("It stops near my home"), waiting time ("I wait for it for a short time"), speed during the journey ("It is fast"), minimum comfort ("I have enough room in the vehicle") and road safety ("I do not risk accidents").

Taxis: User satisfaction with waiting time, speed, space in the vehicle and connection with residence is extremely positive with 80-91% favourable opinions. On the other hand, **the cost of using the Taxi is logically pointed out:** 44% do not agree with the fact that it is cheap.

Clandos: Like taxis, Clando is widely considered by its users to be fast (nine out of ten), to have enough seats on board (eight out of ten), little waiting time (more than three out of four), and good connection with the residence (two out of three). But and this is the fifth very positive element, **it is perceived as inexpensive by three out of four users, which clearly distinguishes it from the taxi. On the other hand, opinions are much less positive about the risk of accidents:** only two out of five Clando users do not consider it a risky means of transport.

Minibuses: Although this means captures only a very small part of the public transport market, the opinions of its users are generally positive. The main qualities of the minibus are its price (72% of users), the space available in the vehicle (77%) and its speed (64%). Finally, even more than for the clando, the risk of accident is very strongly felt, as only 37% of its users feel safe.

Cars rapides: The price of Car rapide transport is one of its major advantages: 87% of users consider it to be cheap. The second criterion showing high satisfaction is the low waiting time (76% of users). However, Car rapides are considered a slow means of transport with a risk of accident for 55% of users.

Ndiaga Ndiaye: The Ndiaga Ndiaye is considered cheap by 83% of its users, with enough seats in the vehicle (77% agree) and satisfactory in terms of waiting time (72%). 55% of users also consider it to be a fast mode of transport, but 39% disagree. It is above all its **poor spatial coverage** that is felt by 58% of users.

Dakar Dem Dikk: The Dakar Dem Dikk company's buses are positively assessed in two respects: **cost of use and journey time**, as 86% of users consider them to be cheap

and 74% find them fast. **Dakar Dem Dikk also appears to be the safest mode of public transport in Dakar.** Finally, the two weak points of Dakar Dem Dikk in the view of its users relate to waiting time and space in the buses. In both cases, negative opinions are clearly in the majority: 54% find that there is a long wait and 57% feel that they have few seats.

AFTU: The opinions of users of AFTU minibuses, commonly known as 'Tata', differ from those of other public transport modes. **Their strength is their speed, noted by 70% of users.** In terms of price, 61% of users find it affordable (although less so than other modes of public transport, with the sole exception of taxis). Some 69% feel that they do not have enough seats on board, which is obviously linked to the occupancy rate of the vehicles. **AFTUs are thus victims of their success and their leading position in terms of usage.** The AFTUs appear to be more reassuring than other modes of public transport, but without reaching the level of confidence attributed to Dakar Dem Dikk buses.

AFTU PROJECT

In 2005, fourteen EIGs joined together to create a transport structure called AFTU. From its creation, this grouping benefited from World Bank funding of eight billion euros for the renewal of the vehicle fleet. This test phase, which took place between 2005 and 2011, saw the entry of "Tata" and "King Long" minibuses into the transport circuit. The second phase, which ended in 2016, was financed up to CFAF 8,700,000,000. This made it possible to reinforce the minibus lines in Dakar and in the other regions. As a result, 700 minibuses have been received in the Dakar region and 450 in the other regions. The AFTU network consists of 14 EIGs, 44 communes, 64 bus lines in circulation in the Dakar conurbation where all localities are relatively well served (interview with CETUD and <https://www.cetud.sn/index.php/reseau/aftu>).

Petit Train Bleu: The PTB's offer is extremely concentrated spatially, and its use is reserved for certain routes. It is therefore only used by a small proportion of the residents of the Dakar region. **The two main qualities of the PTB are its speed and its low rate,** recognised by 90% and 82% of users respectively. On the other hand, **78% of users consider that the stop is far from home** (CETUD 2015 EMTASUD).

The satisfaction analysis should be further disaggregated by specific groups, in particular vulnerable populations such as women, the elderly and those living with a disability. For the latter, the following plea by the President of the Senegalese Federation of Associations of Disabled People (FSAPH) is sufficiently edifying:

"This is one of our biggest problems, especially in the context of development in general. There are provisions in the law that stipulate that disability should be taken into account but more in terms of financial accessibility (reducing the cost of transport) whereas we are more concerned about physical accessibility. For the Dakar Dem Dikk buses, an order for 475 adapted buses had been placed to facilitate access for disabled people, but they are rarely seen on the circuit. However, disabled people who have the equal opportunities card have benefited from free transport cards, but this remains within the framework of assistance and social aid. What we need above all is recognition of our right as citizens to be able to use the means of transport, and for this to happen, they must be made physically accessible, as they are in Europe and elsewhere. This is why disabled people complain because it is difficult to move around. Dakar Dem Dikk has made an effort in this direction, but it is much more a social effort."

4.1.4 CONCLUSION: IMPACT OF INFORMAL PERI-URBAN SETTLEMENTS ON MOBILITY IN THE SUBURBS

The very high concentration of commercial, administrative and institutional activities in the department of Dakar and the exhaustion of land resources in the departments of Dakar and Guédiawaye have resulted in **urban spread** towards the departments of Pikine and Rufisque. This spreading, combined with the lack of formal subdivision of the peripheral extensions, makes mobility more difficult for suburban residents.

In these undeveloped suburban neighbourhoods, where the housing is irregular, the streets are narrow and winding, the reserves for infrastructure and public facilities (e.g. markets) are non-existent, and the congestion of the public space exacerbates travel problems. The access issues faced by the residents in these neighbourhoods increases the time taken to reach a public transport (PT) stop.

Suburban households with lower incomes also spend a larger proportion of their resources on mobility. Less well-off, they are the ones who use walking the most as a means of transport, even though measures have not been taken to ease walking. . Indeed, pedestrians are confronted with the non-existence of pavements or with sidewalks

invaded by motorists and traders, disruptions and lack of safety, particularly for “vulnerable” pedestrians such as children, women and the elderly.

The populations of the Dakar suburbs also remain captive to public transport, which is marked by a generally unsatisfactory quality of service from several points of view (availability, service, comfort, speed, safety, etc.).

The suburban areas are characterised by undeveloped and informal settlements, which adds to the lack of infrastructure and basic services, including roads, pavements and lighting, and thus affects the quality of travel.

Thus, improving the quality of travel for the suburban residents in Dakar requires more regular town planning, particularly through the reorganisation of informal settlements, the verticalization of housing, the mixing of urban functions, the banning of informal housing subdivisions and the production of public housing or serviced plots accessible to low-income households, particularly in the informal sector.

Finally, access to public transportation should be secured for people with disabilities through the adoption or revision of legal instruments on mobility (laws, decrees, orders, circulars) and the involvement of disabled people’s organisations in the regulatory bodies in charge of public transport planning and management (CETUD, Dakar Dem Dikk, TER company, AFTU EIG).

4.2 SANITATION IN THE SUBURBS

4.2.1 SEWAGE SYSTEMS

Liquid sanitation is the management of wastewater, excreta and rainwater to prevent damage to human health and safety, as well as to the environment. The wastewater component of liquid sanitation includes collective sanitation and autonomous sanitation (individual or semi-collective not connected to a public network (law n° 2009-24 of 8 July 2009 on the Sanitation Code). Collective sanitation, which includes the sewer network made up of underground pipes, manholes and pumping stations, as well as the connection to a treatment plant, is more common in the Dakar department.

The suburbs of Dakar, mainly the department of Pikine, are not served by a collective sanitation network, but have individual or, more rarely, semi-collective sanitation systems (ONAS 2010, Actualisation du plan directeur de l’assainissement liquide Dakar 2025, Mission Report A).

The prevalence of autonomous sanitation in the departments of Pikine and Guédiawaye can be explained by the irregularity of the urban fabric and the density of the built-up area, as most of these sites have not been developed before the population settled.

In the suburban departments, the autonomous sanitation works are one of the causes of the pollution of the **surface water** table and also of its rise. Autonomous sanitation, as it is usually practised there, leads to incomplete purification and pollution of the water table, particularly by nitrates, and sometimes even by bacteria. This is due to the use of underperforming infiltration wells instead of horizontal spreading fields. The situation is further worsened in large areas by the location of the water table too close to the ground surface.

Improving the performance of individual sanitation with regard to treatment is difficult to contemplate for reasons linked to the outcrop of the water table in certain places, and to the density of the built-up area.

In conclusion, autonomous sanitation in Pikine and Guédiawaye can only be a transitional measure while waiting for the implementation of a wastewater collection network.

The generalisation of the semi-collective sanitation system in Pikine and Guédiawaye is, in principle, an appropriate response to resolve the two problems (pollution and high water table). However, it is likely to run into difficulties due, on the one hand, to the topographical configuration of the area concerned, with a relatively anisotropic relief and with a multitude of low points that will require the multiplication of pumping stations, and on the other hand, to the size of the area to be equipped, which will require many years in terms of implementation time (and during this time, the water table will continue to be fed by wastewater). One may also wonder, in the event that the solution chosen nevertheless consists of generalising the networks, whether the semi-collective principle would not be the best choice insofar as it does not make it possible to control the quality of the equipment at the user’s premises (particularly the water tightness of the pits), and whether on the contrary the transition to a classic collective network would not be interesting in the end (ONAS 2010, Updating of the Master Plan for the Management of Liquid Waste Dakar 2025).

The wastewater sanitation system selected by ONAS as part of the update of the DAKAR 2025 PDA for a large part of Guédiawaye and Pikine (EAST Zone in the PDA) is the classic collective sewerage system.

The area of Pikine Guédiawaye is almost entirely without a wastewater collection network (just 1.8% of households connected to the sewerage system in Pikine according to its mayor). The total estimated investment for the complete realisation of the PDA by 2025 for the East zone (large part of Guédiawaye and Pikine) represents **CFAF 143,026 million, of which CFAF 112,542 million for the collection networks and works and CFAF 30,484 million for the wastewater treatment plant** (ONAS 2013, Updating of the Master Plan for the Management of Liquid Waste Dakar 2025, Mission Report C).

The conventional collective sanitation network selected for the Pikine Guédiawaye area is nevertheless facing major constraints, which are:

- 1. A specific topography.** The relief is not very marked and consists of a succession of small depressions, particularly in the southern part of the area. This topography hampers the definition of a gravity system: low slopes, significant depth of the pipes, multiplication of pumping stations.
- 2. The presence of the Thiaroye water table is often less than 2m deep.** Gravity pipes are therefore often laid in the water table, which leads to a significant investment cost and major risks of parasitic water intrusions. The construction of pumping stations is also affected by the presence of groundwater. It will require selecting specific procedures.
- 3. Mostly spontaneous or village-type urban development.** It is sometimes difficult to find a passage for the pipes, for example, because of very narrow streets and/or streets perpendicular to the drainage axes or narrowing due to the construction of houses encroaching on the communication routes, which again leads to significant additional costs when building the network.

According to ONAS (2013), these constraints will lead to considerable additional costs, particularly because the drop in the water table expected from the implementation of the drainage master plan (PDD) will take place over several decades, while the area is undergoing rapid urbanisation.

The PDA Dakar 2025 was completed in 2013, but its implementation in Pikine Guédiawaye began half-heartedly in 2019 with the financing by the West African Development Bank (BOAD) of 3 billion 245 million francs to carry out works that will impact less than 5% of the area's population (30,000 inhabitants in Pikine) as part of the sanitation programme for 10 towns in Senegal.

4.2.2 RAINWATER DRAINAGE SYSTEMS

The master plan for rainwater drainage in the Dakar peri-urban region (PDD), carried out by ADM in 2012, is designed to propose the planning of structural works to be carried out to control flooding in the Dakar peripheral zone, particularly in Pikine and Guédiawaye. The global vision of the PDD required compartmentalizing the space so as to respect the limits of the catchment areas, of which there are 20.

The development of the PDD considered the multiple and complementary causes of flooding, which mainly concern:

1. Increased rainfall in recent years;
2. The endoreism of the area with the absence of thalwegs and with some 500 low points counted;
3. The rise in the water table, which is an aggravating factor;
4. The sealing of the soil in conjunction with the increase in the occupation of the area;
5. The uncontrolled occupation of space that should have remained non aedificandi;
6. The absence of both primary and secondary collection networks;
7. The lack of maintenance of the few existing linear roads.

The works planned by the PDD include almost **150 km of canals** to be built. In addition, **185 rainwater storage areas** will be developed, with a total storage capacity of more than six million cubic metres, and **23 sea discharge works**.

The proposals of the PDD are in line with a sustainable development approach by advocating the safeguarding and enhancement of the Niayes through developments whose objectives are the following:

1. enhance the value of the various Niayes banks and promote the recovery of natural and landscaped areas;
2. combine the functions of catchment/storage with that of recreation through facilities dedicated to sports, educational and cultural development;
3. favour the flow and collection of run-off water and limit the sealing of soil
4. secure non-constructible areas
5. find the necessary compromises between stakeholders with different concerns thanks to the setting up of consultation spaces.

The financial estimate of the projected investment amounts is as follows: **CFAF 74.5 billion (excluding taxes, labour**

cost and contingencies) of which the drainage channels represent 42.7 billion, the storage works 22.2 billion and the sea discharges 9.5 billion.

The grand total including project management (10%), miscellaneous and unforeseen expenses (15%) is **CFAF 93.1 billion**. The PDD provides for 1,200 expropriations, i.e. a budget line of CFAF 12 billion, on the basis of compensation of CFAF 10 million per house.

In conclusion, it should be emphasised that the PDD alone will not be sufficient to reduce nuisances, as secondary and tertiary channels will have to be taken over by the communes or developers as a corollary to the primary works.

To ensure the implementation of the PDD, the Government of Senegal has carried out between 2012 and 2019, with the technical and financial support of the World Bank, the Nordic Development Fund (NDF) and the Global Environment Facility (GEF), the **Rainwater Management and Climate Change Adaptation Project (PROGEP)** with a **budget of CFAF 36.8 billion**.

THE PRGEP PROJECT

The PROGEP is 21 km of reinforced concrete primary collectors, 4 km of secondary network, 21 retention basins with a total capacity of 648,500 m³, 63,000 m² of paved roadway, 1 pumping station, 3 sea discharge structures, 8,100 m² of walkways around the basins.

The drainage works carried out under the PRO-GEP allow for the rapid evacuation of large quantities of rainwater by gravity. Thus, thanks to the work carried out, 167,000 inhabitants, 52% of whom are women, are no longer subject to the risk of flooding and 900 hectares have been protected from recurrent flooding in the neighbourhoods of the communes concerned in the department of Pikine: Dalifort-Foirail, Djidah Thiaroye Kaw, Keur Massar (Mbeubeuss Lake catchment area), Malika, Yeumbeul Nord and Yeumbeul Sud; and in the department of Guédiawaye: Médina Gounass and Wakhinane Nimzatt.

The implementation of PROGEP has led to significant changes, the most important of which are:

1. An improvement in living conditions and the landscape of the neighbourhoods concerned by the works through the virtual disappearance of capillary rise in the buildings, the reduction in the frequency of septic tank emptying, the reoccupation of houses that

had previously been abandoned, the return to regular functioning of basic social infrastructures, and the improvement of hygiene, health and mobility;

- 2. The significant lowering of the water table (from 1 to more than 2 m)** thanks to the drainage systems that have been built, which has led to the drying up of low-lying areas, a better functioning of septic tanks and a reduction in emptying costs for households;
- 3. the liberation of flooded or flood-prone areas** through the implementation of the works and their preservation through community investment projects.

The works carried out within the framework of PROGEP have greatly contributed to dealing with the serious and recurrent flooding that affected the peri-urban area of Dakar by concretising part of the vision proposed within the framework of the PDD. However, it is more necessary than ever to pursue the implementation of the initiatives recommended by the said plan, so as to cover the entire peri-urban area of Dakar, and even beyond, while making the most of the experience capitalised by the PROGEP. Also, the drainage works carried out within the framework of the PROGEP are exposed to a significant number of risks likely to compromise their durability and proper functioning. Among these risks are obstruction by waste, silting, the accumulation of sediment carried along which favours the installation of aquatic plants, the degradation of the slopes protecting the basins against erosion, etc.

DENI MALICK EXCLUDED FROM THE SANITATION NETWORK OF THE URBAN CENTRE OF DIAMNIADIO

For the population, wastewater management is less of a problem than rainwater management, whose natural outlets are now obstructed by the earthworks of the various projects of the new town. Déni Malick Guèye had a natural gravity system for draining runoff water to temporary ponds and fields. The obstruction of water paths and the elimination of temporary ponds could, in the short term, expose the Déni Malick Guèye neighbourhood to flooding. According to the population, this risk is reinforced by *“The buildings of the Urban centre overhang the village, which finds itself in a bowl-like position, while all the rainwater from other areas flows into the ravines that surround the district.*

To address such risks, an effective and regular maintenance system involving local authorities and communities must be put in place. To this end, it is necessary to ensure:

(i) the monitoring of the works

(ii) the preservation of the rights of way identified by the PDD; (iii) the legal protection of flooded or flood-prone areas by giving them the status of a non aedificandi zone in the PUD (Detailed Urban Plan) of Pikine and Guédiawaye; and (iv) the reinforcement of the household waste and grey water management system (ADM, 2020, “Éradiquer durablement les inondations par un système de drainage innovant, Note de capitalisation du PROGEB”).

4.2.3 CONCLUSION

The implementation of the PDA Dakar 2025 in Pikine and Guédiawaye is minimal. With the drop of one to two metres in the water table following the PROGEP drainage works, there is an urgent need for a major collective sanitation programme in the area. Otherwise, the rainwater storage structures will store more putrid water and impact the living environment and health of the population.

At the same time, the local authorities should support the population in building individual sanitation facilities that meet the standards to reduce the risks of pollution and unhealthy living conditions. There is also an urgent need to build sludge disposal facilities in the suburbs. As an illustration of this need, the Niayes sludge storage facility was operating at an average of 400 m³/d, more than 6 times its design flow.

The major urban centres of the department of Rufisque (cities of Rufisque and Bargny) will also need to have an updated sanitation master plan (PDA). The drainage master plan does not cover the department of Rufisque where most of the urban growth and expansion is currently taking place, and where some of the communes that are hosting the urban growth are located in the Niayes ecosystem. This is an anomaly that needs to be corrected as soon as possible, especially as communes such as Bambilor are facing anarchic urbanisation due to the proliferation of irregular housing estates. In addition, an extension of PROGEP to the department of Rufisque should be planned.

5

PREVENTION AND ERADICATION OF INFORMAL SETTLEMENTS IN DAKAR

5.1 URBAN REORGANISATION IN DAKAR

According to UN-Habitat, **more than 60 per cent of African urban households, or 238 million people, live in slums** - and this population accounts for about 23 per cent of all households living in slums worldwide. In Senegal, **9,000 hectares of land are slums** (Centre for Affordable Housing Finance in Africa, 2020).

Accelerated urbanisation in Senegal, combined with a high population growth rate and insufficient housing supply, has resulted in the development of informal housing (precarious or informal buildings) in the cities. This represents 25% of urban areas and **occupies 35% of inhabited areas in Dakar** (UN-Habitat, 2012: 11 profiles of the housing sector in Senegal). In the Dakar region, the city of Pikine has the highest concentration of informal housing. The irregular city made up of all informal housing and irregular subdivisions, known as “irregular Pikine”, represents **43% of the area of the department of Pikine** (ADM, 2017 PUD Pikine Guédiawaye).

The study conducted in 2011 by the “Fondation Droit à la Ville” on the phenomenon of squatter settlements already estimated the surface area of the main urban areas concerned at 7,000 ha, including more than 4,000 ha in the Dakar conurbation. Most of the areas concerned are subject to land conflicts between administrative and traditional authorities. These areas are characterised by a lack of basic services (water, electricity, sanitation), by the precariousness of the occupation status and of the buildings and by the absence of economic activities. They are generally difficult to access, and some are unsuitable for housing because they are subject to flooding.

The unplanned areas receive water, sanitation or electricity later on, but also school and health facilities, due to the insufficiency (or absence) of land reserves dedicated to these facilities. Squatter settlements, coupled in the

case of the Dakar conurbation with the problem of urban mobility, increase the problems of unemployment, informally occupy areas that could have been reserved for the establishment of economic activities, and at the same time limit the driving effect of Dakar and the cities of the interior on the country's development. (World Bank 2015).

The proliferation of irregular land use, marked by insecure housing and land tenure, raises the issue of the solutions to be adopted to effectively curb the growth of urban areas. The sustained rate of urban growth leads to significant needs in terms of space to be urbanised and/or developed, housing to be built, infrastructure and social facilities, and urban services to be put in place, which largely exceeds the capacities of the State and the local authorities.

As a result, the population is faced with a huge shortage of serviced land on which to build their houses legally. Faced with the lack of a specific supply of developed plots and housing for the low-income segment of the population, informal settlements and informal settlements proliferate around the major urban centres (FDV, 2014, FDV Achievements, Unpublished document).

Informal settlements have the following common characteristics: (i) irregular land tenure, (ii) lack of prior levelling of the housing areas, (iii) lack of order of the houses and narrowness of the streets, (iv) non-existence or inadequacy of facilities and infrastructure (schools, dispensaries, water, electricity, sanitation, etc.) and (v) irregularity and low income of the inhabitants (UN-Habitat, 2012:11 profile of the housing sector in Senegal).

Urban reorganisation is part of the development operations provided for by the town planning code (Law No. 2008-43 of 20 August 2008 on the town planning code), which defines it as the development of undeveloped,

LAND RESTRUCTURING AND REGULARISATION OPERATIONS

Drawing up an inventory of the area to be restructured.

Raising awareness and identifying all the owners and tenants in the area.

Drawing up a list of owners in the district who can benefit from the land regularisation (in the form of a surface right concession).

Organising future plot holders into an EIG or cooperative, in order to ensure their active participation in the execution of the land restructuring and regularisation operations.

Designing a detailed urban plan.

Registering in the name of the State of all land in the national domain and expropriating for public utility any private land informally occupied within the perimeter of the zone.

Designing a restructuring plan with the effective engagement of the concerned populations through participatory planning workshops.

Determining the financial participation of the rightful owner of the plot. **(Decree No. 91-748 of 29 July 1991 organising the procedure for carrying out land restructuring and regularisation operations in unparcelled neighbourhoods within the boundaries of declared urban renewal areas).**

dilapidated or unhealthy areas that are characterised by an anarchic occupation of space with a notable lack of public facilities. The aim of the operation is to ensure a more rational use and organisation of the area and to improve the living environment of the population. The restructuring operation is subject to a restructuring plan which respects the provisions of the detailed urban plan. The procedure for carrying out restructuring operations is defined by decree (Article 33).

The State of Senegal created and recognised as being of public utility by decree 2000-996 of December 11, 2000, the Fondation Droit à la Ville (FDV) in order to provide itself with the necessary tools in this new policy of curative town planning. Decree 91.748 of July 21, 1991, regulating land restructuring and regularisation operations for in-

formal settlements, and Decree 96-386 of May 15, 1996, creating the Land Restructuring and Regularisation Fund (FORREF), were adopted in this sense. The creation of the Land Use Monitoring and Control Directorate (DSCOS) in 2005 is also part of the measures to prevent spontaneous occupation of urbanisation fronts, alongside the urban reorganisation of spontaneous neighbourhoods, which makes it possible to absorb the existing stock.

The Fondation Droit à la Ville (FDV), invested with a public service mission, is under the technical supervision of the Minister in charge of town planning and the financial supervision of the Minister of Economy and Finance. Its purpose is to carry out projects for the benefit of local authorities and the State and with the participation of the beneficiary populations:

1. The implementation of land restructuring and regularisation projects;
2. Delegated project management for the development and equipment of unparcelled districts;
3. The identification and study of new land restructuring and regularisation projects financed by the communes or other national or international partners.

The FDV began its operational activities in 2002 (FDV, 2014, op.cit).

The housing areas restructured by the Fondation Droit à la Ville (FDV) between **2002 and 2021** are equivalent to **630 ha** divided between:

1. Pikine Irrégulier Sud in Dakar: 200 ha, 75,000 inhabitants and 7087 plots/households, 53 ha resettlement area in Keur Massar, KFW funding of 8.705 million euros;
2. Pikine in Saint Louis: 180 ha, 65,000 inhabitants, 6,500 houses, financing of 16 million euros by the European Union (**CFAF 6,016,163,683 for Pikine in Saint Louis and CFAF 4,569,178,094 for Khouma in Richard Toll**) and CFAF 910 million by the State of Senegal (compensation for the expenses of the displaced or resettled houses);
3. Khouma in Richard Toll: 130 ha, 25,000 inhabitants and 2,000 houses;
4. Hann Bel Air Dakar: 90 ha financed by the European Union for CFAF 11 billion, the resettlement site for the 285 people affected acquired by the State for CFAF 2 billion;
5. Petit Mbao: 30 ha.

On the basis of the above-mentioned achievements, the FDV restructures an average of **33.16 ha per year (FDV, 2021)**.

According to FDV experts, the Hann Bel Air restructuring project, studied below, is the most successful of the FDV's initiatives, particularly because of better management of the wastewater sanitation component with the possibility of connecting households to the network (Balla Gueye, FDV, multi-stakeholder mini-workshop of Thursday 28 January 2021). The commune of Hann Bel-Air hosts the Tableau Ferraille neighbourhood created in 1959 (according to the participants in the land-use diagnosis). The origin of its population is linked to fishing, but also to iron and waste recycling. It is the project to clean up the Bay of Hann that is partly responsible for the implementation of the project to restructure and regularise the land of Hann Bel-Air.

5.1.1 MOTIVATIONS FOR THE LAND RESTRUCTURING AND REGULARISATION PROJECT

Tableau Ferraille, like the other districts of Hann pêcheur, is an irregular occupation of the national domain. Built spontaneously at the whim of the occupants, the district had, before the restructuring, only streets with a width of 2 to 3m. This irregular grid made it difficult for people to move around inside the district. The presence of these alleys, the density of the housing and the overcrowding of

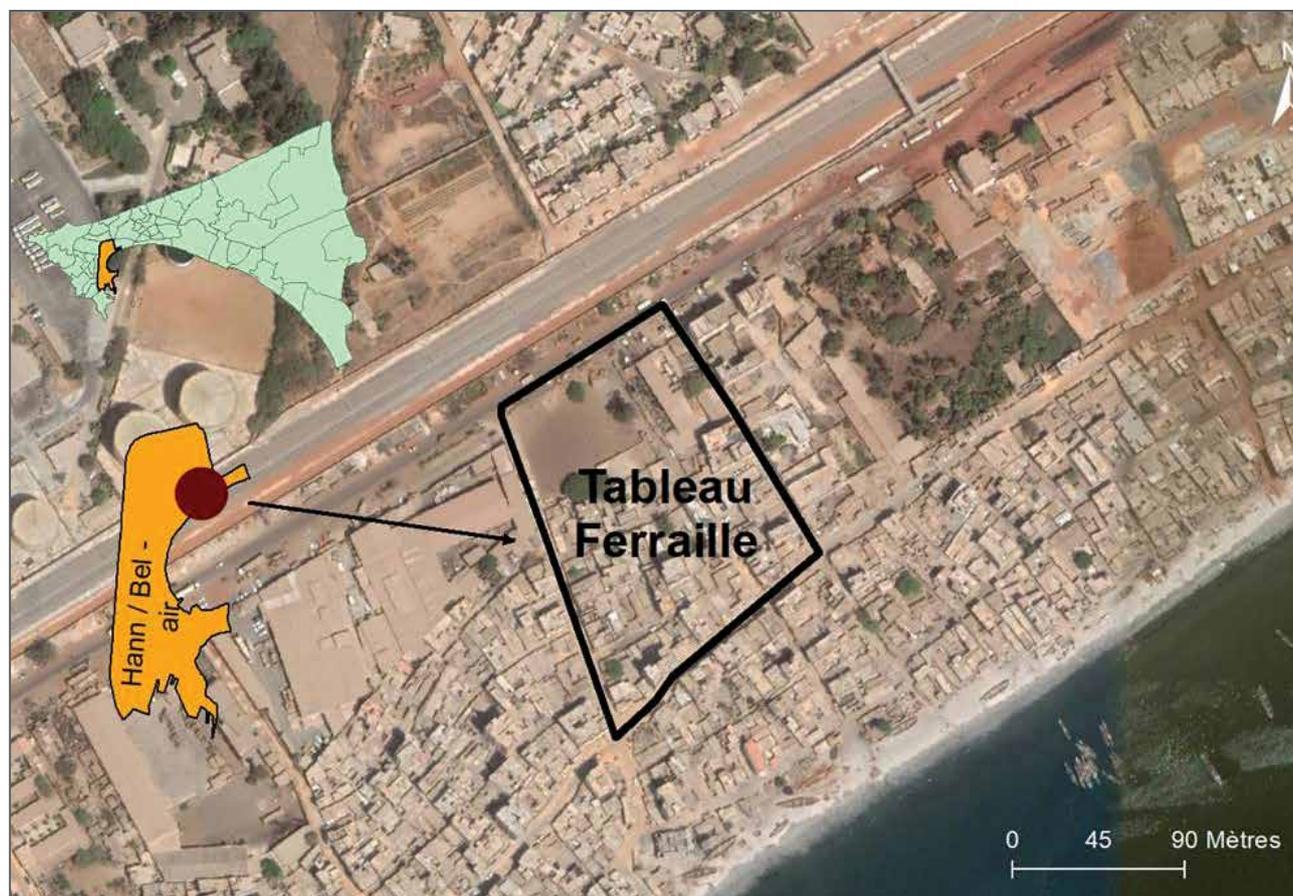
the neighbourhoods very early on concerned the authorities in the 1970s.

Indeed, a first restructuring project was proposed to the population to correct the irregular shape of the village of Yarakh. A participant in the focus group recalls that *“from the 1970s onwards, the leaders at that time had proposed a restructuring project. But our parents categorically rejected this proposal; they did not understand what was at stake in such a project, which proposed rehousing the dislodged inhabitants of Hann Maristes.”* This idea, which was abandoned very early on, resurfaced in the 1990s, with civil society organisations in the local authority taking up the cause.

They have been advocating for the subdivision of Hann Bel-Air following a violent fire that destroyed an entire family (see Box 1).

These demands were met by the state, which, through the Fondation Droit à la Ville (FDV), obtained funding from the European Union for a 14 billion euro restructuring and land regularisation project for the areas of Mbao (6 billion) and Yarakh (8 billion) in 2014.

FIGURE 9. MAP REFERENCE OF THE DISTRICT OF TABLEAU FERRAILLE IN THE COMMUNE OF HANN BEL AIR



Source: Google satellite, adapted by IAGU, 2021.

5.1.2 LAND RESTRUCTURING AND REGULARISATION: RELEVANCE AND BENEFIT OF THE PROJECT

The relevance of the restructuring and land regularisation project was validated by all the participants in the focus group of Tableau Ferraille. This project has structurally changed the face of the eight neighbourhoods concerned. Tableau Ferraille has benefited from the paving of two major roads and a sewage system. Of the 90 owners of houses that were cleared and rehoused, 11 are from the neighbourhood and 21 concessions were affected by the demolitions. All those affected by the compensation received up to 90 percent of the expected amount.

EFFECTS OF URBAN REORGANISATION OPERATIONS IN THE TABLEAU FERRAILLE DISTRICT

“Reorganisation has had many positive effects on the area. It has helped to beautify the area. We have had more space in the neighbourhood. We have also had a main road and ten penetrating roads defined by the people themselves. All these roads have been paved and reforested. There are also facilities: public benches, lighting. With the lifting of some houses, the owners next door have enjoyed more space; some have even built shops in their houses, which they rent for between CFAF 50,000 and 60,000. Which is a godsend for these householders.”

Source: Focus Group Interview

“The 90 house owners who were evicted by the project have been rehoused on a well-developed site. They are now in better conditions than they were before. They have also been compensated. However, 10% of their outstanding balance has still not been paid.” (Focus Group Tableau Ferraille).

At the level of the neighbourhood, the urban wandering revealed changes in terms of housing. Indeed, one house out of three has been renovated or has undergone renovation and 14 new shops have opened on the main roads. According to the population, the restructuring is a great opportunity for modernisation and development of the local economy through the enhancement of the habitat (see box N°2 below).

However, not everything is perfect according to the population, there remain points to be improved in the process, in the execution and especially in the sustainability of the project's actions.

ORIGIN OF THE PLEA FOR REORGANISATION THE TABLEAU FERRAILLE DISTRICT

“In 1999-2000, a house was involved in a fire of rare violence. The fire consumed all the residents of the house because they could not be helped. Access to the house was impossible; the fire brigade could not enter the neighbourhood, and we did not have the means to put out the fire. This tragedy intensified the demands for housing by the many associations in the neighbourhood. It was from that moment on that reorganisation became the primary concern of the inhabitants of Yarakh.”

Source: Focus group interview Tableau Ferraille

There is no set process for restructuring and each operation remains a case specific to a community. The people of Tableau Ferraille have identified the weak points in the following box.

These points raised by the population do not question the significantly positive impact of the project, but they should be taken into account in the development of urban reorganisation approaches in Senegal.

The PUD of Pikine Guédiawaye provides for, among the 36 development and equipment projects recommended (in 11 sectors), the restructuring and regularisation of **2,186.11 ha (i.e. approximately 22 km²)** in 12 communes in Pikine, Guédiawaye and in traditional village-type settlements for an amount of **CFAF 275 billion** (i.e. 81.2% of the total amount of the developments recommended by the PUD) **for a completion period of 24 months** (ADM 2017, PUD Pikine Guédiawaye). As a reminder, the departments of Pikine and Guédiawaye cover a gross area of 92.5 km² and 13.3 km² respectively, **making a total area of 105.8 km²** (ADM, 2017 PUD Pikine Guédiawaye).

At the current pace of operations to restructure informal settlements implemented by the FDV (33.16 ha per year), it will take 66 years to restructure the informal neighbourhoods in the suburbs of Dakar (Pikine and Guédiawaye), not 24 months (as mentioned in the PUD), and this is without taking into account the growth of informal housing in the Dakar region and the situation in the department of Rufisque, which hosts the majority of urban extensions today. The challenge is therefore immense and requires the deployment of all relevant means to avoid increasing the stock of informal settlements.

To this end, promoting access to public housing for low-income populations is imperative to curb the expansion of irregular and unhealthy housing in the Dakar region.

In terms of communication and awareness-raising: the strategies adopted are out of step with the social realities, values and beliefs of the people of Yarakh, according to the focus group participants. According to their perception, the firm hired to take charge of this aspect has failed to provide the communication required for this type of project. The communication activities were very poor and the people did not feel that the neighbourhood councils and local civil society organisations were involved. Efforts should have been made to communicate about the project, but also to prepare the population to receive and take ownership of the works carried out.

The slowness of the land regularisation process: the process of land regularisation is very slow and the populations underline the lack of visibility on the completion of the files. These delays seem incomprehensible, especially since the project is supported by the State through the Fondation Droit à la Ville.

Difficulties in recovering the costs of land regularisation: the establishment of three Economic Interest Groups (EIGs) at the start of the project has not made it possible to overcome the problems of recovering the costs of land regularisation. The main *“mission of these EIGs is to assist the inhabitants in regularising their property in order to obtain a surface right concession. To do this, households had to pay a contribution of CFAF 3,000 per m² per year for a period of five years”*. This was to enable low-income households to contribute at their own pace and thus regularise their property. But two of the three EIGs are lagging behind in their contributions.

The elimination of certain streets that had been validated by the project: in Tableau Ferraille, two important streets that were initially selected were eliminated by the project. According to the population, these streets are a priority for the district and their elimination is a wrong note for the project. Fortunately, the municipality has made a commitment to pave these alleys in the 2021 budget.

5.2 ACCESS TO PUBLIC HOUSING

In almost all African countries, the formal and private construction sector does not provide affordable housing for the majority of the population. Because of the population's unmet demand due to unaffordable supply, these households meet their housing needs incrementally and independently, often in slum conditions (Centre for Affordable Housing Finance in Africa, 2020).

Access to affordable housing depends on three factors: **household income, house price and financing conditions**. In Africa, the confluence of low urban household incomes, high mortgage interest rates and short-term loans (if any) or no finance at all results in very low access to housing.

In Senegal, **only 1.5% of adults held a mortgage product in 2015**. Although the financial market is dynamic, access to finance remains problematic for a large part of the Senegalese population, especially for low-income households.

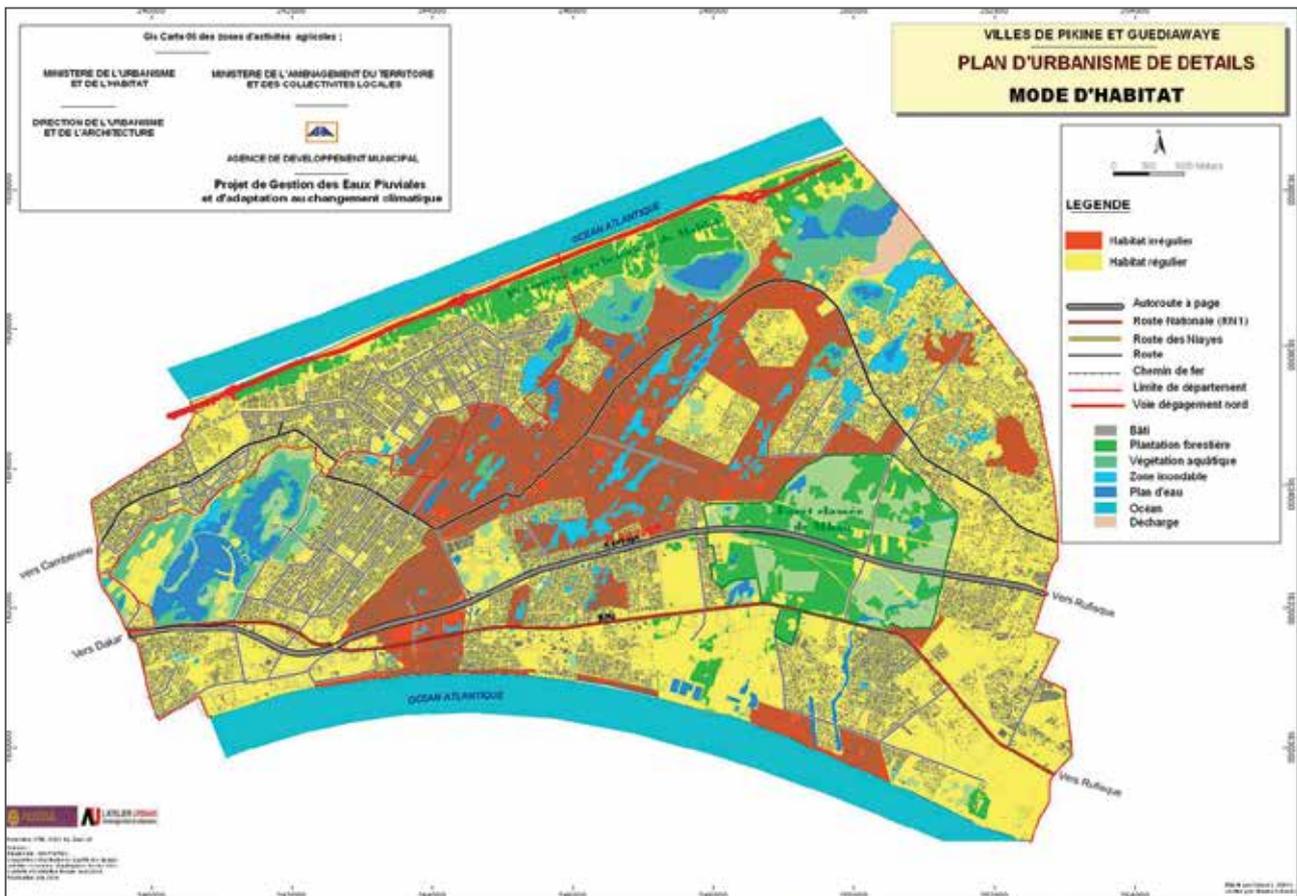
While housing prices in Senegal depend on plan, type and location, they generally exceed CFAF 10 million. For example, the cheapest **public housing provided by the state under the “one family-one roof” project is delivered at CFAF 14.5 million**.

The soaring price of housing in Senegal is the result of a long process of unprecedented speculation combined with the scarcity of land as well as the high cost of land and building materials. The high price of houses is partly the result of the boom in building land. By way of illustration, the price of a square meter of land was multiplied by almost 2.5 between 1994 and 2000, then by more than 2 between 2000 and 2009. **Therefore, tenants are in the majority in Dakar, where they represent 52% of households (compared to only 23% at the national level)**.

The annual need for new housing is estimated at 10,000 in Dakar, to be built on land that is increasingly far from the centre to the east of Pikine, in the communes of Diamniadio, Yenne in the south, Sangalkam, Tivaouane Peulh Jaxaay, and Bambilor further north. Due to the scarcity of land and the speculative nature of rents, housing has become the second most important household expenditure in Dakar and inland cities after food (World Bank 2015).

In 2013, the housing deficit was estimated at 322,000 units nationwide and 158,000 units in Dakar, **while the supply hardly exceeded 5,000 units per year**. (Orientation law n° 2016-31 on public housing).

The two public developers, **SICAP and SN HLM**, which have been operating since independence, have produced

FIGURE 10. DETAILED URBAN PLAN OF PIKINE & GUEDIAWAYE: MODE OF HABITAT

Source: MRUHCV, MGLDAT & ADM, 2017, Detailed Urban Plan of Pikine & Guediawaye

an average of **201 and 596 housing units** per year respectively. In fact, SICAP has produced 13,260 housing units, including 5,825 for simple rental and 7,435 for lease-purchase, since its creation in 1950 until 2016. SN HLM, on the other hand, managed to produce some 15,500 houses between 1987 and 2013 (Centre for Affordable Housing Finance in Africa, 2020). Their current production represents less than 1% of the annual needs of the Dakar region. **As for private developers, they have been producing about 1,000 houses per year in Dakar for several years.** These homes are only accessible to a small proportion of the population (World Bank 2015).

Self-construction is the main method of acquiring housing in urban areas: **71.5% in Dakar** and 76.7% at the national urban level. Access to ownership via a property developer or a cooperative is negligible, except in the Dakar region (6.2% and 3.7% respectively). Furthermore, renting, which is a more common tenure status in urban areas (35.5% of urban households while 89.3% of rural households own their dwelling), is in the majority in **Dakar (the only region in the country), where 46.0% of households are renters** compared to 37.1% owners.

This means that the challenge of producing and accessing affordable housing must be addressed (ANSD 2014 RG-PHAE 2013)

The context of promiscuity prevailing in our cities also justifies the search for solutions in terms of public housing. Indeed, 27.8% of urban households in Senegal live in overcrowded conditions (three or more people in one room).

To reduce the deficit in affordable housing, Senegal adopted the Public Housing Guidance Law n° 2016-31 of November 8, 2016. Its purpose is to create an institutional framework to promote the development of public housing. It attempts to address the increase in housing demand in Dakar at a time when supply remains low.

As defined in the orientation law, public housing is an economic housing which presents a good quality-price ratio, carried out in a well-developed urban environment, equipped and accessible to the greatest number. Such housing is made accessible, either through rental or home ownership, thanks to the support of the public authorities. It is dedicated to first-time buyers with low income.

Its technical characteristics, equipment and cost are set by decree (Law n° 2016-31 on public housing).

Under the 2014-2018 Priority Action Plan (PAP) of Plan Senegal Emergent, a programme for the accelerated construction of public housing units is to be implemented. This initiative aims to deliver between 10,000 and 15,000 homes per year (Senegal PSE, 2014). To this end, the Government relies on three levers: (i) support for household solvency; (ii) increased supply by developers; (iii) and strong promotion of land development (creation of new development centres).

The Plan Senegal Emergent Operational Monitoring Office (BOS), in its report on the implementation of the flagship projects and reforms of the PES 2014 - 2018, notes that 28,898 homes were actually built between 2014 and 2018, including 9,897 public housing units and 19,001 serviced plots.

Still as part of facilitating access to affordable housing, the Government of Senegal has undertaken to build **100,000 public housing units between 2019 and 2024 under the Zero Slums Project (PROZEBID)** (Centre for Affordable Housing Finance in Africa, 2020). Through this 100,000 housing project, the issue accelerating the construction and delivery of affordable housing units in large numbers is addressed. The State of Senegal is seeking to eradicate slums by 2035 and to accelerate the supply of decent and affordable homes.

The identified success factors of such project include: (i) securing lands through titling ; (ii) carrying out quality developments for decent housing without recourse to state budget (through land development because the most important input is land and if it is available and developed, the cost of housing falls substantially); (iii) providing innovative financing consisting of guarantee funds, secondary mortgage markets; and (iv) promoting the building sector at local and regional levels.

To secure more land resources in addition to public land in urban centres, the project is targeting land resources controlled by local authorities.

Furthermore, to meet the challenge of developing and equipping the sites intended for the "100,000 housing units" project, the Government has created the Société d'aménagement foncier et de rénovation urbaine (SAFRU SA), a public limited company with a majority public shareholding, whose purpose is "to develop and market affordable public housing units".

On the pilot site of the urban centre of Daga-Kholpa, for example, where 40,000 public housing units will be built

on a 600 ha land (while 600 ha will be reserved for medium and high standard housing), SAFRU will be in charge of development works estimated at CFAF 3.5 million per unit. These works consist of the construction of the primary networks (water, electricity and sanitation) and the main roads. To do this, SAFRU, inspired by successful experiences elsewhere (Morocco in particular), will adopt an innovative financing model based on land development in order to obtain resources to fund the development works.

However, the effectiveness of previous public housing initiatives, such as the "one family, one roof" and "accelerated delivery of public housing units" programmes under the PSE, should be questioned. A deep analysis of these initiatives should be carried out to answer the following questions:

What has been achieved? What did not work? What are the lessons learnt? It is good to look at successful models experienced elsewhere, but it is even better to identify the small achievements of the sector in Senegal and in particular to understand the causes of our failures. For example, have we sufficiently evaluated SCAT-URBAM, which preceded SAFRU SA in the development of housing sites and whose objective was to contribute to the self-construction policy through an annual programme of 1,800 serviced plots of land sold at below market prices?

Several other questions are still pending regarding the "100,000 housing" project:

1. How could the informal sector (trade, construction workers, craftsmen, farmers), representing 80 to 90% of the labour force, justify its level of income (CFAF 450,000 threshold) in order to benefit from this programme?
2. How to take into account the fact that 85% of households adopt self-construction?
3. What are the project's mechanisms for avoiding urban spread and promoting diversity, for example through the verticalization of housing?
4. How are the non-economic dimensions of public housing taken into account, in particular in order to integrate the evolutionary, progressive and incremental aspects that characterise the dominant residential strategy?

Our analysis reveals that public housing production strategies must be plural and inclusive. It is about:

1. producing serviced and equipped plots of land on a large scale for supervised self-construction (use of standard architectural and reinforced concrete plans,

PERCEPTIONS OF THE INHBITANTS OF EXTENSION DISTRICTS ABOUT THE 100,000 HOUSING PROGRAMME

When discussing the 100,000 public housing programme, participants in the focus group in **Bambilor 3** unanimously recognised the relevance of this initiative. However, they all remain sceptical about the access of vulnerable groups and low-income families to this programme. In the opinion of some participants, communication about this programme needs to be improved, as most of the information is disseminated through social networks which are not necessarily used by everyone. One participant said that he did not have *“enough information on the project (...), does not know the ins and outs of the 100,000 housing programme”*. Moreover, for him, *“even if there was enough information on the issue, we already know who will get the houses. Politicians will certainly give the houses to their militants”*.

In Boune, a participant in the focus group organised as part of the participatory territorial diagnosis is sceptical about the 100,000 housing programme. She fears the diversion of objectives and political clientelism for this very laudable programme, because she says: *“We all know that the main issue with our politicians is the lack of transparency. They could divert these houses for the benefit of their militants. In order to remove all these suspicions, the population must be kept informed at every stage of the project.”*

The inhabitants of **Déni Malick Guèye** say they have *“heard about it vaguely”*. Some of them express distrust of this ambitious objective, believing that they know that: *“...in advance, these houses are not intended for us”*. For others, by way of compensation for the land taken over by the urban centre, *“the State could grant a quota to the natives of Déni Malick Guèye”* who say that they should *“be among the first to be served, because they took all the land that was supposed to be used to extend the village”*.

They maintain that they cannot access high-standard housing in the urban centre. According to them, the 100,000 housing programme is not accessible to everyone, especially those who used to work in agriculture and who have lost their land, the main factor of production. A woman stated that: *“Even if we had the possibility of benefiting from it, how are we going to meet the financial conditions? By plundering our land, they have also taken away our livelihoods.”*

issuance of permits to builders, use of control offices and capacity building) as part of the public housing programme;

2. producing rental housing units under the project, including in large urban centres where the demand for this type of housing is high, especially among young people
3. supporting the communes in the development and allocation of administrative housing subdivisions based on transparency;
4. supporting public and private developers and cooperatives in accessing land and building multi-storey buildings;
5. supporting microfinance institutions in granting short-term credits for purchasing housing components and construction materials
6. implementing the PUDs targeting the territories and extension zones as a priority;
7. allocating minimum quotas of public housing for

specific groups, in particular workers in the informal sector (more than 80% of the country labour force), workers living with a disability and women heads of household (in urban areas, 29.6% of households are headed by women, ANSD 2014).

There is also a need to: (a) evaluate the previous “One Family, One Roof” projects, the PSE component on accelerated construction of public housing units; (b) assess and document the Jaxaay, Tawfekh Yakaar and Apix relocation experiences; (c) set up a robust project team with experienced staff recruited through competition and carry out in-depth baseline studies; (d) ensure that all the sites selected are in localities where there is a PDU and a PUD; (e) limit the scope of public developers (SN-HLM and SICAP) to vertical housing.

Finally, to ensure that the public housing produced can benefit those entitled to it, it is imperative to regularly

A CITIZENS' INITIATIVE TO REGISTER ON THE DIGITAL PLATFORM OF THE 100,000 HOUSING PROGRAMME IN BOUNE

Information on the 100,000 public housing project has spread like wildfire in the Boune village district. Political actors, aware of the State's initiative to promote public housing, have communicated widely on this programme, reports a municipal councillor. All the socio-cultural and political activities were used to raise awareness about the use of the digital registration platform put online by the Ministry of Urban Planning, Housing and Public Hygiene. Moreover, some political cells have *"started to register people on the digital platform for free"*. This programme, presented in its best light, has raised the hopes of the people of Boune to have free access to the modern housing of their choice, which has greatly increased the demand for registration on the platform. Faced with this strong demand for registration, young people from the neighbourhood, aware of the fact that most people do not master the digital platform, offered their support service for the submission of online applications in return for the payment of a connection fee of CFAF 500 per person.

"There were long queues forming in the neighbourhood. The sight of the crowds aroused the curiosity of the people who use this route. When they were told that it was a registration for housing, they were eager to come and register as well. More than 10,000 people were registered. Everyone had a registration number. Thanks to this surge of solidarity, young people were also able to earn money, sometimes up to CFAF 50,000 a day," said the youth council representative during the focus group.

The lack of information on the progress of the programme has created doubts among the population, who say they have no idea what will happen to their files. A municipal councillor attending the meeting said: *"Many of the people registered also questioned me about this, but I don't know what to tell them. This is one of the shortcomings of the project. The platform should also take this issue into account: allow registrants to follow up on their files"* (focus group Boune village).

publish the list of beneficiaries with their references (profession, address, national identity card number, type of housing obtained and location).

In addition, beyond affordable housing, particular emphasis should also be placed on access to workspaces for informal stakeholders (especially craftsmen and traders) in these urban development programmes. The working conditions and difficulties of access to space that artisans face are perfectly perceptible through the following words of the President of the Craftsmen's Association of Guédiawaye: *"An extraordinary occupation of space by craftsmen is noted in the informal districts. Generally, we*

are cramped in our workshops because they are not built according to the craftsmen's needs. We often work in the street and thus contribute to the congestion of the public highway. In addition, our workshops are in residential areas, and we are very unwelcome because of the noise caused by our machines. In addition, this poses a safety problem, especially with the traffic of children. But it is the responsibility of the state to develop spaces dedicated to the craft industry. The informal sector has the same difficulties in residential areas. The state must promote the development of industrial zones because they are as relevant as housing. Today you can get up one day and buy a house, whereas it is very difficult to have a workshop".

6

RECOMMENDATIONS FOR INCLUSIVE AND EQUITABLE URBAN DEVELOPEMENT OF DAKAR

Access to public housing: (i) granting a quota to informal workers, women and people living with disabilities; (ii) not just registering on a digital platform for public housing, but developing approaches towards priority target groups (traders' associations, construction workers, craftsmen, women's associations, disabled workers) and keeping them updated on the progress of the project (iii) developing and servicing plots of land in large numbers through SAFRU SA and based on a land valuation mechanism granting priority to informal workers' cooperatives and low-income individuals.

Urban centres: (i) not developing the urban centre of Lac Rose alone but integrating the peripheral villages, their identities as well as the agricultural perimeters as agro-ecological spaces of the centres; (ii) producing the detailed urban plan before occupation (iii) by developing the centre, building facilities in the bordering territories to ensure land-use continuity; (iv) allowing the populations of Diamniadio (Malick Gueye) and Bargny to benefit from a quota in the local public housing programme; (v) reserving an area of 20 to 30 ha in each district young people and women from neighbouring villages active in agroecology.

Town planning: (i) designing a PUD for the 4 Cs (Bambilor, Sangalcam, Tivaouane peulh and Jaxaay); (ii) setting up inclusive monitoring and evaluation mechanisms for the implementation of the PDU and the PUD; (iii) making land-use plans available at the appropriate scales in town halls, prefectures and other public places; (iv) involving neighbouring communities in the preservation of vulnerable *non aedificandi* zones; and (v) having the cities and the MULHP co-sponsor the preparation of the PDU and PUD.

Mobility: (i) support cities in drawing up pedestrian transport plans for greater ecological (no emissions), health and social (sociability and solidarity) benefits; (ii) ensure that Dem Dikk serves the suburbs as a priority and increase the number of AFTU minibus routes, giving priority to the acquisition of low-polluting vehicles; (iii) verticalize housing extension projects, promote mixed-use land and multipurpose land-use planning.

Sanitation: (i) implement the Master Plan for the Management of Liquid Waste in Pikine and Guédiawaye; (ii) complete the drainage master plan for the department of Rufisque and extend its implementation through the PROGEP; (iii) hold local authorities accountable for independent sanitation by: licensing emptying service providers; providing technical assistance to households in the building of suitable systems (septic tanks, watertight tanks); and investing in emptying sludge and semi-collective systems.

Urban reorganisation: (i) implement a large-scale programme to reorganise the informal settlements of Pikine and Guédiawaye; (ii) support the cities in establishing local police stations to assist the DSCOS in monitoring land use.

Local governance in Dakar: set up an intercommunal body (such as the Dakar urban community) responsible for urban planning (urban plans, renovation and reorganisation, ZACs), mobility, intercommunal roads (and public lighting), waste management, etc., whose resources will partly come from the VAT collected in the region. It will also provide technical guidance to CETUD and the DGPU.

7

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