



Water and Sanitation in the Neighborhood of Guet Ndar-Senegal

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Abstract—The various political regimes that have succeeded Senegal have initiated different projects, programs, strategies and plans in several sectors including "Plan Senegal Emergent (PSE)" which is the latest to place Senegal in ramps of the emergence or development. The results were more or less satisfactory. Therefore, it seems important, through this study, to mention an important part of water and sanitation in our human settlements: neighborhoods without adequate treatment, may further delay the long awaited emergence/development of our country.

One of the major events in recent decades in Senegal is Guet Ndar, a neighborhood located in the Municipality of Saint-Louis in northern Senegal, is a perfect illustration with a high concentration of the population in urban areas consecutive high rate of natural increase.

The physical constraints to the expansion of the district, it is densely populated over the years both in terms of habitat and population, reaching a population of more than 16,000 inhabitants on a 16.9 hectares [1], making it one of the most densely populated areas of Senegal. In these conditions, access to water and sanitation for that district of populations is complicated by the current lack of planned and operational solution.

The town of Saint-Louis, in this context of the policy in support of the people's problems, is considering a number of projects to improve the environment and living conditions of the population.

Guet Ndar is characterized by: narrow streets, promiscuity, lack or weakness of networks (water, electricity, telephone, sanitation, and roads), amenities (schools, health, socio-educational, worship, etc.) and the lack of property titles. Eventually, the living conditions in these areas will be significantly improved with the resolution of the problem of water and sanitation, which are the necessities.

Yet the challenge of the emergence and sustainable development of Guet Ndar will be difficult to meet if the area is not properly sanitized. It constitutes a real bottleneck for the City of St. Louis.

In this respect, in a context where the emergence is brandished as, lack of sanitation should not find its place in municipalities and cities of Senegal leading to be the locomotive of growth. This study provides some possible solutions to create better living conditions for the residents of Guet Ndar and could assist local authorities in their missions.

Keywords— sanitation, development, decentralization, waste water

I. INTRODUCTION

In September 2000, 189 countries of the United Nations adopted the millennium declaration, which was embodied in the definition of the eight goals to be achieved by 2015 [2]. These eight goals as the millennium development goals (MDG) and the targets and indicators associated with it.

It is within this framework that the Republic of Senegal, in order to achieve this objective in the water and sanitation sector, has put in place a national strategy based on a program approach. For example, the Drinking Water and Millennium Sanitation Program (DWMSP) was created in 2005, a national program that follows two sectorial programs, the Water Sectorial Project (WSP) and the Long Term Water Project (LTWP).

Despite its geographical position centered on the Sudano-Sahelian zone, Senegal has sufficient water resources to feed the population. The diversity of water resources offers exploitation opportunities ranging from surface water catchment to the use of boreholes in areas lacking superficial water resources.

The governance of water and sanitation in Senegal is shared between several actors that evolve at the national, regional and local levels. These actors belong to the State (ministries, central and decentralized departments, projects and programs), development partners, local authorities, civil society and the private sectors. Various national and regional consultative frameworks attempt to promote synergy between actions.

From the regulatory point of view, the sector has a variety of texts. A notable advance is made with the Law on the Public Service of Drinking Water and Sanitation, which makes it possible to unify all the reforms in a single piece of legislation and organizes the public service of drinking water and sanitation, collective sanitation in urban and rural areas. The new Sanitation Code (currently being promulgated) will provide the specific regulatory tool needed for sectorial steering.

On the progress made in urban water supply, the rate of access to drinking water by private branch was slightly ahead of the intermediate targets during 2005-2008. On the progress made in urban sanitation, there was a positive evolution of the rate of access to sanitation in urban areas between 2005 and 2007 thanks to the access subsidy programs initiated by NSOS (National Sanitation Office of Senegal) in the context of operations in support of reform in the subsector, including the PIPUN (Program for the Improvement of Peri-Urban Neighborhoods) and social service programs.

On the perception of users on access to drinking water, the users are satisfied with the continuity of the service of the running water, but also with the access to the service with positive impacts on their households. Finally, the cost of home connections and the frequency of billing per bimetal are available. The main obstacles to progress in access to water concern insufficient financial capacity for the connection and insufficient incomes to pay bills but also the lack of a network in the districts, in particular those situated on the outskirts of municipalities, And insufficient information about social connections programs.

According to the habitants, there is a low level of information on existing programs and opportunities. The traditional latrines predominate and the main modes of evacuation of the domestic waters remain the street and the courtyard. There is very little use of the sewer system. The main difficulties in terms of sanitation are: the absence of garbage collection, the absence of an evacuation network, the absence of a public deposit and the absence of latrine pits.

On the reforms of the sector and the role of the actors, progress towards the Millennium Goals on water and sanitation is the result of diversified interventions by the government and civil society actors. The implementation of the Millennium Drinking Water and Sanitation Program has resulted in the condensation of water and sanitation needs, the confidence of donors.

A. Background to the study

Access to drinking water and sanitation services is one of the main priorities of the Republic of Senegal. The Government's goal in achieving the MDGs is to reduce the proportion of people without access to safe drinking water and adequate sanitation. Already in 2005 a summary assessment of the country's path towards the 2015 target are set for many of the MDGs, reveals that there is a significant gap between the current situation and the targets to be achieved. This evaluation reveals that Senegal can still be present at the rendezvous of the great nations with the development of appropriate tools to achieve the MDGs (structural reforms, adaptation of the institutional, organizational and financial framework). However, substantial efforts will have to be made, particularly in water governance and its associated effects on the mobilization and capitalization of human, technical and financial resources for water and sanitation.

Despite the encouraging results in the field of access to drinking water and sanitation, MDWSP's 2007 annual review highlighted some difficulties, including the lack of coordination and harmonization of actors involved in the sectors [3].

Moreover, the evolution of the legal framework reveals that Senegal has resolutely embarked on the process of decentralization. In addition, the country has a dynamic and enterprising civil society and private sector that can accompany public administration in achieving these objectives. One of the recent reports from the United Nations reports that 70% of the MDGs will be delivered locally in a strengthened public-private partnership, demonstrating the central role and importance of local governments [4].

Since 1996, the State of Senegal has embarked on a new dynamic, within the framework of its decentralization policy. It assigns local authorities responsibility for designing, conducting development and development projects and facilitating local development through the nine areas of competence transferred. Thus, we note that the sanitation that constitutes a real headache of the African cities is not a transferred competence.

The municipality of Saint Louis, with the support of its partners, the cooperation of the Nord pas de Calais and in partnership with St. Louis and its region, had begun well before this date, experience, institutional strengthening, which resulted in the establishment in 1994 of Coordination, Information and Outreach Activities in Local Development (CIOALD). The task of this unit was to carry out studies and provide support and advice, while ensuring coherence of interventions in the communal area.

In February 2000, CIOALD was transformed into a Community Development Agency in order to maintain its achievements and broaden its competence in many other fields. The Community Development Agency is an institution in support of the communal project management. It engages in a dynamic of institutional strengthening and thus ensures a mission of studies, advice, monitoring and coherence of actions and projects at the communal level.

The Municipality of Saint-Louis, within the framework of its policy of managing the concerns of the populations, envisages a number of projects, including the improvement of the neighborhood of Guet-Ndar, aimed at improving the environment and living conditions of the population.

Access to sanitation for the neighborhood's inhabitants is complex, in the absence of a planned and operational solution. This difficult access to sanitation has serious health and environmental consequences: cholera epidemics, high prevalence of oro-fecal diseases, discharge of wastewater and untreated excreta into the near water table in the Ocean and the river, Etc. The high population density and the environmental fragility of the area exacerbate these negative consequences.

In view of this persistent situation, and within the framework of its policy of dealing with the population's concerns, the municipality of Saint-Louis is considering a number of projects, including the improvement of the Guet Ndar neighborhood, the living conditions of the populations. This area has been the subject of several studies due to its specificity with a high density (about 2,200 inhabitants per km², which is almost 50 times the regional average) and buildings that ignore the standards of urban planning [5].

While in recent history there have been problems of poverty, land use, housing and infrastructure in cities, the extent and intensity of urban problems, the African countries in the process of development, including Senegal, are the phenomena which arise with great acuity.

These difficulties result, to a large extent from population growth, but not always; the severe economic shortage or the uncertainty of the resources likely to be devoted to investments, in particular those for basic urban services, social

housing and the development of the living environment. There is also the fact that, for a long time, development strategies have focused on rural development according to interventionist logic of most of the States that had just reached Independence. Unfortunately, in many cases this approach to development by the rural sector has not produced the expected results and urban centers have been the first victims of these poor performances.

In Senegal, the state has attempted to restructure neighborhoods' housing for years without achieving fixed objectives. In Guet Ndar, for example, the population believes that it has not always been associated with projects on the neighborhood or the rejection and failure of some.

Poverty in Guet Ndar in basic infrastructure is extreme: deficient water drainage system, poor road conditions, insufficient electrical installations, insufficient communication equipment, equipment and equipment in health posts. The riverbank and the suburban beach are invaded by rubbish. The neighborhood has no public edicule, so that the beach is dotted with excrement. The fecal peril, the cholera, the pollution, generally reaches a Guet Ndar a degree difficult to describe. All streets are badly contaminated especially by small livestock (sheep, goats), which wander off the concessions. With the crowding of the population in addition to the under-equipment that characterizes him, Guet Ndar is not only very unhealthy, but he suffocates. Due to lack of space, it has for a long time absorbed the growth of its population by its internal densification in each concession. But since 1970 at least, it has reached its limits; there is no more space available in the neighborhood. On the seacoast, the beach keeps shrinking: its width, which used to reach 150 to 200 meters in 1856, became only about twenty meters in 2003 [6].

The galloping population growth led to the lack of hygiene of the inhabitants and also to the insalubrity of the places of habitation and landing of product of the fishery.

B. Objectives of the study

The general objective of this study is to reflect the improvement of the living conditions of the population and the image of the neighborhood Guet Ndar, by solving the problem so much criticized by the inhabitants of water and sanitation in the zone. Water and sanitation depend on many actors (Ministries, State Services, Local Communities, etc.), each with its role to play but also to obey the laws and codes at the national level. It will therefore be:

- to place Guet Ndar in its communal and geographical environment
- make a diagnosis of the state of water and sanitation in the neighborhood
- to propose solutions for a healthier environment and better living conditions for the populations of Guet Ndar.

C. Hypothesis

One of the major phenomena observed in recent decades in Senegal is the urban "boom" with a high concentration of population in urban agglomerations following the high rate of natural increase. Guet Ndar is no exception. In the absence of

an adequate town planning policy, the district could not be well managed and contained in terms of spatial planning. Considered as precarious with: the narrowness of its streets, the promiscuity, the absence or weakness of the networks (water, electricity, telephone, sanitation, roads,) and equipment (school, sanitary, socio-educational), Guet Ndar deserves special attention. Looking at this urban environment marked by multiple deficits, it is easy to understand that no sustainable development initiative can prosper with the absence of a minimum of decent living conditions in this densely populated neighborhood.

D. Methodology

The methodology of this study is mainly based on a literature review and surveys across the national territory. This is not an evaluation of national or local policies even less an evaluation of the programs. Rather, it is a broad compendium of meaningful data to understand sanitation processes. To achieve this, we have a review of the literature on the process of consolidation at the national level, to conduct meetings with district council, municipal services, sanitation, etc.

II. DISCUSSIONS

Remediation of Guet Ndar neighborhood demand solutions at the institutional level (including the reorganization of the sector, which seems to have reached an inconsistency of various kinds and the establishment of an effective funding mechanism will be the keystone of this issue, but also technically with immediate application solutions or greener characters by integrating environmental protection.

Mastering the sanitation problem in Guet Ndar imperatively require a reorganization of a part of daily interventions and a correction to the level of other institutions.

The sanitation sector needs firstly to be reorganized because it is marked by an inconsistency in policies that result in a lack of coordination of the different players and also for capacity building execution of NSOS which must fully play its role as central body in charge of sanitation in all these aspects.

The sanitation sector is like an area without marks where the actors repeat their actions to solve the same problem; this is the nightmare image that can be made of the current situation of sanitation in general and Guet Ndar in particular. The question of the burden of this sector comes up very often in the debates because there is a duplication of action and field programs conducted by different actors.

The management of storm water drainage sector is one of the missions of the Department of Prevention, Public Hygiene and Sanitation. NSOS, which operates the urban infrastructure, has made the sovereign role of coordinating the multiple interventions in the sector. It must be associated at all stages from conception to implementation of projects so that monitoring and control are carried out according to established standards. The fact is that this is not always respected by the different actors and it is difficult to limit the rainwater drainage mission in a single state structure. Among the reasons, there is the fact that today the sanitation needs are huge and different

structures in the project have rainwater drainage component that is their inseparable (road project, subdivision, property development, etc.)

Hence the need to create synergies with the coordination of the efforts of these various actors for the effective management of sanitation at the same time will allow the public to Guet ndar have better living conditions.

In the light of the new policy, the consolidation of Senegal, at the meeting of experts in 2006 based on an investment plan for the achievement of the Millennium Development Goals, the issue of capacity-building for the implementation of NSOS raised as the cornerstone for the resolution of any program.

Hosted by the office of sanitation, the meeting made it possible to measure the weaknesses of this structure since it is difficult to collect fees and other charges for these services. The use of wastewater in open by local authorities is a good example of that, because they have to pay the delivery to NSOS as delegate, but unfortunately the communities do not honor their commitments to the few of them.

The problem of sanitation can prosper only if the capacity of the NSOS are significantly increased, and this will increase in priority to this sector and, above all, the strong desire to create a living environment more friendly and respectful of the basic standards of hygiene and sanitation. The sanitation sector needs to be strengthened for better stability because it is characterized by eternal changes and the reforms contributing to it are weakening.

The institutional framework of the liquid sanitation sector has undergone several reforms leading to its development and generating further burst or fragmentation of functions between different actors. It is planning responsibilities, the definition of projects and programs of study and financing of transactions, the execution of works and equipment and finally put into operation and operating the facilities.

In relation to this, it should be noted that the Ministry of Town Planning, Housing, Urban Water and Sanitation is responsible for sewerage and the National Sanitation Office of Senegal (NSOS) which is under its supervision is responsible for the planning, implementation and operation of urban infrastructure. However, for the rainwater, other stakeholders (local authorities and ministries) are also involved in project management and control remediation projects, housing projects or neighborhood sanitation.

As part of a coherent management of sanitation including the storm water management, synergy of interventions is insufficient today must be strengthened. Thus, the typical example of this institutional disorganization is given by the Department of Sanitation, marked by permanent instability for sanitation change a department to another. It sails between health, hygiene and prevention, hydraulic and habitat, infrastructure.

This institutional instability is reflected in the policies pursued for sanitation because each minister has his vision and priorities at the time of decision making; although it was noted that the general policies in the long term had been declined in

the MRE or other strategies established by the state since 2000 and in 2005 by the new sectorial sanitation policy.

The environment in the areas of competence transferred to local communities since 1996. This appears through Law 96-1134, with skills transferred to local authorities (region, municipality and rural community) in natural resource management and the environment or the sanitation code, which state the responsibility of local authorities in storm water sanitation. Thus, municipalities are responsible in conjunction with the State of investment financing and operation of collection and discharge structures rainwater including open canals.

While many texts seem to provide some expertise to local communities in environmental management to include sanitation as the new Law No. 09-24 of 8 July 2009 on the sanitation code. Hence the issue of accountability of the latter in solving problems is related to the environment and more specifically to sanitation. Reading these texts that mention the skills of local governments in environmental matters clearly shows that their secondary role is reserved, sometimes purely imaginary or superficial. Strengthening communities of powers in the management of issues relating to the environment is a need for decentralization should not be just a name but a palpable reality for both peoples and local authorities. It is true that communities lack the resources both financial, technical and in terms of qualified human resources, but this should not be an obstacle. The issue of sanitation should be treated at the base with further responsibility in land matters by strengthening the provisions of the Town Planning Code as these two go hand in hand.

Sanitation requires a lot of resources that must be sought initially in the Municipality through the various channels that exist there and secondly to external partners.

The local sanitation funding will take into account both the contribution of industries and the local major stakeholders. The raising of the amounts allocated to the other sectors in the department budget.

Sanitation requires a lot of ways that actually exceed the capabilities budgetary common term. Hence thinking about changing the funding mechanism through the contribution of industries locally. The presence of activities is noted primarily in oriented fishing and fish processing in the area. These activities are characterized by their location near the sea causing significant releases of substance in it. This general observation of extraordinary pollution from these industries brings the question of their contribution to the restoration of the ecosystem balance or the protection of the environment. In environmental law remains a sacrosanct principle the polluter pays principle enshrined in international treaties such as Rio in 1994 and adopted by Senegal in the various texts including the code environment with its implementing Law No. 2001-282 of 12 April 2001.

Thus, the activity of these industries that are part of classified establishments is framed textually to look for items to Environmental Code Act No. 2001-01 of 15 January 2001. In fact, the district was able to reap the benefits of the activity of these companies but unfortunately they couldn't because of

the Environmental Code states "Rights and annual fees relating to classified facilities are perceived by the Ministry for the environment". Sanitation financing in the neighborhood could rely on these taxes that would be directly donated to the municipality to supply these remediation projects that are overpriced. Certainly we can think of a redistribution of taxes by the state through other mechanisms such as endowments or contest but the mechanism fund that can meet the requirements of the district is the direct contribution of these local industries to enable increasing the budget remains far short from the needs expressed for the remediation of the community of St. Louis.

In view of the difficulties experienced by the city of St. Louis to complete a substantial funding can resolve the issue of sanitation alternatives should be tested including the upward revision of the contribution of the state for sanitation department but also the exploitation of new opportunities opening up in the framework of decentralized cooperation.

Internally, sanitation receives state funding for the realization of certain infrastructure. For 2010 the budget for sanitation is of the order of 15.2 billion [7]. This amount seems clearly insufficient given the difficulties experienced by the sanitation sector in particular with the floods in suburban Dakar became recurrent. The investment deficiency in this area is real; the financial balance of sanitation remains a big problem especially for NSOS because its rates do not include access to public sanitation. In addition, expenses for NSOS sanitation rainwater are also covered when they should be a source of funding for this structure. The investment plan for urban sanitation amounted to more than 220.6 billion CFA francs for the MDGs is still not effective with many challenges the sector faces. The state operates globally in the major remediation projects but the amounts allocated to this sector remains very low compared to the needs expressed by NSOS and local authorities who want more support from the state. Thus, fund or support staffing should be strengthened for more effective management of this issue. This requirement remains understandable in so far as the state collects all major taxes industries and other establishments in the municipality in return it must increase its contribution in the realization of infrastructure capable of solving these problems. Like the big cities, St. Louis should take full advantage of decentralization by granting more power of decision and action. The empowerment of communities through a real transfer of skills will settle land occupation problems; housing, urban planning and recess will result from effective management of sanitation. The state should increase the resources allocated to this sector and empower local communities to achieve the MDG target, which incidentally will be very difficult for the situation of the drinking water and sanitation deficit in the Municipality of Saint-Louis and more specifically in the district of Guet Ndar.

The sanitation sector is maintained by the intervention of development partners who finance most of the projects.

Thus, several international multilateral or bilateral institutions intervene in the field of sanitation in Senegal. Their intervention may be individual according to their own procedures or in concert. Most occur due to funding requests from the authorities. These institutions can be classified

according to their area of activity: multilaterally we will mention: the World Bank, the European Development Fund, the Nordic Development Fund, the African Development Bank, the Islamic Development Bank, the Arab Bank for Economic Development in Africa. Bilaterally, the countries involved through their cooperation agencies. This is the case of Japan (JICA), France, Belgium and Luxembourg, etc [8]. Institutions such as banks finance projects through loans, while institutions such as the Nordic Development Fund or the European Development Fund usually give donations. Thus, before the funding problem for sanitation only decentralized cooperation can be a solid alternative. It is in this sense that the Municipality of Saint-Louis, through the MDA, as some towns of Senegal, to develop new policies geared towards cooperation with partner cities.

The International Forum on Climate Change, held in December 2010 in Saint-Louis, Senegal, had retained in its recommendations appropriate strategies for adaptation and mitigation to climate change. The social housing project, the City of St. Louis benefited from UN-Habitat, is part of this dynamic. There is F3 type of housing (consisting of 3 rooms including 1 living room and 2 bedrooms) on a serviced area and with community facilities. The affected districts are Guet Ndar and Diaminar. This relocation demonstrative program in two cities districts, aims to build the houses of low cost, to free the areas at risk of erosion or flooding.

III. SOLUTIONS

The resolution of the equation posed sanitation Guet Ndar resulted in various solutions. In some such proposals are immediately applicable or emergency including those related to floods, others have a more ecological character for integrating environmental protection. Several solutions from the analysis of the current situation of sanitation in the city of Guet Ndar one hand those advocated by various studies conducted for this purpose and the idea of an action to restructure the whole area.

Recurrent flooding situation in the neighborhood of Guet Ndar witness the lack of sanitation has created several solutions directly under each of the studies conducted by various consulting firms and others are the subject of a census of solutions implemented by the state, local communities or populations that they even from the rest are the first victims.

The lack of planning in the management of this city is the direct cause of the current situation and requires a profound correction. Thus, the solution that obtained the unanimity of the actors concerned and the direct beneficiaries that are the populations remains the restructuring of these irregular districts. According to them, the issue of sanitation in this neighborhood cannot find a lasting solution without restructuring. But to touch the nagging question of restructuring brings back the debate of the means that block all initiatives of the communities because the State struggles to rank it in its priorities. Guet Ndar became a bottleneck for Saint-Louis.

The future of sanitation in the neighborhood of Guet Ndar will have to be based on a futuristic vision that gives these areas their usual functions but also the redefinition of methods and systems of sanitation much more adapted to a projection of

sustainable development. Futuristic sanitation, integrating purely ecological aspects, will involve the creation of a large drainage pipe to feed the market gardeners outside Saint-Louis and the radical change of the autonomous systems towards the whole to the sewer in order to protect the water table.

In big cities, a sewer system meets the storm water drainage of roles is done on the surface by emptying gutters regularly in the underground sewer system; buildings are connected by piping which avoids the presence of waste water surface. In the specific case Guet Ndar promote sewer system is necessary to protect the water table is flush. This situation seriously jeopardizes water resources in this area by intense heavy metal pollution. The habits of the population according to which septic tanks are emptied directly into the web make it more difficult problem. But deep in this situation analysis reveals other causes, which we can call the project impacts in the area to solve the problem of sanitation in the city of Guet Ndar.

The space of Guet Ndar should benefit from a restructuring to ensure the minimum conditions of habitability. This requires the setting up of management tools involving inter-institutional cooperation and a flattening of quality spaces. With midterm documents for corrections and improve from the will of the various partners to ensure project success, this will be done in the following stages:

- Management plans with new or improved roads. We must identify ways to free up space for the realization of equipment, which is a defect.
- Relocation of the exceeding population plan with a prior study of the existing zones in relation to municipal land reserves.
- Study on the project's impact on people and the environment.
- Proposals for development activities particularly in the field of fisheries, which occupies the majority of the population and retraining in other trades.

Future work can be done in the example image of a city contract or even a district contract. The city contract is a contractual framework for urban policy created to simplify and standardize the inner city rehabilitation actions by creating synergy between the actions of state and local actions.

The neighborhood contract that of Guet Ndar; precisely; will be a multi-year commitment between the municipality of Saint-Louis and its partners and the district of Guet Ndar to implement urban social development at the neighborhood level.

The basic concept is the participation of the population as for the city contract whose purpose is to integrate the neighborhood in the city.

In order to qualify for an efficient and adequate functioning of sanitation; there is an urgent need to carry out awareness-raising campaigns against the Guet Ndar population to popularize the adoption of new behaviors in the face of this unsanitary situation. This is in line with the Convention's logic

of action for the implementation of the sanitation infrastructure project and support for the productive fishing sector.

These awareness actions should be implemented through the following fields:

- Usage of the private and public sanitation with the assimilation of customary technical conditions;
- Encouraging the social compromise to the private sanitation solution and ownership of the network by the people and compromise for maintenance.
- Cleanliness of streets and public spaces with discussions and training on the cleanliness of streets and its contribution to safe habitat but also the proper functioning of collection systems and storm water piping.
- Citizenship with discussions; training and assimilation of certain standards of good behavior necessary for good management of the public space of the neighborhood.
- Garbage collection to have clean streets. This can be done within an agreement with partners through the implementation of a garbage collection system in the neighborhood with the participation of the beneficiary population. Within the framework of the General Sanitation Plan of Saint-Louis; the activities will coordinate with the public bodies and organizations involved such as ENDA; by proposing a solution for the sustainable collection of residues.

In view of the current status of the area, and the urgent solutions, it is necessary to update the plans and to work out Guet Ndar on simple measures of rehabilitation, in collaboration with the local population through the district council, the common interface, which advocates a participatory development with a better management structure property and shares, from the planning, the fruit of their decision. Thus, the awareness and the involvement of the population are necessary to better approach the ground and needs assessment.

Improved organization of the sanitation sector requires national strategies and appropriate financing mechanisms.

National sanitation policies and strategies are indispensable for the development of the sector. They make it possible to translate a political will into concrete actions and constitute a frame of reference for the sharing of roles between actors. However, many African countries have inadequately developed policies that are incapable of responding to the challenges of sanitation: [9] Who is responsible for the sector? Which technical solutions are preferred for each segment of sanitation (access to sanitation, collection of wastewater and excreta, treatment)? How to take into account user demand?

Political membership at a high level is an essential prerequisite for defining and implementing a policy. Because sanitation policies are inadequate in many countries, advocacy by civil society is the most relevant way to bring about the necessary political awareness. Given the wide diversity of actors and interventions, the sanitation sector needs a leader. In

charge of facilitating consultation, reflection and promotion of approaches, tools and solutions to be implemented, this sector coordinating authority must be recognized by legislation and able to collaborate with the various ministries and state services.

Autonomous sanitation and semi-collective sanitation, in addition to collective sanitation, are the two options to be favored for the rapid development of African sanitation services. They must be developed in their entirety: from access to the service to effluent treatment.

Development of services at the local level, based on concerted municipal strategies are close to the users and the various local operators, because sanitation is a public service to be built locally, local authorities have an important role to play in improving the sector. However, in order to fulfill this role, they face many difficulties: lack of recognition in national legislation, lack of financial and skills capacities, lack of local strategies for sanitation, and lack of open international funding windows for decentralized actors.

Faced with their responsibilities for the development of sanitation services, elected officials and technical services of local authorities need to be trained and equipped with tools for decision-making and planning. The strengthening of their capacities must be accompanied by an increase in financial transfers from the national budget and support, in particular, from the decentralized technical services of the state. National associations of local authorities are key partners to be involved in these processes.

In order to define and implement actions at the local level and to be in a position to dialogue with development partners, each African community must adopt a concerted municipal strategy for sanitation, drawn up in consultation with all local actors, response to population demands and needs. Such strategies, which make it possible to determine the most appropriate priorities and modes of intervention, require the support of national expertise, which has yet to be developed in each country.

Improving access to sanitation requires the participation of all relevant local actors (service operators and users). It is necessary to identify them and listen to their expectations and then involve them, first in the formulation of local strategies and then in the implementation of these strategies.

The mobilization of resources, both national and local, for the sanitation sector remains difficult. This trend is reinforced by the still preponderant perception of sanitation as a component of drinking water projects and not as a priority that can be addressed in a specific way.

For each segment of the sector, and depending on investment or operating costs, specific sources of funding are to be mobilized (national level, local level, households or development partners) and financing mechanisms. The allocation of these funds is to be implemented (direct payment by users, subsidies, micro-credit, etc.).

The sustainability of the sector depends above all on the ability to permanently dispose of funds mobilized locally. Such funds may be supplied, in particular, by (moderate) taxes

applied to existing and financially profitable public services. They make it possible to develop sanitation access programs over time, to cover the operating costs of public facilities (dumping sites, treatment plants, etc.), or to have an important leverage effect in order to increase Mobilization of external financing.

To improve the situation of access to drinking water and sanitation, the recommendations converge towards better coordination of actors through consultation within the framework of federative entities, the capitalization of the efforts of all to improve the indicators of achievement and access, establishing effective mechanisms for sharing information and data and strengthening the synergy of actors through strong coalitions to solve problems.

The involvement of non-state actors is an important link in the sector. This is why it is necessary to reinforce the synergy in the approaches developed by the NGOs which must consolidate their organization by reinforcing the principles of good governance to further constitute a force of credible proposal at the national level and especially with the international partners. Regional coordination can be strengthened across the state through the creation of regional water and sanitation platforms.

In relation to the sector regulations, it is necessary to operationalize the regulatory texts through various measures, the most urgent of which is the operationalization of the Law on the Public Service of Water and Sanitation. This should be articulated with the texts of decentralization

GENERAL CONCLUSION

This study is consisted of an in-depth diagnosis of the district of Guet Ndar and its remediation.

With regard to the evacuation of wastewater and excreta outside the neighborhood, beyond the emptying of pits, a common practice observed in Guet Ndar is the storage of gray water (dishes, laundry) in buckets and basins, which are emptied daily into the river or the ocean. These practices cause serious health and environmental problems (serious pollution of the arm of the river along Guet Ndar) and human dignity. In order to improve this situation, the local context calls for a collective and / or semi-collective sanitation solution. Different avenues and their technical, financial and institutional feasibility have to be explored with those involved in the sanitation sector in Saint Louis.

It is always essential to integrate the improvement of the sanitary conditions of a population into the complete chain of sanitation, from upstream to downstream (collection, evacuation, treatment). In the town of Saint Louis, there is a conventional sewer system, a pumping station at the entrance to Guet Ndar. This sewage system discharges sewage into a lagoon station that treats pollution before release into the wild. The data from the Master Plan for Sanitation and Surveys indicate that this station can take care of the wastewater from Guet Ndar if the district were to be connected to the NSOS network.

These approaches to improving the sanitation of the district of Guet Ndar must in any case be part of the institutional and legislative organization of the sanitation sector in place: NSOS is the contracting authority and the operator of Network in Saint Louis. Locally, many actors are involved in sanitation and should be included to enable a good implementation of a sanitation project locally: Saint Louis Town Hall, MDA, Hygiene Brigade, etc.

Finally, the ancillary research made it possible to highlight the fact that the household garbage in the neighborhood is already collected and evacuated by the Economic Interest Group and the municipal technical services. Rainwater also appears secondary (low rainfall in Saint Louis). These two points lead to focus on the management of wastewater and excreta in the neighborhood of Guet Ndar.

To improve the sanitation system, a model must be chosen. The current model in West Africa is the individual system, which if properly managed, can be satisfactory. However, if demographic pressure continues, an inevitable consequence of habitat densification will be the construction of multi-layered dwellings, as in most industrialized megacities [10].

Thus, a central collection system for excreta will become economically more advantageous. An improvement of these structures and their management will be financially more advantageous than the establishment of a central system. These few examples would show that options for adequate sanitation in West Africa exist, but are not necessarily copies of the systems deployed in France. Local users are willing to pay to improve their situation, but national and international institutions are far from being defeated [11].

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