

**THE IDEA OF PLANNING: A CASE STUDY
OF NOUAKCHOTT, MAURITANIA**

By

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DEDICATION

I would like to dedicate this work to my dear late father Thiam Abdoul Kader Samba Nawel for being an exemplary role model. Rest In Peace. To my wonderful mother Assaita Mame Ly a.k.a Nene Ly for giving me strength and inspiration in life, I just want to let you know that I love you very much. To my dear aunt Houleye Ba dite Yaye Boye Ba for loving me and caring for me. Thank you all for being great parents and wonderful people. I dedicate this paper to all my dear brothers and sisters.

This paper is also dedicated to my late aunt Thiam Fatimata Samba Nawel, to my late uncle Issa Samba Nawel Thiam, my late cousins: Lamine Issa and Moussa Issa THIAM, to my late nephew Diallo Alioune dit Berger, to my late friend Djibril Mamadou Mbass, and to my late grandmother Fatimata Tamboura dite Ina Mawdo. Finally, I would like to dedicate this paper to all rural people in Mauritania and to rural people of Magaama in particular who gave me the inspiration to write about this topic.

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LIST OF ACRONYMS

ADU: Agence du Developpement Urbain

A.K.A: Also Known As

AOF: Afrique Occidentale Francaise also know as French West Africa

B.A.: Bachelor of Arts

BARA: Bureau of Applied Research in Anthropology

CAS: Country Assistance Strategy

CILSS: Comite Inter-etats de Lutte contre la Secheresse au Sahel

GDP: Gross Domestic Product

GIS: Geographic Information System

IGAs: Income Generating Activities

IMF: International Monetary Fund

INGOs: International Non Governmental Organizations

NGOs: Non Governmental Organizations

NKC: Nouakchott

NSF: National Science Foundation

SDAU: Schema Directeur d'Amenagement Urbain

SAPs: Structural Adjustment Programs

VVOB: The Flemish Association for Development Co-operation and Technical Assistance

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THE IDEA OF PLANNING: A CASE STUDY OF NOUAKCHOTT, MAURITANIA

INTRODUCTION

Governments of countries affected by rural to urban migration have yet to find a useful approach to dealing with the outcomes of rural to urban migration. Perhaps, because the dynamics of this migration are not fully understood by policy makers and city managers; and these dynamics change, it would be unrealistic for these governments to find ways of limiting the human rural-urban flow. They do need a holistic understanding of coping strategies the new poor city dwellers use to survive. It is not clear how the new migrants adjust to city life, or what kind of social network or socio-economic framework they use to survive the hardship experienced in many Third World cities.

The city of Nouakchott (NKC) has experienced a tremendous population increase since independence in 1960: from 2000 inhabitants in 1955, to over 600,000 in 2000. Local authorities have not been able to deal efficiently with the spatial and demographic expansion of the capital city. This has resulted in sprawling shantytowns in Nouakchott. The city has low density, and it lacks primary infrastructure (water, electricity, health centers, schools, transportation systems, markets, etc).

The lack of urbanization policy, the inadequate land tenure system, and land speculation are some of the major issues that contribute to the urban problems in Nouakchott. Because of land speculation and the disorderly distribution of plots of land, the urban perimeter is bigger than the population density requires. This makes it difficult

for authorities to provide basic services to all urban populations. The new Schema Directeur d'Amenagement Urbain (SDAU) run by the new Agence du Developpement Urbain (ADU) created in 2001 is in charge of developing and guaranteeing an urban development for the city of Nouakchott. The SDAU projects the population of Nouakchott to be at 885000 inhabitants in 2010, and 1.250,000 in 2020 (SDAU I, 2002). The fact that the country never had an effective and reliable planning agency since independence in the 1960s is an indication how nomadic and rural the populations are. City life was mainly seen as a foreign notion up until the mid- 1980s.

I-PLANNING MODES: DEFENSIVE, RATIONAL, ADAPTIVE LEARNING, AND FEEDBACK

There is one problem that is not very often mentioned in the literature about uncontrolled urban growth in Africa. Many planning models in African countries are still based on the western model of planning. Many ex-African colonies are trying to adopt urban growth policies from France, the ex-colonizer. These policies are not suited for urban growth problems in African countries (Peil and Sada, 1984, p 7). These models can be a handicap to the urban development process because urban realities are sometimes very different, and the solutions go beyond master planning. For Andreas Faludi (1973), in discussing urban development in various parts of the world, we are often [always] asked to consider Western experience of “planning”. Yet the term is usually a misnomer. The relevant British experience is chiefly in the field of “town and country” planning; the American in the field of “city planning” (p 45).

In the case of Mauritania, Nouakchott in particular, French colonizers adapted a defensive planning model when creating the city of Nouakchott. French administrative

objectives were mainly to create the state of Mauritania because of the Moroccan threat and the will of Mauritanian intellectuals to have their own country outside of the Afrique Occidentale Francaise (AOF). I will discuss this in detail in the next pages.

The planning system is through a centralized government with a top-down approach to implementing plans. It is a system that is inherited from the French. Planning in Mauritania remains ineffective. Therefore, planning as a social learning or adaptive planning, feedback planning, and rational planning modes with visions and opportunities can be a better approach to urban development in Mauritania.

Urban planning in Mauritania evolves and changes; this can be positive in the sense that it could allow urban planners and city managers the freedom and flexibility to utilize a new way or ways of planning. In the Mauritanian context, long term vision (comprehensive or master plans) planning should be limited to areas such as water, transportation, desertification, and the environment; the other sectors should follow planning as social learning and the feedback planning modes.

It is not always recommended to import foreign planning models to solve local planning issues. For Todd Alexander Litman (2004), effective planning requires:

- A clear decision-making process. Each set in the process should be defined and understood by all stakeholders.
- Stakeholder involvement. People who are affected by a planning decision (“stakeholders”) should have opportunities to become informed and involved.
- Accurate information. Good decision-making requires good information.

- A range of options to choose from. The greater the range of options that decision-makers have to choose from, the more likely they will be able to develop a plan that truly reflects their needs, preferences and values.

A planning process that fails to reflect these principles may result in confusion, conflict, disappointment and waste (p 3); (quoted from: <http://people.hofstra.edu/geotrans/eng> (March 17, 2004).

A framework of an effective idea of planning cannot be complete without the following requirements:

- An implementation of chosen options. The best way to test a theory is to put it into practice.
- And feedback or learning as you go. It is desirable and highly recommended to get or ask for feedback regarding the planning mode or planning model that is being implemented.

Based on my personal experience and knowledge, the planning practices in Mauritania are just the opposite of what Litman has suggested. Therefore, one can consider that the planning process in Mauritania has resulted in confusion, conflict, disappointment and waste.

In the first part of this report I will give some general historical back ground about Mauritania. Second, I will use the defensive planning mode to talk about how much planning was involved or not involved in the creation of the city of Nouakchott in the late 1950s and early 1960s, and talk about the city's intrinsic urban issues. Then I will apply the adaptive learning or planning as a social learning mode to focus on the livelihood

strategies those rural urban migrants in Nouakchott use to survive and explain what an important role the informal sector plays in the lives of these migrants, and how it can contribute to reducing unemployment and poverty. And finally, I will use the feedback planning mode to emphasize some of the recommendations that I believe the decision makers should use or focus on to help build a better and more sustainable city.

II- COUNTRY BACKGROUND

Historical Facts

Very little is written about the history of Mauritania or “much is known but not written right”. Mauritania like many other African and Sahelian countries has a very oral tradition. The written history in Mauritania is very biased based upon who is writing it. According to Gerteiny (1967), the history of Mauritania preceding the arrival of Western colonizers is not only unwritten, but it is largely unknown as well. Some material can be pieced together from anthropological, ethnological, and archeological researches, supplemented by occasional accounts of Arab chroniclers and geographers, but much depends on oral tradition. These, however, take the form of special pleadings-accounts intended to be favorable or unfavorable to the tribes they describe, the bias being determined by the real or imagined interests of the speaker (p 18).

For French colonizers, Mauritania was not an important territory. They used to refer to it as “le vide” (the vacuum). It was an inhospitable territory, and its inhabitants were ready to fight against any kind of human domination. “Two main factors contributed to Mauritania’s isolation: first, its inhospitable coastline and hinterland, and second, the inhabitants’ love of freedom and their readiness to oppose any attempted encroachment on their territory” (Gerteiny, p 36, 37).

The French were mainly interested in the gum arabic that was an important raw material for the textile industry in Europe: “Late in the sixteenth century, the Portuguese establishment at Arguin was taken over by the Spaniards, who in turn, in 1638, were displaced by the Dutch. The Dutch were the first to recognize the qualities and importance of gum arabic, a product extracted from *acacia Arabica*, which was then found in some abundance in the Mauritanian Sahel, and widely used for pattern printing in the textile industry” (Ibid. p 37).

After almost thirty four years (from 1901 to 1934) of battle, persuasion, and dissuasion, the French were finally able to have “*le Territoire Mauritanien*” under the control of its territories of the Afrique Occidentale Française. According to Gerteiny, after 1934, the history of Mauritania was closely tied to the French Administration of French West Africa based at Saint Louis, in Senegal (Ibid. p 114, 115). The French colonizers referred to Mauritania as a *trait-d’union* (hyphen) state between Black Africa (Sudan) and White Africa (Maghreb). Ould-Mey states that, within the framework of French imperial policy, Mauritania was conceived from the beginning as *a trait d’union* (literally a hyphen, here meaning a transition zone joining two distinct regions) state between the Maghreb and the Sudan (p 76).

Mauritania Today

Mauritania is situated in northwest Africa with the Atlantic Ocean to the west, Algeria and Western Sahara to the north, Mali to the east and south, and Senegal to the south. It is a sparsely populated country in the western extremity of the Saharan desert. The southern part of the country has rain-fed vegetation. Over 90 percent of the land

surface is desert, with less than 200 mm of rainfall per year. The last census in 1998 estimated the population at 2.6 million, with a growth rate of 2.7 percent per year.

There are four main ethnic groups in Mauritania: Haalpulaaren (also known as Fulani, Peulhs), Soninke, Wolof, Bambara, and Hassanya. Mauritania is among the poorest countries in the world. Islam is the main religion (100%). Mauritania became a democratic regime in 1992 by constitution in 1991.

The major natural resources in Mauritania are iron ore, fish, oil, gypsum, phosphorous, and gold. The means of production are light industry, traditional and industrial fishing, services, subsistence farming and livestock, exportation of iron ore and fishing products. Mauritania has also one of the richest coastlines in the world but the overexploitation by foreign vessels is jeopardizing its resources.

Mauritania is divided into eleven regions, each with its chief-lieu, or administrative capital, and the District of Nouakchott. The regions are: Assaba, Dakhlet Nouadhibou, Brakna, Gorgol, Guidimakha, Eastern Hodh, Western Hodh, Inchiri, Tagant, Trarza, and Tiris Zemmour.

III-DEFENSIVE PLANNING AND THE POLITICAL REGIMES

In the Mauritanian context, defensive planning can be defined as a planning that is “solely” based on the French approach and model of planning cities. They viewed the Mauritanian territory as inhospitable, hostile, and economically not viable; therefore, planning in general and urban planning in particular were not undertaken to provide a framework for long-term development. Urban planning during the colonial time had to do more with administrative strategic planning than city or master planning. The French did not think primarily about taking into consideration the local realities such as lack of

decentralization, lack of transportation, remoteness of other cities from the capital where everything is concentrated.

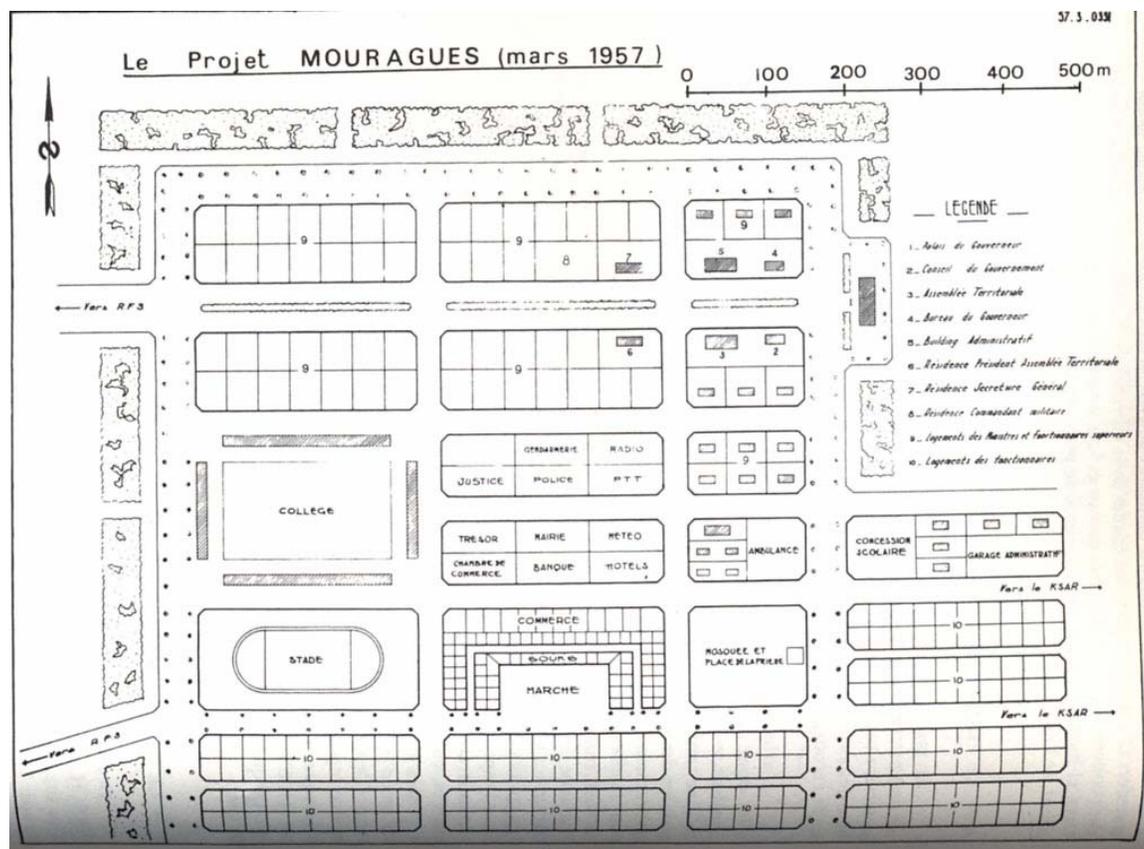
Colonial Phase: 1900s to 1960s

This era was dominated by the French colonial administration and political system. The majority of the administration was composed of French nationals; and everything was based on the French model including planning. We can say there was little planning involved when Nouakchott was created. The creation of the city in the late 1950s was done in hurry for historical reasons: On the one hand, when Morocco obtained its independence from France in 1956, King Mohamed V of Morocco had aspirations to invade Mauritania and make it a part of “Greater Morocco” not considering that another country should exist between Morocco and Senegal. This is one of the main reasons why French colonizers expedited the creation of the Mauritanian Capital City. On the other hand, the reason for the creation of Nouakchott was due to the fact that Mauritanian intellectuals expressed their will to have their own country in their own territory (Pitte 1977, p 55)¹.

¹ During the French colonization, the modern day Senegal, Mauritania and Mali were all under the French West Africa commonly known as “Afrique Occidentale Francaise (AOF); and all West African colonies seats were located in Saint Louis, Senegal.

construction started in 1958, with four different designers, progressing through major changes (see Appendix A, B, C, and D).

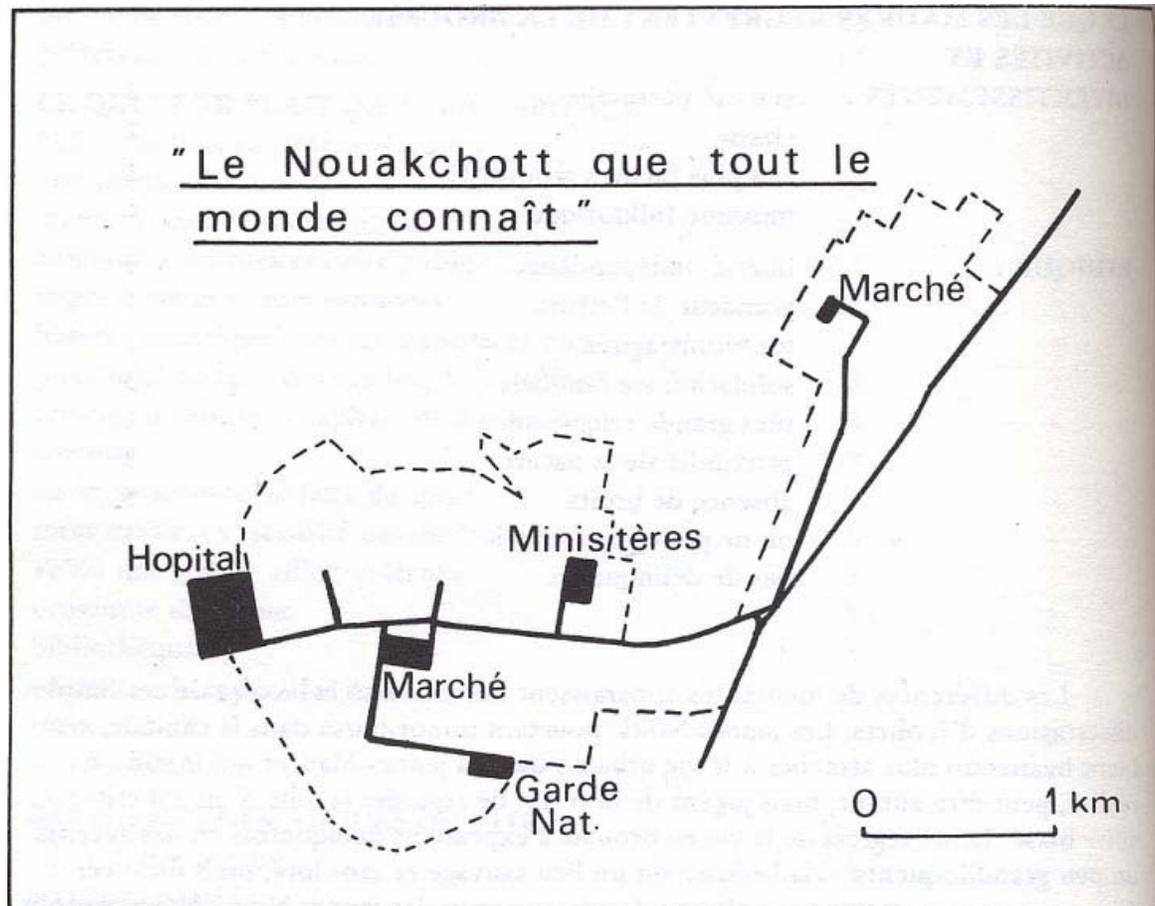
According to Pitte (1977), the French governor of Mauritania, Mouragues wrote down on a small scratch piece of paper the plan of the city of Nouakchott (known as Le Projet Mouragues) that he gave to the colonial topographic service. The archives of that service still have the information and facts explaining how fast a decision were made to create Nouakchott.



Le Projet Mouragues (mars 1957). Mouragues was the governor of Mauritania. Source: Jean-Robert Pitte 1977.

The French authorities did not spend a lot of time or study the social and economic impacts of the creation of the Mauritanian capital city. Primarily, they did not even think about hiring an urban planner to study the planning feasibility of the city (Ibid. p 39). Nouakchott had even experienced a flooding in the early creation of the city (see Appendix F), and early squatters in the 1970s have been living in floodplain-designated areas (sebkhas). French colonizers conceptualized Nouakchott as an administrative capital city that would mainly accommodate French government officials and employees, members of the new Mauritanian government, and few indigenous people.

Based on my B.A. in English as a Second Language's senior paper I found that in 1959, Nouakchott had an administrative district overlooked by the government palace, ministries, and buildings for the administration. Near the administrative district there was a Medina [an indigenous settlement] which was dominated by the presence of a civic center and markets. There was also an academic center, a hospital center, gendarme's barracks, and an army encampment zone. Finally, there was an industrial zone that allowed the installation of necessary conditions for the functioning of the capital city: slaughterhouse, center for entertainment, center for sports, cemeteries, etc. The town was built to accommodate 30, 000 inhabitants (Thiam, 1995).



An Early Map of the city of Nouakchott. Source: Jean-Robert Pitte 1977.

The lack of a water supply demonstrates the lack of planning for the city of Nouakchott. According to Pitte when the final decision was made about the site of the city of Nouakchott, people early on realized that water was a big issue for the new capital city. There was only a small aquifer in the Aftout es-Saheli (see Appendix E) around the site of NKC, and it was only 2 to 4 meters deep and the water contained about 3 to 5 grams/liter of salt. The salt level in the water was ten times less than the water from the ocean, but it was ten times higher than the underground water around Nouakchott in the Trarza region. The closest aquifer with good quality drinking water was located about 80 kilometers away from the city (the Idini aquifer). Between 1957 and 1958 some

inhabitants were using water harvesting techniques and tank trucks were used to bring water from Rosso to Nouakchott more than 100 kilometers. Some people were making line to receive water from the tank trucks (see Appendix H).

It was out of question for the colonial administration to spend a huge amount of money or invest in high technology to desalinate water from the ocean to provide good quality drinking water to Nouakchott (Ibid. p 29). It was not until August 1959 after the Idini water station investments were finished that NKC had good quality water. This aquifer had a capacity of 180 millions m³; 900m³ were pumped daily. Mauritanian authorities believed that 600m³ were enough for the inhabitants in the city. They were not expecting the population of NKC to exceed 8000 people in 1974, however that number was already reached by 1962 (Ibid. p 31). Sometimes, the water pressure in the city is very low, even nowadays the city continues to experience occasionally water shortages. Even the total cost for the building of the city (1,500,000 F.CFA) is an indication how fast a decision was made to build Nouakchott, and that not much city planning was involved (Pitte, p 37).

Neocolonial Phase: 1960 to 1978

This is an era where Mauritians were trying to build a nation. The government was more focused on politics than on planning or urban development, so there was little planning during the neocolonial phase. As a matter of fact, this administration shares some of the blame with the French colonial administration for the lack of urban development in Mauritania. The government did not have a sound policy or program to help the already poor rural migrants and needy people. For Gugler and Flanagan (1978), the rate of urban growth has substantially exceeded the capacity of both the State and the

municipal governments to extend necessary urban infrastructure and service and generate employment. “Today, these young nations experience various degrees of economic, political, and cultural dependency on outside powers, and they have only very limited resources at their command to meet the aspirations of their peoples” (Gugler and Flanagan, p 1).

Military Coup Phase: 1978 to 1984

During this era, Mauritania was politically unstable. The political regime was dominated by a series of military coups until December 12, 1984. Very little urban or rural planning was accomplished, except that Mauritania was still a member of CILSS (Comite Inter-etats de Lutte contre la Secheresse au Sahel) a regional organization that fights against the drought and the desertification that affected the Sahelian countries in the early 1970s.

Nouakchott's Intrinsic Urban Problems

In West Africa in general and in Mauritania in particular, the urban growth rate is one of the fastest in the world. This intrigues many specialists and city planners. Some of the following factors demonstrate the lack of urban programs: There is much environmental degradation in and around Nouakchott: the garbage collection problem is mainly restricted to the middle class neighborhoods, the lack of wastewater and rainwater drainage attracts mosquito breeding and consequently this creates malaria epidemics. Many squatter settlements around Nouakchott did not have any basic services and infrastructures until the early 1990s. This is to show that Mauritania had no efficient urban planning program and that the majority of the urban population in Nouakchott had

no access to urban services. This is to emphasize the lack of urban policy and viable urban growth program.

To quote Joseph S Tulchin; the modern cities sprawl. They grow without limits, without giving thought to their future, and without any worries on the part of the decision makers about the social cost of uncontrolled expansion. Nobody thinks of the city as a city. Very few of the inhabitants of a big city think of themselves as citizens. For those who have money and live in residential suburbs or areas well away from the center, the streets are nothing other than ways and means of daily travel. For those who have no money and live in poverty-stricken shantytowns located on any empty site in degrading circumstances, there is no street, no square, no feature in their immediate surroundings that could claim their interest or loyalty (Tulchin, 1986, p 12).

The Modernization Phase: 1984 to Present

In 1984, the actual president of Mauritania Maouya Ould Sid' Ahmed Taya came to power by military coup; he then introduced democratization and multipartism in 1991 by referendum. President Taya has been viewed by many as a leader whose vision is to make Mauritania a more developed and prosperous nation.

Recently in 2001, the Mauritanian government created l'Agence du Developpement Urbain (ADU) to help solve the urban issues and the urban planning problems the city of Nouakchott is experiencing since the early 1970s. For the SDAU, in order to control the anarchic spatial development; some basic urban principles need to be enforced: increase the density of the already existing "formal" quarters, limit sprawling,

develop and equip the shantytowns, establish urban development boundaries (sebkha, cordon littoral)², and facilitate income generating activities for poor populations.

The master plan (SDAU, 2010-2020) will set an urban growth boundary and ban any development beyond it. This would increase the urban density by 23% between 2000 and 2010 ("catch up period"), and 13% between 2010 and 2020. However, this master plan can only succeed if all involved parties have the will to make it work, and be ready to stop the current urban practice in Nouakchott. The master plan is just a beginning to help the authorities deal with urbanization and urban issues in Nouakchott. (SDAU, November 2002).

In recent years, the government is helping to integrate the squatters into creating new urban quarters with basic services and infrastructures such as water posts, electricity, paved roads, schools, administrative centers, etc. Squatters are given a piece of land where they can build a "decent" house to live in. However, it is important to note that the price of housing is very expensive in Nouakchott; everything is expensive in Nouakchott and the newcomers do not have any source of income, so it is very hard for them to afford the cost of living in the city.

On the other hand, Mauritania is working with many national and international Non Governmental Organizations (INGOs) such as CARITAS, the American Peace Corps, Oxfam, World Vision, etc. These organizations help to integrate the new city-dwellers in all aspects of development: health, economic, educational, environmental, housing, social and cultural.

² Sebkhha and the cordon littoral are flood zones closer to the ocean in Nouakchott. People continue to build houses in these areas, even though they have been designated by the government as unsafe zones.

Table 12 Western NGOs in Mauritania

Name of NGO	Nationality	Arrival	Activity
CARITAS Mauritanie	Catholic Church-based	1972	Relief and development
Catholic Relief Services	United States	1973	Relief and agriculture
Federation Luthérienne Mondiale	Switzerland	1974	Environment protection
SOS Sahel	France	1983	Water
Medecins sans Frontiere	France	1983	Child care
World Vision International	United States	1984	Health and agriculture
Terres des Hommes	Switzerland	1984	Mother and child
Eco Operations 66	France	1984	Housing
Association Volontaires du Progres*	France	1984	Small projects
Africa 70	Italy	1985	Urban problems
Oxfam	United Kingdom	1986	Spatial planning
Centre de Transfert de Technologie*	France and others	1986	Computer tech. transfer
Community Doulos	United States	1987	Mother and child
Freres du Tiers Monde	Belgium	1987	agricultural perimeters
Helen Keller International	United States	1987	Small rural projects
Association Aide au Developpement*	France	1987	Integrated projects

*The name of the NGO was shortened for space purpose. Source: Ould-Mey 1996.

IV-ADAPTIVE LEARNING MODE AND LIVELIHOOD STRATEGIES

Livelihood strategies are coping systems that people use when their primary resources of making a living are no longer working; therefore, they become forced to do something that they would not normally do. In Mauritania, an example would be a farmer or a herder who temporarily migrates to a city or urban center to find a job after the harvesting season.

Planning as social learning or adaptive planning can be defined as learning by doing. It is a planning based on actions, a cycle of correcting what failed in earlier trial plans, by recommending or suggesting different approaches and different planning modes. The adaptive learning process is sharing ideas and common interests with other groups. It can be considered as a theory of planning or using the idea of planning.

The informal economy is not a new notion in Africa. Africans have always exchanged goods and services based on relationships, tribal ties, and kinship. Many people who start business in the informal sector get their financial needs, capital investment and working capital through personal savings and through borrowings from family and friends. This was how African indigenous people saw economic development. One of the biggest handicaps for this sector is the lack of capital funding from banking institutions.

During the colonial occupation, in order to tax and control the resources generated in the informal sector, Europeans introduced market regulations and restrictions. They also created borders, imposed trade restrictions, tariffs, and they banned trades outside of the new imposed market institutions.

When the Portuguese took Sofala from the Muslims in 1506 it was intended that a royal monopoly should be imposed upon the trade. This provoked unworkable, and instead an unofficial private trade developed, which was then taxed by the royal captains at Mozambique island. To avoid this taxation an illegal private trade grew up which was difficult to detect (MacGaffey, et.al; 1991).

This shows how old and dominant the informal economy is in Sub-Saharan Africa. It was the only form of economic model that people practiced before the arrival of Europeans, and many Africans still largely use it today. This is to emphasize that formal economy is foreign and imposed on Africans to better control them and control their resources. Before the western model was introduced, people were self-sufficient and self-reliant and were able to cope with whatever the nature provided them with.

V-RATIONAL PLANNING MODE: FORMAL ECONOMY AND MARKET RESTRICTIONS

The rational planning mode can be defined as preventing the overuse of the commons to better manage resources, mitigating the effects of market failure, and subscribing to the ideal of the greatest good for the greatest number, because if there is no efficiency and rationality, no plan, there would be chaos. It is a planning mode that focuses on scientific tools and techniques; a planning mode that looks at one element at a time.

Mauritania has been self-sufficient in many important sectors until recent years and these sectors were dominated by people who earn their living through the informal way. To emphasize some of the negative outcomes of the global economy on the average

farmer or herder, Ould-Mey states that, livestock is the only economic sector where Mauritania is self-sufficient, particularly in the production of red meat (from cattle, camel, sheep, and goats). One can say that Mauritanian agriculturalists and pastoralists are perhaps among the last self-sufficient producers to be fully incorporated into the world economy through the livestock sectoral adjustment program (p 175-76).

The colonizers did not reform the economic institutions enough to allow average citizens to make a better living. Resources were available and accessible only to the elite. But it did not stop the average indigenous people from illegal trading. They continued to trade outside the official and legalized economy. Besides, the majority of the African population is uneducated; therefore, many people cannot hold a government job; they have to find a way to gain their living. “ In developing countries, where 80 or 90% of the population has no access to formal financial markets, informal ones provide the sole source of credit and the means for most savings and deposits” (MacGaffey, et.al; 1991); see also Ross (1973).

The Effects of the SAPs

The introduction of structural adjustment programs in the 1980s in Mauritania has intensified the need for an informal sector; more and more people are looking into the informal economy as an alternative to make ends meet. This is not only for the new city-dwellers; many government employees participate in the informal economy because they do not earn enough to support their families' needs. The international financial institutions are advising the government to cut off employees, to cut off government funding for social services, and privatize government owned businesses. The IMF and

World Bank's structural adjustments have negatively affected almost everyone's life in Mauritania, the wage earning population in the urban centers in particular.

These institutions do not accept government diagnoses of the economy they are going to assist. They have their own trained experts, their own methodology of analysis, and their own solutions for what they see as problems of development. Their intervention begins at the level of diagnosis, prescription, and formulation of policy (Ould-Mey, 1996, p 88, 89).

Because of the lack of opportunities in the formal economy and because of the harsh economic times, many Mauritians see the informal sector as a way to overcome the state controlled official economy that is mainly suitable for the middle class and the elite. It is also people's philosophy to take matters into their own hands and organize unofficial systems to compensate the inability of the state to provide minimum infrastructure, basic services, employment, housing, and protection of individual rights. When speaking of inequalities, David A. Smith (1996) states that the urban areas of West Africa follow the pattern found in other regions of the underdeveloped world: The distribution of income, amenities, and life chances is very skewed (p 51).

Because of the realities of African economies such as informality, unskilled work force, and gap in education; the market institutions need to be reformed so that it can be open to the uneducated and the unskilled workers.

Lack of Technical Skills

In Mauritania as in many Sub-Saharan African countries, the livelihood systems are by nature informal because many people cannot find jobs in the formal economy due the lack of education and lack of technical skills. People did not focus on material

growth. People focused on being self-sufficient, and to have enough surpluses until the next agricultural and/or pastoral season. This was possible when they chose subsistence crops for their agricultural practice. However, when the government introduced the cash crops in order to yield greater profits and surpluses, the copying systems for many people became harder, and the socioeconomic situation of many people became vulnerable (see Park, Thomas). According to Ould-Mey, these measures [SAPs] were designed to transform an essentially subsistence and self-sufficient form of production and consumption into a market-oriented system of production and consumption structurally linked to, and dependent on, the world market (p 175).

VI-PLANNING AS A SOCIAL LEARNING MODE AND INFORMAL SECTOR: LESSONS LEARNED ELSEWHERE

In the book “*The Real Economy of Zaire*”³, MacGaffey, et.al; (1991) state that, the Zairian case illustrates well the economic situations in Sub-Saharan Africa. However, the case of Zaire is not unique. It is only unique in the sense that, with its immense natural resources, its regions are not all equally well developed, and with its strategic location in the heart of Africa, [it] borders regions diverse in commercial opportunities (p 17). On the other hand, Zaire is one of the richest African countries in terms of natural resources but it has one of the lowest per capita in the continent. According to MacGaffey, the real economy of Zaire may well be as much as three times the size of the official GDP (p 11).

What we see in Zaire is that ordinary people have creativity; they have survival skills and good copying strategies, they learn how to adapt to the hard economic times.

³ The authors believe that based on the transactions, expenses, returns, growth, and number of self-employed people in the unofficial economy compared to the official economy or state controlled economy; the former is the real economy of Zaire.

This is sending a message to the states and the financial lending institutions that there are local realities that need to be taken into consideration. Realities such as poverty, lack of education, unemployment, lack of opportunities, lack of access to credits, and the unequal distribution of resources among the populations. People will not sit and die because of lack of accountability of their governments.

Despite its negative aspects (illegality, tax evasion, unfairness to business owners who pay taxes, etc); the real economy of Zaire has many positive aspects: it creates jobs for the unemployed, and helps the employed to make ends meet; it compensates what the official economy does not provide in terms of goods and services; it allows the poor to have access to health care, food, and the opportunity to sell their labor. The same is true in Mauritania, in Nouakchott in particular. The majority of the urban population in NKC is into urban agriculture, street vending, restaurant business, transportation and construction business, and petty commerce. People do not expect much from the government, they fight to survive.

Tableau 2 : Emplois à Nouakchott par secteur d'activité (nombre et pourcentage)

Secteur	Emplois (nombre)	Revenus distribués (en millions UM)	Emplois (en %)	Revenus en (en %)
Informel	96.000	9.190	60,9	31,5
Pêche	17.000	252	10,8	0,9
Fonction publique	15.000	7.282	9,5	25,0
Transports	11.000	1.899	7,0	6,5
Services	3.300	968	2,1	3,3
Entreprise secteur public	3.200	1.831	2,0	6,3
Commerce	2.500	469	1,6	1,6
BTP	2.000	1.160	1,3	4,0
PMI et mines	2.000	296	1,3	1,0
Org Int, ONGs, Coopération	1.600	2.000	1,0	6,9
Energie	1.400	2.436	0,9	8,4
Tourisme	1.300	224	0,8	0,8
Finances	1.300	1.082	0,8	3,7
Agriculture	100	61	0,1	0,2
Total	157.700	29.150	100	100

Source: ADU 2002.

This table shows that the informal sector, the fishing industry, and the transportation sectors employ more workers than any other sector except the public function sector. This is mainly due to the fact that people with little or no education find employment in these sectors because they require less technical skills.

The example of Zaire is at some extent similar to the situation in Mauritania. The majority of the population does not have access to financial resources, and the market institutions are too formal which prevent many citizens to compete in order to make a decent living. The resources that most people have access to are their physical labor, and their rural skills know-how. Unfortunately, most of those skills do not serve them much in an urban setting except in urban gardening; and not everyone has access to the land and/or can afford to rent a piece of land from the private owners.

For many of the less advantaged youngsters, an informal sector apprenticeship is the only source of skill to which they have access. Training places in formal

institutions are insufficient. Consequently, such training is not accessible to the vast majority, and it is not always appropriate to the target groups in question. The formal sector only employs and trains a very limited proportion of the labour force. At a macro level, informal sector skill transmission therefore represents an important, but unaccounted, proportion of the national investment in human capital (ILO 1991, p 39).

This is teaching us that the western notion of economic development (capitalism) is not a one-size fits all. The notion that if credit is made available to people that they would take advantage of it is false and misleading in the Sub-Saharan African context. The problem in Africa is not a lack of resources and availability; it is a lack of accessibility (see Baro, 2002). Resources are only accessible to those who control it, mainly the elite.

“A small group of government-connected officials control land concessions, send their children to advanced schools, live in luxurious villas, and received disproportionate shares of material wealth in terms of both income and public benefits” (Smith 1996, p 52).

The Role of Banking Credits

The capitalist idea that the state should play a minimalist role in the economic development, and let the invisible hand of the market do the job; is not a reality that can be cut and pasted into the Mauritanian economic context. For Ould-Mey (1996), the process of economic liberalization and political democratization provides counterweights that limit the power of the central state, but many of those counterweights are not placed in the hands of the ordinary citizen since “some of them will be in the hands of

multinational corporations which can take decisions that have far-reaching effects on the indigenous population.” Within the framework of SAPs, the crucial economic decisions of budget allocation, investment, credit, and so on, are excluded from the sphere of democracy and left to the bureaucracy of international financial institutions and their partners in government committees, who are neither elected by, nor accountable to, the people. In other words, democratization did not bring about people’s sovereignty over SAPs, and the process of weakening the state does not seem to empower the people (p 254).

Limitations of Rational Planning

Thirty to forty years ago in terms of social indicators and GDP, many African countries were economically better off than they are today. Decades of mismanagement, corruption, economic reforms, cutbacks on safety nets and social services by the state have made the lives of Mauritians more miserable. We wonder what development is, and who should determine what development model a country should follow?

International financial institutions tie their lending by imposing conditionalities that are not desirable to poor nations, and that may affect them economically and environmentally in the long run.

In Ecuador’s 2000 CAS report, the country’s loan was triggered only after it permitted the construction of a controversial gas pipeline over the Andes that had long been sought by British Petroleum. In Sierra Leone, one of the “performance criteria” imposed by the IMF in 2001 was that the nation stops requiring import licenses on foreign-made cigarettes. A study by a Harvard economist found that

the IMF alone held borrowing nations to an average of eighty-one “conditionalities” or other requirements (Harper’s Magazine 2003, p 51).

Since the introduction of economic reforms in Sub-Saharan Africa by the international financial institutions, there is not one major success story except few small urban businesses. This makes one wonder what are the IMF and the World Bank trying to accomplish in the Third World countries. Is it helping governments manage their economies better in order to save their people from misery or do they have a hidden agenda? Former chief World Bank economist Joseph Stiglitz says the wholesale privatizations ordered by the Bank and IMF were so corrupt that he dubbed them “briberizations.” Argentina’s former public-works minister claims that, in 1988, an Enron lobbyist offered to “take care” of him if he would sell rights to the nation’s natural gas for a fifth of the world price (Harper’s Magazine, p 49).

VII-RECENT SOLUTIONS: GROWTH AND DEVELOPMENT

Mauritania is being praised for being a good model for the IMF and the World Bank because of the bold steps it took to develop its country. It is no doubt that someone can notice some changes in general in Mauritania and in Nouakchott in particular. Physical infrastructure (water facilities, roads, health centers, schools, etc) is visible and available in many places but one problem remains: many people do not have access or cannot afford the cost of these facilities because fees for infrastructure use are high relative to average sources of income.

To quote Litman (2004), planners make a distinction between growth (increased quantity) and development (increased quality). Growth means getting bigger while development means getting better. Development improves a community so that residents

become wealthier, healthier, wise[r] and happier. Development involves using resources more efficiently rather than increasing resource consumption. Growth is not necessarily beneficial, and often imposes significant economic, social and environmental costs (p 2); (quoted from: <http://people.hofstra.edu/geotrans/eng> on March 17, 2004).

Recently in October 2001, the Mauritanian government contracted a loan of more than US\$70 million with the World Bank for its cities and urban development and education redevelopment programs. But, for the purpose of this report we will only focus on the urban development project, even though the education redevelopment is a very relevant topic to this issue.

To paraphrase the World Bank's report: in the urban development project, the bank will support Mauritania's central and local governments improving living conditions, and it will promote employment opportunities in the main towns, with a special focus in slums. It will further strengthen the institutional framework, and capacity for urban and land management. The project components includes: 1) provision of basic urban infrastructure in the main cities, which in addition to consultant services for technical studies and works supervision, include a ten-year program for slum upgrading in Nouakchott and Nouadhibou. To prevent future squatter settlements, land allotment, allocation, and development will be funded based on loan conditionality with a twenty years reimbursement plan, and five-year grace period. Labor-intensive economic, and environmental protection activities will be promoted, implemented in partnership with the private sector, namely for crafts, and fishing activities, agricultural market development, and, solid waste management; 2) access to micro-credit for land tenure regulation, home construction, or enterprise development, supported by nongovernmental

organizations, and financial institutions, and, financed only by the Government, so as to extend ongoing micro-credit programs; 3) provision of technical assistance, and training for institutional, and capacity building for the development of urban communities, and micro-enterprises, in addition to strengthening municipal, and government administration capacity; 4) financing of incremental expenditures incurred on account of project management, auditing, monitoring, and operating costs of implementing agencies.

(Quoted from www.worldbank.org on February 21, 2004).

This loan is the result of the recent debt relief program that the World Bank is administering to the Third World countries for exchange of good governance, more democracy, and more economic development.

If this project works, it can be the solution to the uncontrolled urban growth problem that Nouakchott is experiencing. However, in the past, Mauritanian government had received many donations or loans for the same or similar purposes, but not a lot were accomplished because of unaccountability and the government hidden agenda: corruption, mismanagement, and experts did not have control over the projects, and importantly the beneficiaries were not involved in the decision-making process.

The Contributions of NGOs

In the recent international NGOs' literature, an important question was raised about if international donors should directly deal with the beneficiaries or go through the government. It is almost impossible for the donors to not involve the government because they control everything, and especially they have the complete control of financial institutions and the banking system. However, the donors should have a close look and a

periodic follow-up of the projects they are financing to make sure the money is utilized properly and that the beneficiaries are benefiting from their donations.

Table 13 NGO Operations in 1989

NGOs	Regions	Objective	Budget
AFVP	Al-Assaba, Guidimaka, Gorgol	training local craftsmen, well sinkers, and health workers	\$524,048
CARITAS	Adrar, Al-Assaba, Brakna, Nouakchott, Gorgol, Inshiri, Tiris, Trarza	food aid, micro-projects, women promotion, market-gardens, education, social services, rural development, small projects	\$813,416
DOULOS	Nouakchott	mother/child care	\$964,433
FLM	Nouakchott, Al-Assaba	research, women and social action, basic health care, rural development	\$740,000
Oxfam	Trarza, Al-Hodh Al-Gharbi	rice decorticators, rural development	\$246,381
TDO	Nouakchott	mother/child care	\$366,667
WVI	Nouakchott, Al-Assaba	health education, mother/child care	\$524,000

The contribution of INGOs in Mauritania: Source Ould-Mey 1996.

VIII-FEEDBACK PLANNING MODE: PARTICIPANT OBSERVER'S RECOMMENDATIONS

Finally, a feedback planning mode looks at what Mauritania has accomplished in urban planning since independence until today by analyzing what did not work or what was not efficient. I offer recommendations based on other models from elsewhere and from a participant observer's point of view.

A-SHORT TERM APPROACH: RURAL-URBAN CONNECTION

NSF Approach on African Urbanism

Recently, the National Science Foundation (NSF) funded a project in Africa, supervised by BARA (Bureau of Applied Research in Anthropology) here at the University of Arizona. The project proposes to use remote sensing images of 20m, 10m, and 5m resolution from 1982-1998 to document urban change in six cities located in arid regions of Africa: Marrakech (Morocco), Dakar (Senegal), Bamako (Mali), Niamey (Niger), Dodoma (Tanzania), Gaborone (Botswana). They will also use what they call a ground truthing technique, where people actually go and visually check what the satellite imagery had recorded. The computer data later will be modified by additional human inputs, such as physically determining a shantytown's border on the picture captured by the satellite. According to BARA's report, the project will focus mainly on approximately 200 household interviews per city around three main points: the first point is oriented towards the livelihood strategy histories of the urban population. The second is focused on the relationships between natural resource use between 1982 to 1998 and changes in urban patterns. The last element is interested in the differential impact on the poor, the government, multi-lateral agency, and NGO projects while the project is in its implementation phase.

More interestingly, the final phase will consist of creating a database including all the processed satellite imagery and the results of the household interviews. The results will be made available later on in French and English to all African institutions associated with the project and placed on the worldwide web for other researchers to use. There will be a GIS section of the project that will mainly help to understand the relationships

between land uses and/ or cover change in arid environments and urban change as well as answer many questions about the recent “uncontrolled” urbanization in the African continent. The choice of the arid land regions is very important and will play a major role in the project because they all have something in common: drought has been one of the major causes of urban growth in the last three decades in these countries.

One of the most important parts of this project is that, upon completion the database will make it possible for researchers and planners to compare the options and strategies available to poorer sections of the urban population across six African regions. Hopefully, the project will facilitate the development of original urban research that is applicable to more than one African nation. The database will also allow planners, social workers, health care professionals, developers, economists, and political decision makers to study in-depth and implement other projects in the area, because it will be very easy to track the identified populations.

I would like to see this kind of project implemented in Mauritania, and I believe it will deal well with urban growth and its ongoing problems in Nouakchott. Here are some of the reasons why I think this kind of project will be successful in Mauritania: first, the project is supervised and fully run by a third party (BARA). Second, all people involved in the project are subject matter experts. Third, there is direct contact and interaction between the project workers and the targeted populations; no national or state agency is monopolizing the implementation of the project. The beneficiaries are not biased; they are not pressured by anybody, as is usually the case if government or state employees conduct projects in the country.

Finally, we know that the project has a high probability of living up to its expectations. It is very important for BARA that the project be successful because this is a model project for many Third World countries. It is the first ever done and funded by the NSF that uses high technology to study urban development in the Third World. It is very different from the classic methods used to do a project; there is a lot of hope in this project for all parties involved. This kind of project might work very well in Mauritania because there is no land use “exclusion” (both rich and poor neighborhoods are selected in the sample size). The project is very representative of the city and very diverse because each sector in the city is given equal importance in the study; and it is an innovative approach because the implementation process is through municipal-level governments.

Hierarchy of Cities

Decentralization is a key element in this process. It is important to decentralize some of the services in the city of Nouakchott to other cities and regions of the country, such as radio and television broadcasting, economic and “industrial” development projects, professional and technical training centers, and universities. This will allow other cities and regions to play the role of a city, which will attract more rural migrants and students, who will not need to go to Nouakchott to find these services. A Mauritanian administrator once told me that the young countrymen are attracted to the city because of all these modern things they hear from their friends and families who come back from Nouakchott. He believes that pretty much everybody in Mauritania who lives in the countryside has dreams about living in the city.

The decentralization needs to be sound and rigorous policy. A good example of decentralization policy in Mauritania is the Ministry of Rural Development. It appoints in

each region a regional representative who is autonomous (very important) and who is in charge of the agricultural development of the region. Decentralization would be a very important step towards reducing the human flow from the countryside to Nouakchott in particular and urban agglomerations in general. This cannot be done without power sharing and decision-making at the local level. Unfortunately, one should realize the inherent difficulty of decentralization programs or policies in Sub-Saharan Africa. No one can pinpoint a successful decentralization in Africa in general and West Africa in particular.

Women Involvement

Women are needed in the process of Planning. Their role needs to be stressed more and addressed more. Women should be involved in the political, social, and particularly in the economic framework and decision-making (see Journal of the Society for Applied Anthropology, 2002). They are at the core of children's education; they are an important asset to the country's progress. The government should advertise more and encourage more women's education, make universal basic education mandatory for all children; create laws against women's sexual and psychological abuse from men, give them the right to child custody, and the right to divorce.

For those who do not have enough education, the government should sensitize them to invest in the informal sector by assisting them financially, by helping them have access to credit and banking loans. The informal sector is where many people make their living. Many economists and specialists of African countries agree that the informal sector's development is one of the soundest policies to solve the economic problem of the new urban dwellers. The informal sector is very popular and lucrative in Nouakchott,

especially for women; they dominate in that sector. Many women access their business assets through funding collectives, rotating credit associations locally known as “tontines”.

Real Empowerment of Local Communities

According to Arturo Escobar (1995), the development literature by Westerners on the economic problems in poor countries is based on the western approaches, meaning that the problems are only seen from western lenses, and western point of views. This compares and contrasts power and hegemony against powerlessness and ignorance, instead of focusing on truth and local realities (p 8). He argues that we have only used the western model. There are other models that are local, and that need to be explored. Fortunately, today many First World and Third World NGOs are combining forces to implement a model that is based on the combination of both the western model and local model of means of production and/or means of transaction. Many international NGOs working with local NGOs in providing childcare, primary education, income generating activities, and sanitation; are using some local expertise.

International Financial Institutions' Contribution

I recommend that the IMF and the World Bank to go beyond putting a human face on the structural adjustments. Why would we need a human face on these reforms if they were working? These institutions need to mix local realities with their economic reforms meaning many people have talent and skills but have limited education, and do not have access to credits. The institutions should find a way to make credit accessible to these populations with reasonable interest rates. The institutions need to involve the populations and the government and get their input on what they think about the projects

that are intended for them before they can be implemented. I believe that is one way to find a sustainable solution to the problems the poor experience. This would support the mission and objective of the World Bank and IMF. Incorporating poor people could reduce existing corruption and exploitation, making the bank more accountable.

Stronger Government Role

I believe that in countries like Mauritania, the state ought to play an important economic, social, and cultural role in the lives of its people. Leaving the fate of the people to privatization and the market to bring about considerable changes is not a guarantee, at least not for many years to come. What Mauritania needs is a change in its leadership's management of the economy, an end to injustice, racial inequality, and the unequal redistribution of resources. Since leadership change in Mauritania is not going to happen in a near future, I still recommend the leadership in power to balance its development programs among the regions, to make decentralization a reality, not a political jargon. Today in Nouakchott, decentralization towards urban development, poverty alleviation, and Income Generating Activities (IGAs) are still buzzwords, not implemented realities. These notions are important, desirable and implementable. The government needs to dissociate itself or at least decrease political and broken promises and pass to actions.

Good Governance

Many theorists believe that freedom and good governance are the best means for economic development. When citizens of a country have freedom, transparency, equality, and the rule of law, it encourages them to be more creative and more competitive. In

other words, democracy and good governance are the sine qua non for economic take-offs in Sub-Saharan Africa, and Mauritania is not an exception.

B-LONG TERM APPROACH: FOCUS ON GIS EDUCATION

Geographic Information System: A Rational Planning Model

Recently, geographic information system has become an indispensable tool that helps provide accurate data in many domains, particularly in urban planning, land use management, environmental assessment, endangered species protection, and the tourism industry. Many city planning and urban management businesses both in the public and private sectors rely on GIS techniques to help them in their decision-making process. The utilization of GIS is still a luxury for many developing countries even though it can contribute to solve many ongoing development problems in these countries; especially when it comes to obtaining reliable data. Geographic information system has a big advantage over many other fields because of its interdisciplinary aspect. Developing countries are desperately in need of having access to such multifunctional tool to help them develop and prosper economically and socially.

The use of geographic information system in Third World countries is still a luxury. One can say there is not much GIS involvement in these countries. The main reason is due to the fact that governments in the Third World countries do not invest in education, and they do not have the money to afford GIS technologies. Establishing one GIS network in one government agency can cost millions, let alone establishing GIS networks in every development agency in these countries. Presently, we cannot talk about GIS training or education in the education systems in developing countries but it is highly recommended and desirable.

However, there exists some GIS uses in developing countries in few agencies or those funded by International Nongovernmental Organizations (INGOs) or by cooperation of foreign universities. For example, the Flemish Association for Development Cooperation and Technical Assistance (VVOB) has during the last five years sent a group of GIS professionals to different Ecuadorian universities. The idea of this cooperation is primarily to improve the academic standards regarding GIS related subjects. A complementary benefit, however, the implementation of GIS in both private and public projects. Experience was gained in the field of GIS application in collaboration with academic staff and students within the faculties of civil, agricultural and/or computer engineering of the National Polytechnical School (Quito), the university of Cuenca and the National University of Loja (p1); (quoted from http://www.ncgia.ucsb.edu/gishe/program_files/papers/deckmyn.html, March 18, 2004).

Currently, developed countries such as Belgium assist poor countries by sending their experts with their technologies to these countries, instead of cash or loan assistance. This is mainly due to the fact that in the past, Belgium helped these countries in cash assistance but their corrupted governments did not use the money wisely.

Governments in Third World countries should introduce geographic information science mainly in universities. This is especially important, considering the fact that there are few reliable statistics and data collection in these countries. Many things are done with little technology and little expertise due to the lack of training, lack of new technologies, and lack of expertise in data collection information. GIS can be very useful in solving the problem of statistical information and data collection.

The Approach of Geographic Information System

The use of GIS in developing countries should be through a participative approach; meaning it should involve the local knowledge and involve the targeted populations and their communities into the decision-making process. GIS experts should also consult the local communities when gathering data for their mapping, spatial data analysis, and/or remote sensing. Without such involvement, no matter how good GIS is, it will fail its mission. Pickles (1995) argued that, key land reform decisions are being made by South African and international “experts” with very little incorporation of local community knowledge and expertise. The victims of apartheid have been essentially excluded from the debate. As a result, the parameter of future policy and definitions associated with the emerging rural land reform discourse are being shaped in a way that will make successful local implementation difficult to achieve (Pickles 2007).

A common mistake is usually done by international experts: they do not always value the local knowledge or proactively seek advice or information from local communities; they mainly rely on the local government so called scientific database which is usually biased because of political reasons. As my GIS professor likes to say: “you learn GIS on the sole of your boots” (Yool, 2002). Therefore, international experts need to dig deeper, and not only rely on official information which might be sometimes incomplete. Most of the time, local populations know better than the local government because they lived all their lives in these communities, and these development projects are targeted for them.

The United Nations should encourage the utilization of GIS in projects they fund in Third World countries, because GIS can contribute to many development problems in

developing countries: decision-making, health, land use, education, environment, etc. GIS is a more indispensable tool especially when its interdisciplinary aspect is taken into consideration. That's the main contribution of GIS. In his book *Ground Truth* (1995), Pickles stated that, in redefining and planning the future landscape, spatial data and information represents a valuable commodity. All the major political parties in South Africa now recognize the potentiality of GIS for electoral purposes, regional planning, and land reform. Access to GIS and data, therefore, has become highly politicized (Pickles 2005).

The true power of geographic information system is its ability to integrate many other disciplines and information sciences to help leaders and managers to make key decisions even if they have little or no knowledge of GIS.

GIS can contribute in many sectors of development in the Third World countries, especially in land use reforms, environmental protection, ecotourism, health, nutrition, and the prevention of tragedies like famine and hunger. According to Williams and others (2004), the growing trend towards decentralization of national development planning activities to regional, sub-regional or local government bodies means that decision-making must be closer to the grassroots level. Planners therefore need to use more detailed techniques of spatial analysis. The lack of suitable available maps and data in developing countries, however, frequently means that tasks which might be routine applications of GIS in developed countries, often become pioneering ventures when used in developing countries. GIS provides a powerful tool for making land use choices or monitoring the spatial aspects of the current problems and uses of infrastructures (Williams, p 1). (Quoted from: <http://wwwsgi.ursus.maine.edu> on March 18, 2004).

Limitations of GIS Use in Developing Countries

The use of geographic information system in developing countries may encounter many obstacles. In his book *Policy Issues in Modern Cartography* (1998), Taylor said that in many developing nations, such as India and China, the map is a classified document and not available for general use. The reasons for this are those of military security (Taylor, p 197). The other factor is that there are no local GIS experts, so once the international expert withdraws from the project, there is no expertise in place to carry on the project. Most of the time experts are sent for a limited period of time, and they do not usually train local experts, and that can be very problematic. Furthermore, many developing countries buy their materials from different vendors, and most of these products are market driven rather than demand driven. On the other hand, sharing data with the public can be very complicated due to the bureaucratic routines in Third World countries. Al-Romaithi stated that, the availability of information is very important to a GIS facility. Whenever information availability is restricted, the GIS utility suffers. Hence the usual inclination of an organization or department to monopolize its own information is one of the major obstacles to a successful GIS. Therefore, one of the problems detected in implementing a GIS facility may involve conflict with the bureaucracy that hinders the information flow (p 3); (quoted from: http://www.gisqatar.org.qa/conf97/links/p12_j.html, March 18, 2004).

Making information available to the public in Third World countries can be very complicated and challenging. Sometimes, local experts work very hard to obtain their data with meager financial assistance and little technology, so giving that information away to someone else without being compensated or involved in the project can be

frustrating. But, the problem with sharing information is more politics driven than copyright driven.

No matter what limitations GIS use in developing countries might encounter, it is fundamental to encourage and push authorities in these countries to teach geographic information system, and to train students and civil servants how to use this indispensable tool. According to Haines-Young and others (1993), GIS as a tool is about aiding managers to carry out their jobs more efficiently and effectively, and, more particularly, about better decision-making (p 223).

The contribution of geographic information system will be positive especially in the areas of land use reform, urban planning, environment protection, and socio-economic organization. However, one thing is certain: like any other technologies used before by previous experts in the development projects in developing countries, GIS missions will fail if its experts do not learn from the mistakes of previous experts who did not take into consideration local knowledge, and did not involve the local populations into the decision-making process.

CONCLUSION

The uninterrupted migration flow of rural populations to urban centers in search of a better life is causing uncontrolled urbanization, poverty, unemployment, health issues, and unsanitary conditions in many West African cities. This will continue another hundred years as long as the governments in these countries do not change their policies, and more proactively involve the rural world into major development and investment programs (see Rural Poverty Knowledgebase at www.IFAD.org, 2004). This is the best way, and ultimately the only way to retain rural populations in their places of origin; and

it can be a solution to a more balanced planning policy for the development of the cities, and improving the quality of life of the populations.

Urban growth in Nouakchott is not intrinsically negative, but the urban growth rate is alarming. Each year, more rural populations move to Nouakchott; the flow is a continuous and so far irreversible process. The policies and programs that the Mauritanian government is using to fix rural populations in their localities are not very efficient. Life in the countryside is becoming more difficult, populations are poor and inactive because activities linked to rural life are almost non-existent; this is due to the fact that there are no more rainfalls, decimated cattle, and the drought and the desertification are still progressing (see Finan and Langworth, 1997). For young rural residents, it is hard to accept the misery their families live in. Going to the big city becomes the only alternative that the young men in the countryside have. At least, they hope there is something they can do to earn a living, either formally or informally (the latter is most likely to happen). All of this makes the process of rural-urban migration inevitable.

Therefore, it is very important for the government to come up with more sound policies that can slow down or reduce the migration flow. This means the implementation level must be very efficient. Many policies and programs have been tried in the past, but they did not live up to their expectations because the implementation was inefficient. The government needs to change its decision-making and/ or its implementation techniques to see what is not working. They might try different or new approaches such as contingency planning, rational planning, planning as a social learning, feedback planning, and incremental planning, or a combination of all of them. For David MacLeod (2004): “In

practice, planners make repetitive attempts to solve problems, starting off being incremental and becoming more comprehensive. They thus take advantage of the strengths of each approach while avoiding their respective shortcomings, a methodology known as “Mixed Scanning”. Planning departments use the Rational Comprehensive Plan (RCP) approach to develop the Official Plan and employ the Incremental approach to implement it in daily planning practice”(p 4); (quoted from:

<http://www3.sympatico.ca/david.macleod/PTHRY.HTM>, March 30, 2004).

It is important that the experts and the populations themselves are included in the decision-making. Projects are more than political; a broader coalition of parties needs to be involved to broaden development in Mauritania which is unbalanced and unequal. It is very important that the urbanization process in Nouakchott be sustainable because more and more cities in Mauritania need good urbanization programs; Nouakchott should be a model for the rest of the country.

Early planning practices in Mauritania especially the early French defensive planning model was inadequate. City and town planning did not have an important agenda during the French colonial administration as well as during the neocolonial phase in the early 1960s. One can assume that the French (defensive) planning model has been left behind. Therefore, a turn to rational, planning as a social learning or adaptive planning with feedback loop has been positive. This reform movement in planning can be a better approach to city and town planning in Mauritania.

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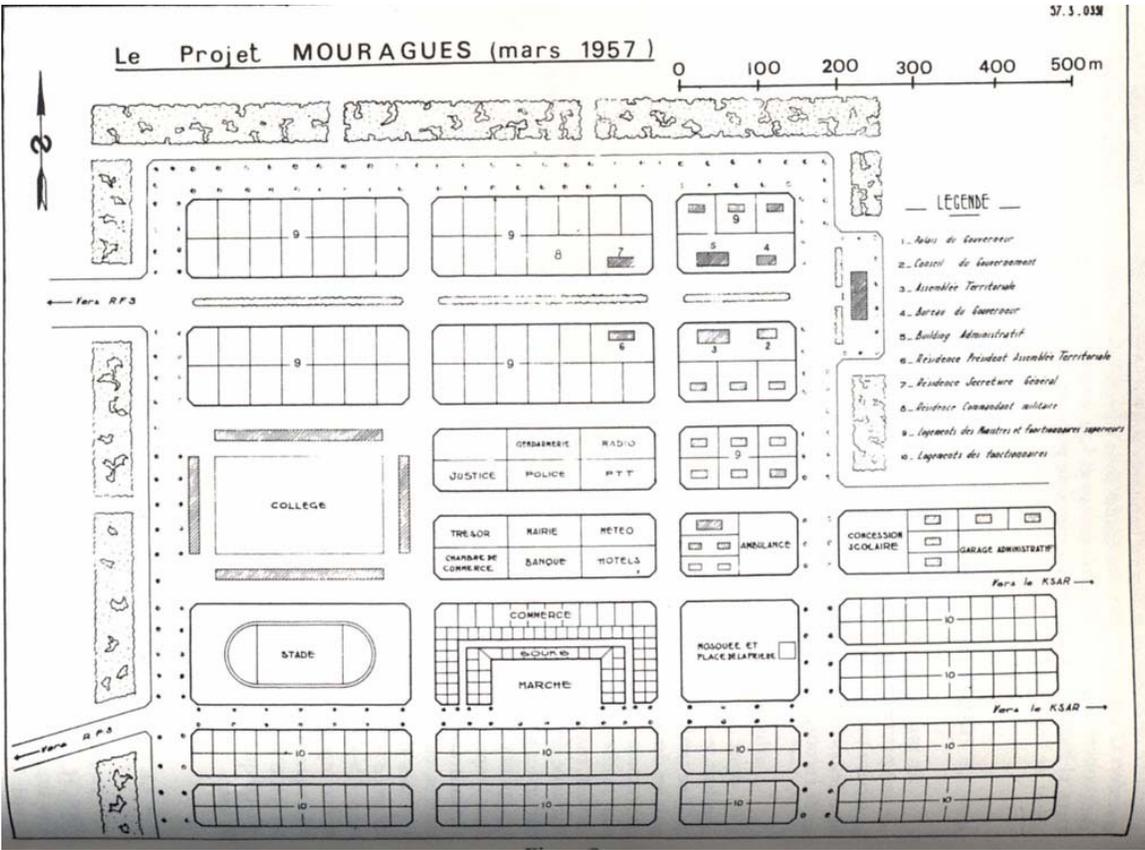
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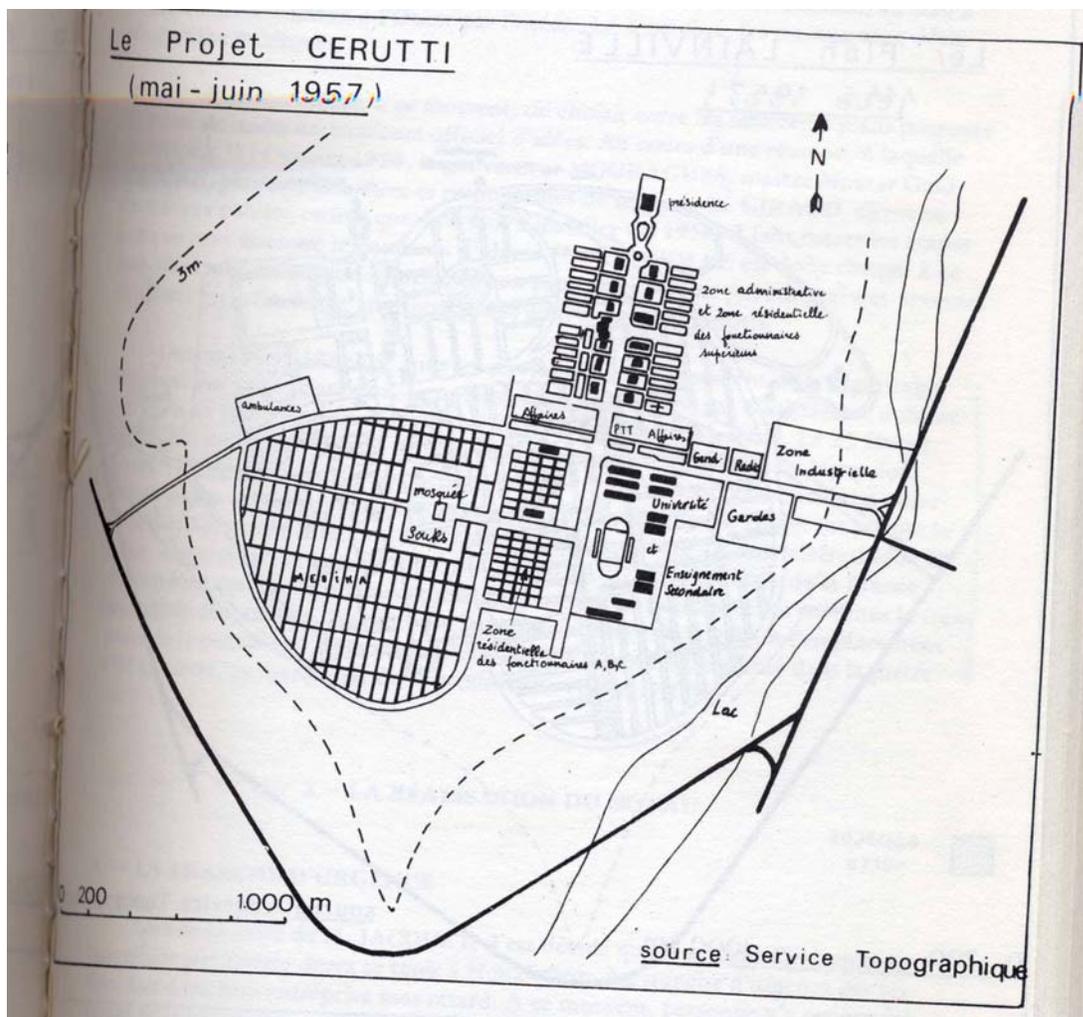
APPENDICES

Appendix A



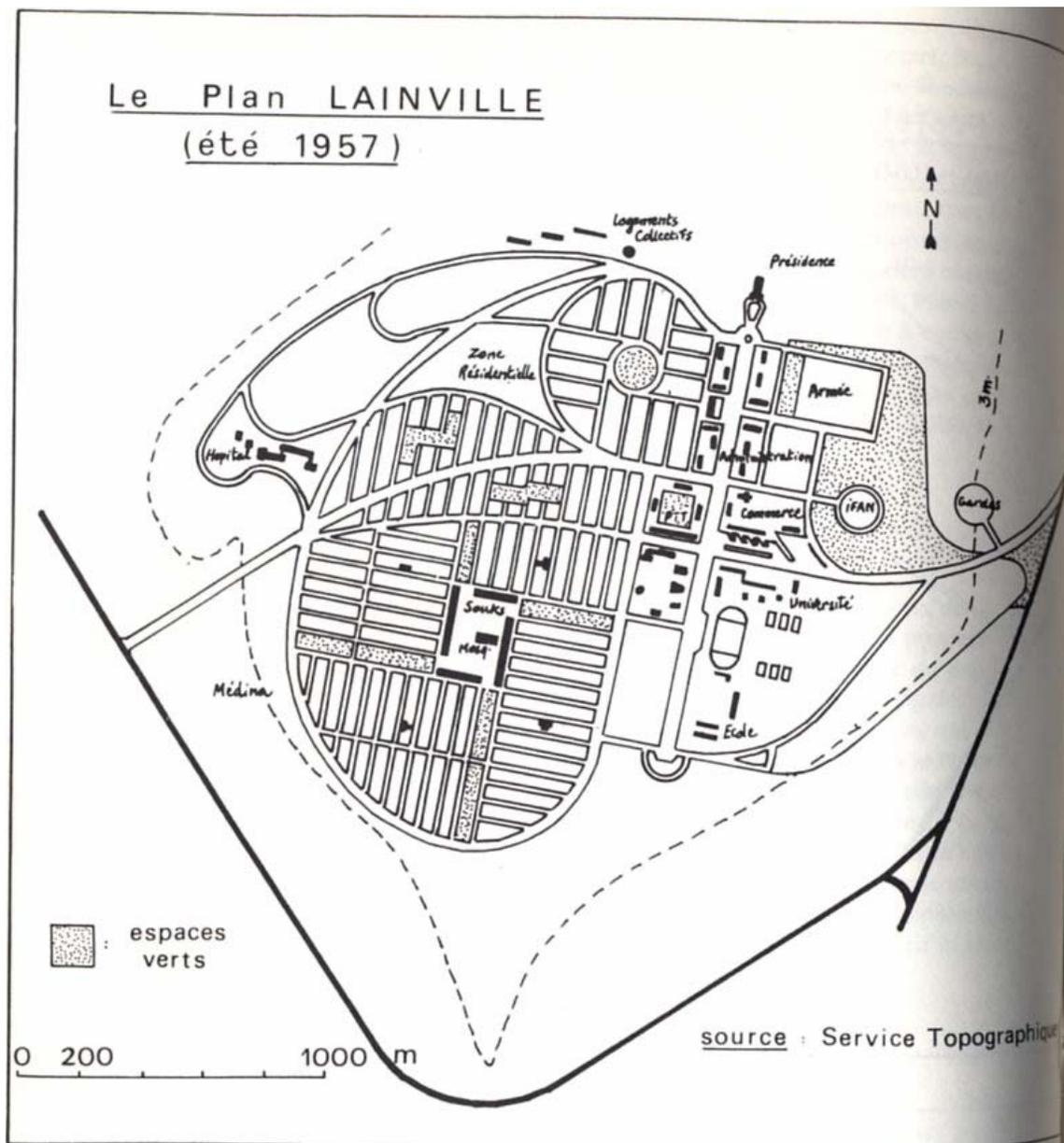
Le Projet Mouragues (mars 1957). Mouragues was the governor of Mauritania Source: Jean-Robert Pitte 1977.

Appendix C



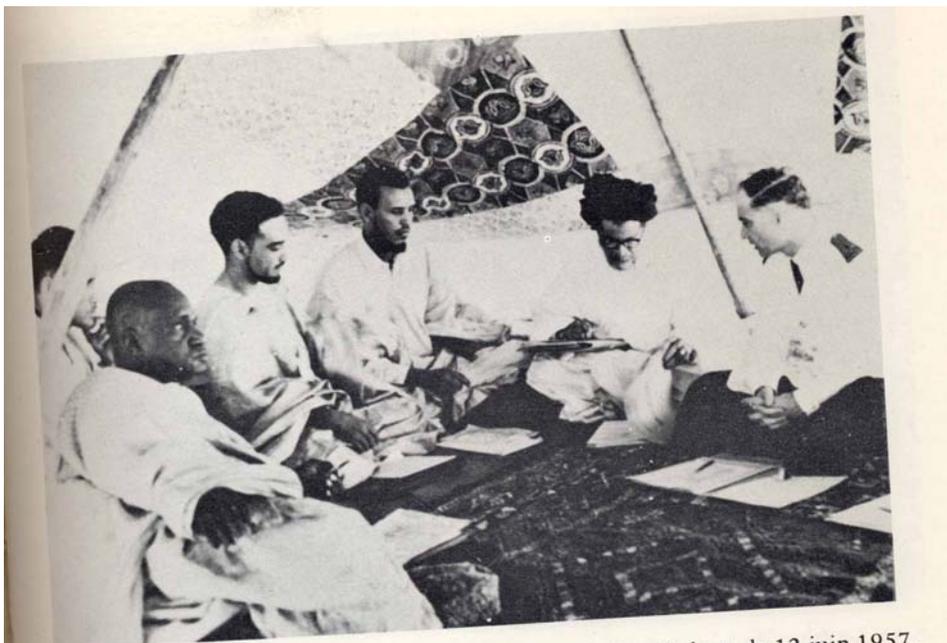
M. CERUTI MAORI was an architect who won Le Prix de Rome and he was the architect of the general government of AOF in Dakar. He had a more precise plan, and he borrowed ideas from the previous plans. Source: Jean-Robert Pitte 1977.

Appendix D

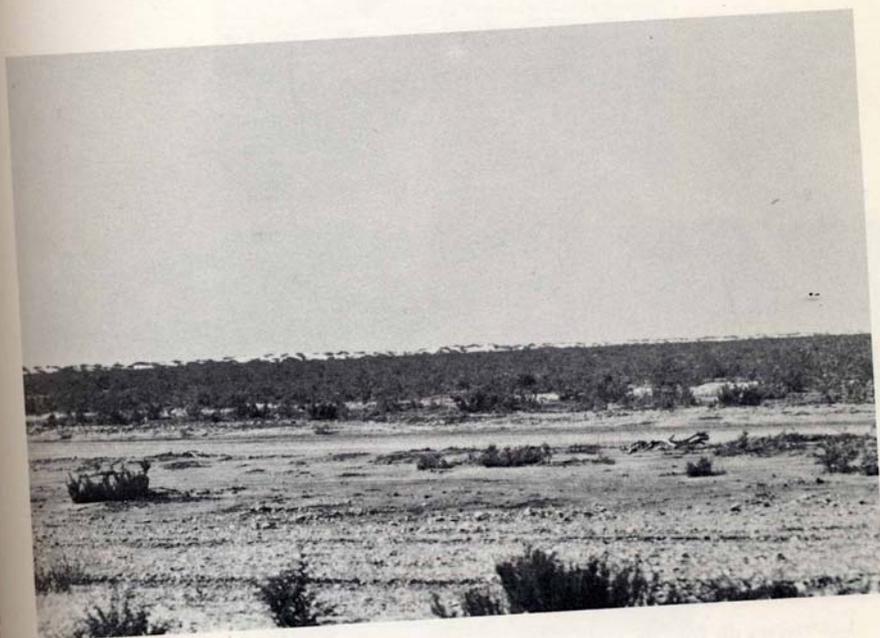


Le Plan LAINVILLE (ete 1957). LAINVILLE was an architect at the office of urbanism and public works of Dakar. He also borrowed ideas from the CERUTTI plan. He submitted his plan in summer 1957, and on July 4 of the same year, the territorial general assembly approved his plan. Source: Jean-Robert Pitte 1977.

Appendix E



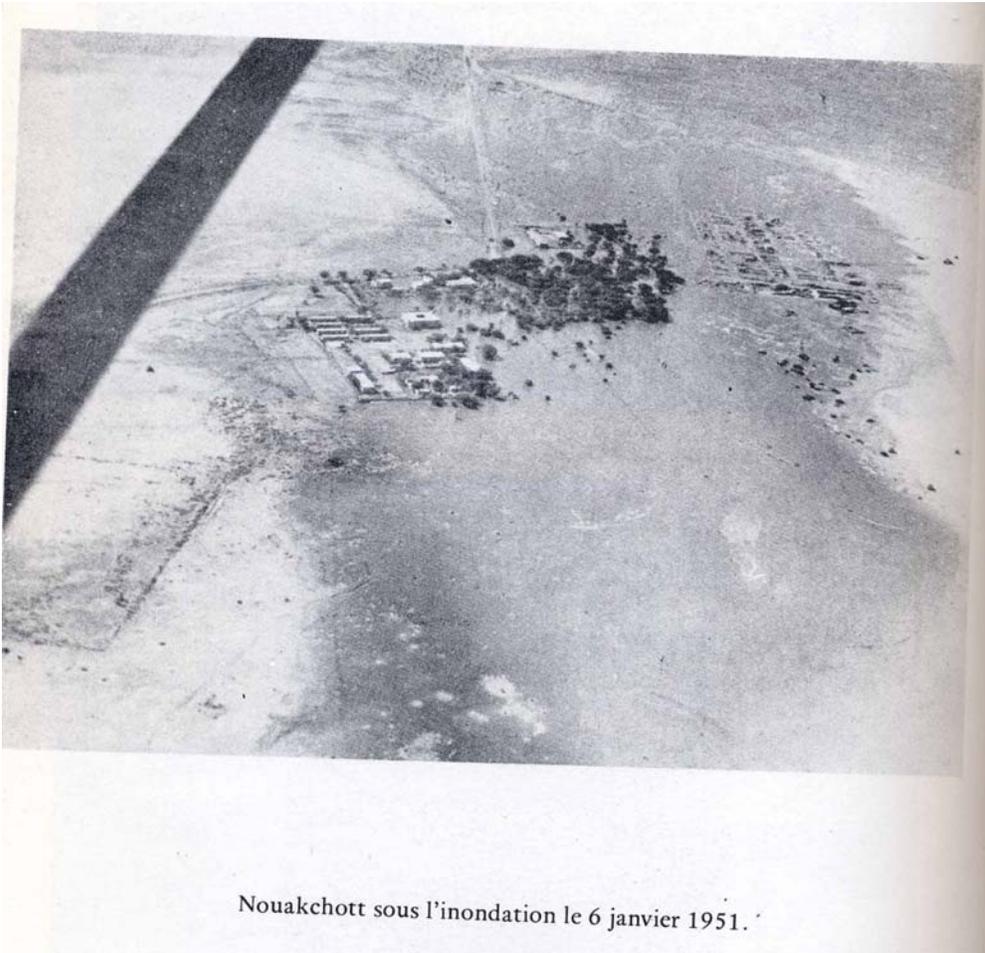
A – Le premier conseil des ministres sous la tente, à Nouakchott, le 12 juin 1957.



B – L'Aftout es-Saheli et le cordon dunaire.

The first council of the new government was held under a tent in Nouakchott. The city was under construction at that time. This is another indication how a fast decision was made to build the capital city.

Appendix F

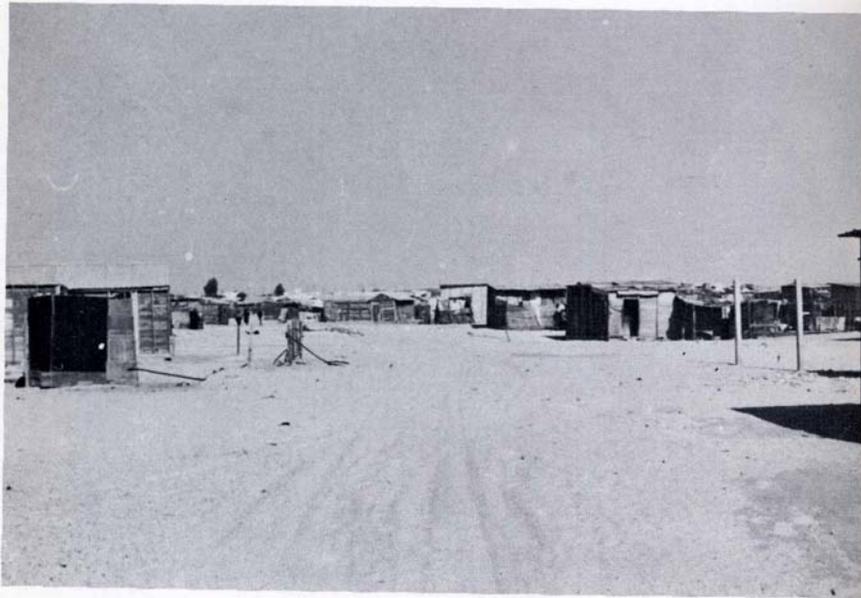


Nouakchott under water in 1951. This shows that the lack of planning might contribute to the flooding in the early creation of Nouakchott. Source: Pitte, 1977.

Appendix G



A — Un quartier de tentes au Sud de la ville.



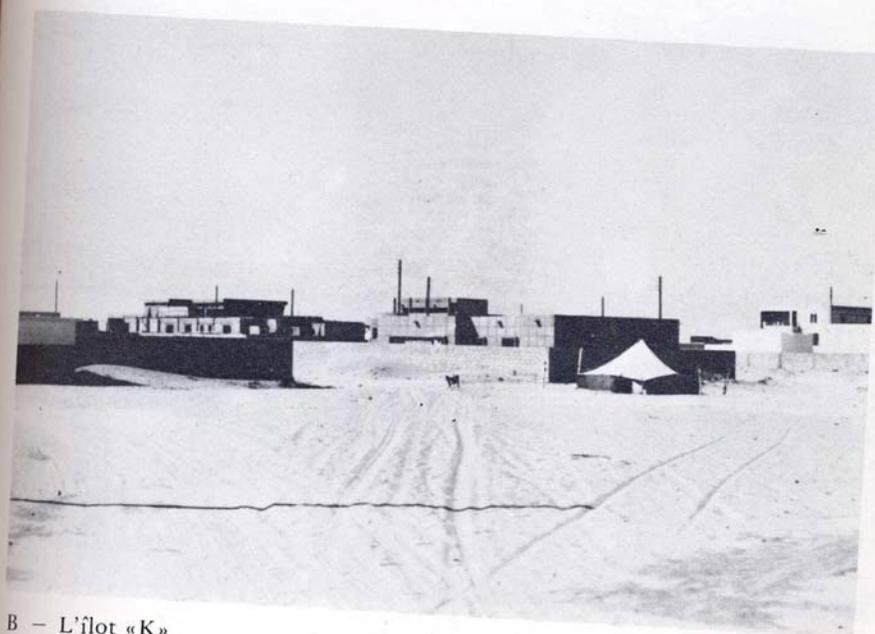
B — Le quartier de baraques dit «Palestine».

An example of shantytowns around Nouakchott. Source: Pitte, 1977.

Appendix H



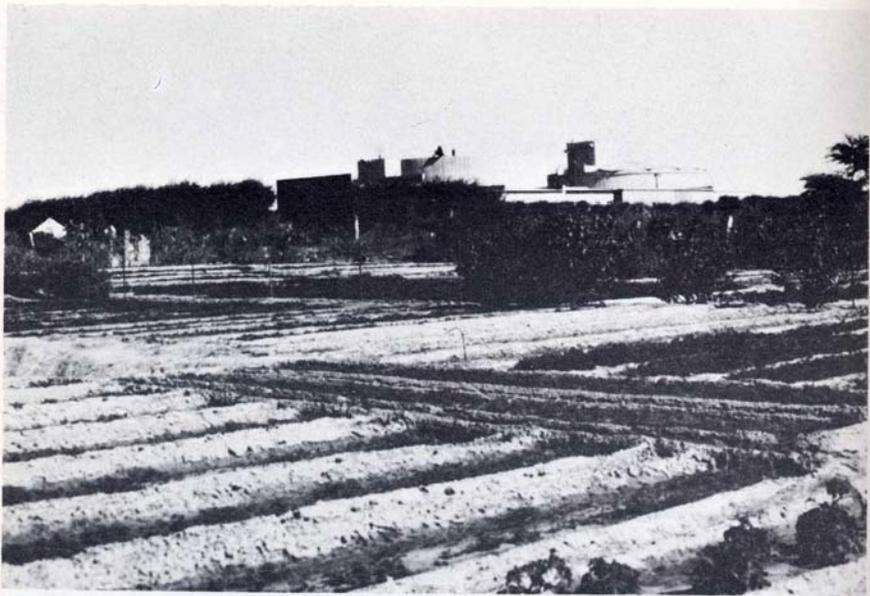
A – Une distribution d'eau dans un quartier de tentes.



B – L'îlot «K»

Water distribution in a shantytown. Water was carried by cistern trucks that bring water from Rosso to the populations in Nouakchott. Source: Pitte, 1977.

Appendix I



A — Le périmètre maraîcher et la station d'épuration des eaux

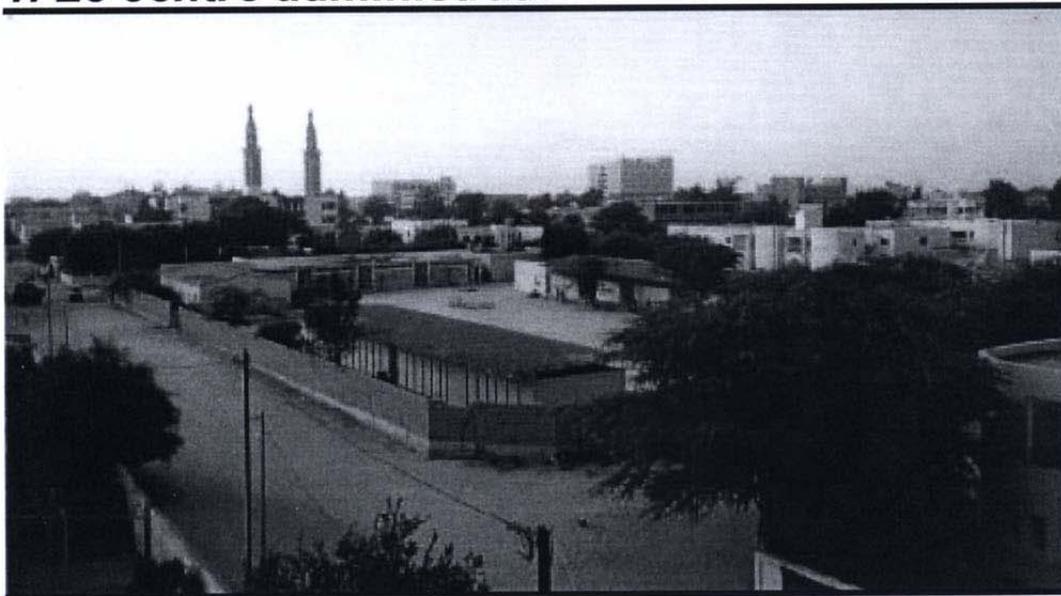


B — La partie Est du grand souk de la capitale.

The gardening perimeter and the wastewater treatment station, where the urban gardening in Nouakchott is practiced. Source: Pitte, 1977.

Appendix J (*The administrative center of Nouakchott; see picture on next page*).

1. Le centre administratif



Le centre administratif et commercial est situé dans la Moughataa de Teivragh-Zeina, sur un plan datant de 1958 et dessiné par Lainville, alors architecte à la direction des Travaux Publics de Dakar.

Le plan orthogonal laisse la place à de grandes avenues, contrastant avec le Ksar, noyau historique de la ville. La végétation est présente dans des proportions que l'on ne retrouve pas ailleurs sur l'ensemble de la ville.

Les bâtiments, entièrement en dur et de haut standing, s'élèvent sur deux à trois niveaux, accueillant les fonctions tertiaires, sièges d'entreprises. L'administration et le pouvoir politique, occupent ce quartier, à l'abri des grandes artères, dans de luxuriants parcs. Les grandes banques montrent leur présence par de très grands bâtiments d'une dizaine d'étages.

En résumé, le pouvoir politique et les grandes entreprises sont présents, laissant peu de place à l'habitat et faisant du quartier un secteur peu dense de la ville. La concentration d'un très grand nombre de sociétés et autres représentations internationales fait que cette zone occupe une place unique en Mauritanie.

Données de base

Faible densité

Activités: tertiaires à haute valeur ajoutée

Types de sociétés: banques, hôtels, compagnie aérienne...

Situation: plateau (hors inondation)

source: urbaplan, 2000

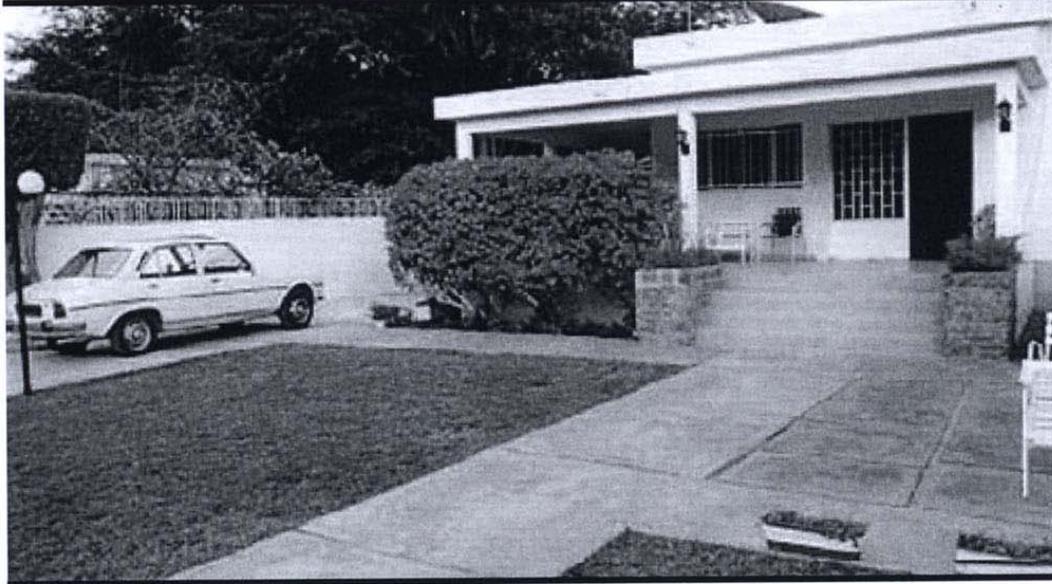


Source: ADU, 2002

Appendix K (*The elite and high middle class neighborhood, see picture on next page*).

3. Les quartiers résidentiels

Une villa de Tevragh Zeina



Les résidences de très haut standing sont regroupées sur un site unique; la partie centre et nord de Tevragh-Zeina. La surface de ces parcelles peut atteindre 2500 m², ce qui donne une densité très faible pour le quartier, comprise entre 30 et 50 habitants/ha.

L'ensemble du quartier, même si peu de voies sont revêtues, bénéficie d'un taux d'infrastructures et d'équipements très élevé ; l'eau, l'électricité et le téléphone touchent la quasi-totalité des villas.

Contrairement aux zones populaires, qui développent un habitat construit autour de la cour, les " beaux quartiers " marquent une rupture avec les typologies traditionnelles. La maison s'installe soit au centre de la parcelle, soit sur une portion de celle-ci, laissant la place à un jardin d'agrément.

Les familles qui occupent ces bâtiments sont des familles réduites d'environ 5 personnes en moyenne, alors que le nombre de pièces est élevé (4 à 5 chambres à coucher spacieuses, plusieurs salles de bains, et caetera).

Données de base*

Exemple : Tevragh Zeina**

Population : 31.000

Densité de population : faible

Surface : 729 ha

* indicatives

**ces chiffres se base sur la partie habitée de la Moughataa de Tevragh Zeina

source: urbaplan, 2000

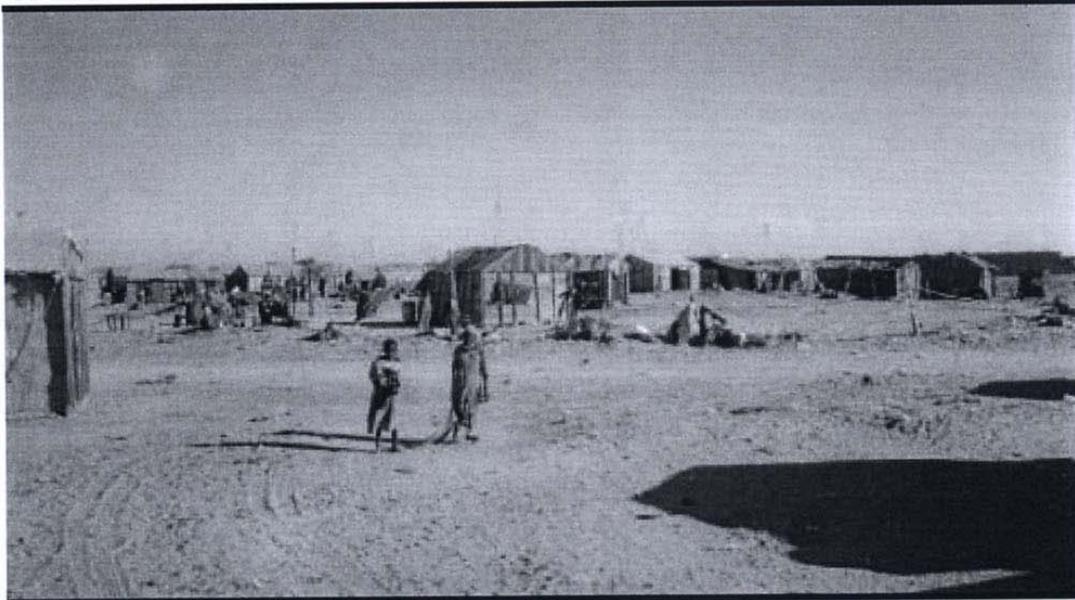


Source: ADU, 2002

This represents the residential area restricted to the wealthy and the middle-class.

Appendix L (“*KEBBE*”).*The typical shantytown in Nouakchott, see picture on next page).*

4. La Kébbé d'El Mina



Les habitants les plus démunis de Nouakchott habitent les kébbés, forme locale du "bidonville". La population s'installe, dans un premier temps, sur des terrains disponibles dans les interstices de l'urbanisation, plaçant des tentes. Si l'occupation est tolérée, l'habitat se transforme et la tente devient baraque en bois de récupération et tôle.

En 1975, près de 55 % des ménages de Nouakchott résidaient dans les différentes kébbés constituées, à l'époque, majoritairement de tentes. Cette proportion chuta à environ 37 % en 1981 avec la création des lotissements de recasement que sont les 1er, 5ème et 6ème arrondissements.

Kébbé désigne un dépotoir ou une poubelle; c'est le nom donné par les habitants eux-mêmes en référence aux camions poubelles à bascule qui servaient à déménager les habitations, d'un site à l'autre, en les déversant comme des ordures.

La plus célèbre kébbé est sans conteste celle d'El Mina, occupée depuis les années 70 et squattée de manière massive après la grande sécheresse et les inondations de Sebkha. La régularisation d'autres quartiers favorisa également l'arrivée d'habitants préférant s'installer sur ce site central que d'habiter des quartiers réguliers mais souvent trop loin du lieu de travail des gens.

La kébbé d'El Mina est installée sur un lotissement prévu à l'origine pour de l'industrie, ce qui pour les habitants rappelle la précarité de l'occupation et explique pourquoi, dans cet immense quartier, l'habitat n'a pas subi le phénomène de durcification du bâti.

Données de base*

Densité de la Kébbé: élevée
Population totale: 48.000

Nombre de personnes/ménage: 5,46

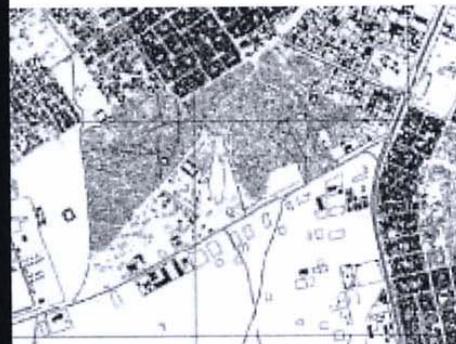
Nombre de pers./baragues habitées: 3,86

Pourcentage de la population totale: 7,85%

Surface totale habitée: 128 ha

** selon enquête Urbaplan (2000)*

source: urbaplan, 2000

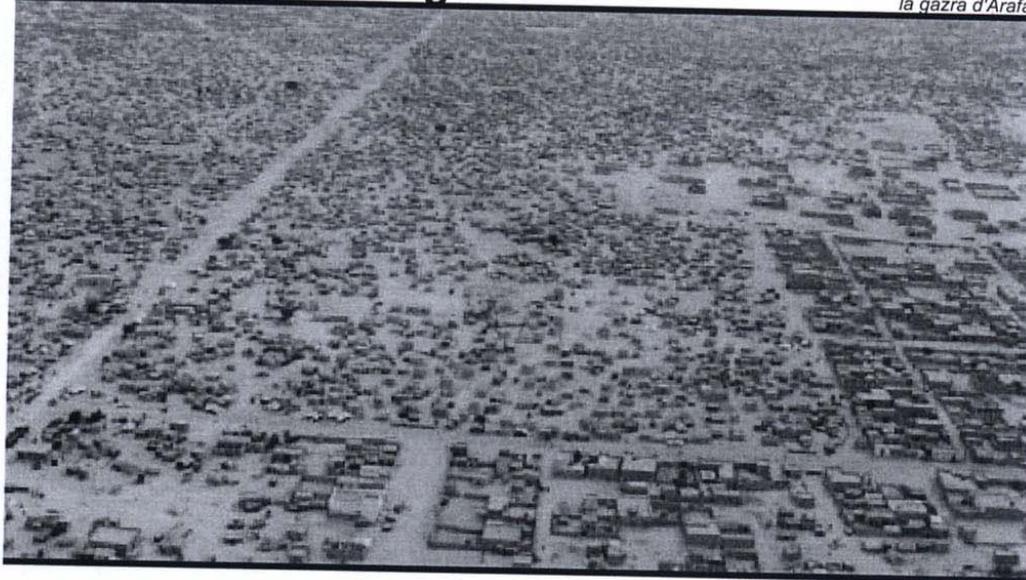


Source: ADU, 2002.

Appendix M

5. Les quartiers de gazra

la gazra d'Arafat



La gazra est un des deux types de quartier spontané que l'on trouve à Nouakchott. La grande différence avec les quartiers de type kébbé, réside dans le fait que les gazras ont subi un processus de durcification du bâti, les habitants attendant une régularisation du sol. La structure urbaine est inexistante ; les voiries, ou plutôt chemins, se créent entre les clôtures et les pneus délimitant des concessions.

Les grandes gazras sont celles de Toujounine, longeant la route de l'Espoir, de Tensweilim au nord de cette même route, de Hay Saken, sur la route d'Atar, et celle d'Arafat. De plus petites gazras font leur apparition en bordure de terrains lotis, comme une ceinture à la ville.

La gazra d'Arafat, particulièrement centrale par rapport à la ville, a déjà subi une première phase de régularisation foncière, ce qui a eu pour conséquence un afflux de squatters et une durcification du bâti. 47% des habitations sont, selon une enquête socio-économique datant de janvier 1996, en dur, c'est-à-dire fait d'assemblage de parpaings de ciment. La mauvaise qualité du parpaing, séché trop rapidement et trop salin, confère tout de même à cet habitat une situation de précarité. Le reste des habitations se partage entre les baraques en bois et celles construites en tôle. Il reste quelques habitations en toiles mais celles-ci ne sont aujourd'hui plus légion.

Données de base*

Surface totale: 888 ha

Population totale: 108.000

Population Arafat: 60.200

Population Toujounine ouest: 25.750

Population Toujounine est: 8.000

Population Hay Saken: 6.300

Population Tensweilim: 7840

Densité : moyenne

Pourcentage de la population totale: 14,5 %

*selon enquête Urbaplan (2000)



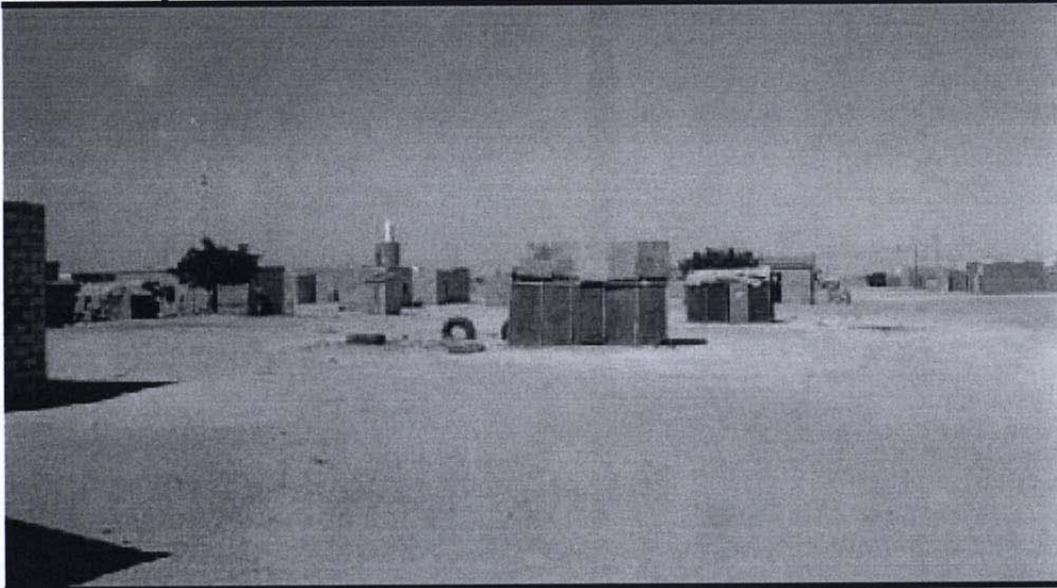
source: urbaplan, 2000

This is the example of shantytowns neighborhoods: not planned, not equipped, and lack basic infrastructure. Source: ADU, 2002.

Appendix N *(Example of plotted neighborhood but it lacks basic urban infrastructure, see picture on next page).*

6. Les quartiers lotis sous-équipés

Riyad



La genèse des quartiers sous-équipés est souvent liée à une volonté politique de recasement d'une population chassée de son quartier précédent. Ces types de quartiers se sont notamment créés suite au déguerpissement dans la kébbé d'El Mina, suite à d'importants incendies ou encore suite aux inondations dans la zone de Sebkha.

La caractéristique principale de ces quartiers sous-équipés lotis est que la grande majorité des habitants sont propriétaires de leur parcelle. Le pourcentage de squatter est très faible. L'entier des parcelles n'est pas occupé car le peu d'infrastructures et d'équipements en place, et la localisation souvent excentrée font de ces quartiers des zones peu accueillantes. Même si le potentiel de densification du bâti est très grand, il dépend entièrement de l'amélioration apportée aux infrastructures et équipements.

L'habitat se transforme lentement, en fonction des disponibilités de chaque propriétaire; le mur de clôture, souvent premier élément sur la parcelle, accueille petit à petit des pièces pour faire apparaître, après un long processus, une habitation.

Les trois principaux quartiers sont ceux de Riyad sur la route de Rosso, de Teyaret (nord) sur la route d'Atar et de Dar Nain, reliant la Route de l'Espoir à celle du nord. Une seule voie goudronnée traverse longitudinalement ces quartiers, les axes transversaux étant inexistantes.

Données de base*

Surface totale: 1481 ha

Population totale: 126.600

Population de Dar Naim: 59.000

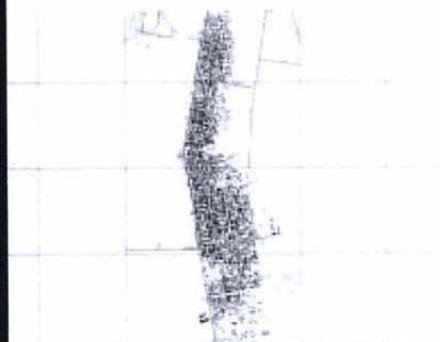
Population de Riyad: 50.000

Population de Teyaret: 17.600

Densité: faible à moyenne

Pourcentage de la population totale: 20,7%

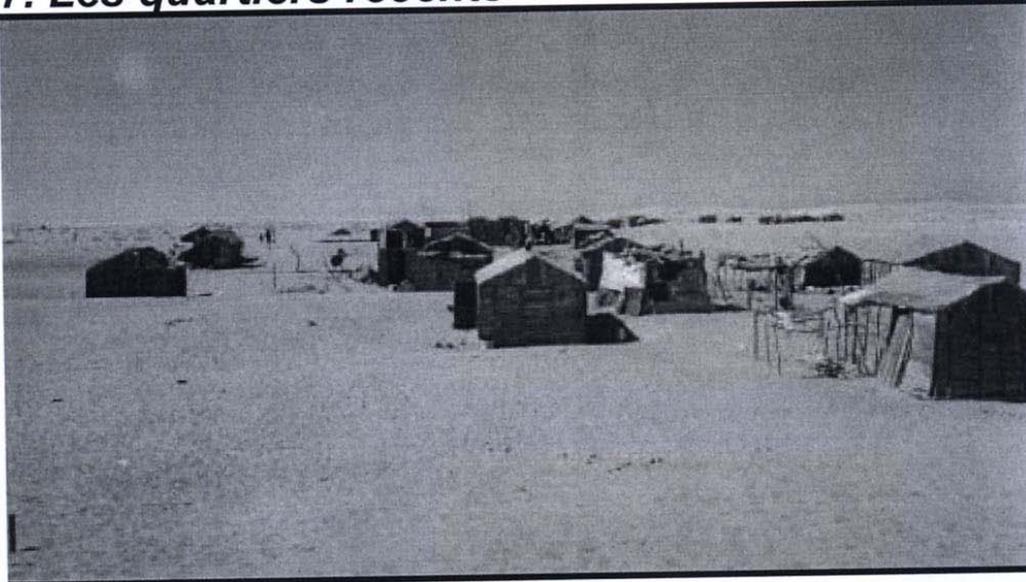
*selon enquête Urbaplan (2000)



source: urbaplan, 2000

7. Les quartiers récents

Kosovo



Les quartiers récents peuvent être rattachés à la catégorie des quartiers sous-équipés lotis, c'est-à-dire que le déficit en infrastructures et équipements est grand. Cependant, la transformation de l'habitat propre à ce type de quartiers - de la tente au ciment - est effective grâce notamment à l'appui d'ONGs présentes sur le terrain. C'est le cas pour le quartier de Saada où le Gret, et son projet Twizé, organise et soutient la prise de possession du site et la durcification de l'habitat, canalisant ainsi le développement du tissu urbain.

Les trois grands types d'habitat sont les constructions en dur, de dimensions restreintes, les baraques, construites en planche de bois et en tôle et les mahamels, habitations faites de piliers de bois recouverts de tissus aux dimensions minuscules.

Comme dans le cas des quartiers sous-équipés lotis, la majorité des habitants sont propriétaires de leur parcelle. Ils sont dockers, boutiquiers ou fonctionnaires pour le plus grand nombre. Le quartier n'a pas d'infrastructure économique propre, mais joue le rôle de cité dortoir ; seule l'économie informelle s'est largement répandue.

Données de base

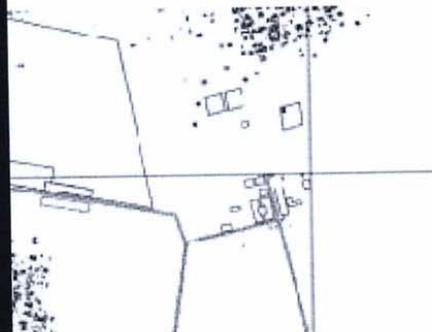
Quartiers: Kosovo, Dar Beïda, Saada

Situation de Kosovo: est de la route de Rosso, entre Saada et Riyad, au sud d'Arafat.

Situation de Dar Beïda: est de la route de Rosso (zone de Sebkha).

Situation de Saada: sud de Toujounine ouest.

source: urbaplan, 2000



Source: ADU, 2002

Appendix O (*New plotted neighborhoods, see picture on previous page*).

This shows neighborhoods that are planned but not equipped. These are neighborhoods such as Dar Naim, Ryad, and Teyarett.