Water and Sanitation Program

An international partnership to help the poor to gain sustainable access to improved water supply and sanitation services

GLOBAL SMALL TOWNS WATER AND SANITATION INITIATIVE

Comparative study of water supply and sanitation services management models in small towns of developing countries

Mauritania Case study

First findings

Introduction

In 1999, the World Bank's Rural Water Supply and Sanitation Thematic Group (RWSTG) and the Water and Sanitation Program (WSP) started a joint Global Initiative to study innovative management models for water supply and sanitation (WSS) services in small towns.

At the core of the Global Initiative are three case studies undertaken by national teams in Mauritania, Colombia and Vietnam. Based on an institutional and sectoral analysis and field investigations in several small towns, these case studies highlight the key issues and opportunities for improvement of water and sanitation services in small towns in each country and, according to the institutional, legal and economic context, the factors which can contribute to or limit the quality of service provided.

These studies focus mainly on the management of WSS services, documenting basic principles and best practices, constraints and bottlenecks to improvement of services.

WSP-West Africa began the case study in Mauritania during October 2000. The most interesting feature of this management system is a policy under which water supply services in small towns are delegated to local private operators called "concessionnaires", under what is in fact a leasing contract.

This paper summarizes the main findings of the case study. The final more detailed report is scheduled for June 2001.

For any comment or question, please contact authors or WSP in Abidjan

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National Context

Mauritania	
Population	2 300 000 hab.
Superficie	1 031 000 km^2
Taux de croissance démo	3 %
PIB par habitant	500 US$
Taux de change	1$ US=230 UM

Small Towns in Mauritania

Small towns in Mauritania are not the subject of any explicit legal definition. They reflect simply the recent demographic trends in the country : rural migration to the cities and a fast and increasing sedentarisation of its nomadic population. Many localities developed along the main roads and others experienced a strong population increase after installation of facilities (especially water schemes, that meet a very strong demand in this desert country).

In recent years, the country has thus experienced these significant changes in population distribution (Nouakchott, the capital city, grew from 5 000 to 700 000 inhabitants in less than 40 years) and this evolution is still ongoing.

The small towns do not have a specific administrative statute. They can be urban communes (municipalities), rural communes or simple villages without administrative statute.

The "commune" is a decentralized territorial community that is a legal entity. It has financial autonomy (budget from local taxes, sales of services, etc.) and some assets (excluding water schemes that belong to the State). A mayor manages it with deputy mayors and a municipal council.

Decentralized administrative structures

- 12 wilaya (areas) managed by a wali ;
- 40 moughatâa (departments) managed by a hakem (prefect) chosen in the Council of Ministers;
- and districts managed by a head of the district chosen in the Council of Ministers.

Decentralized local communities

- 40 urban communes (one for each moughatâa)
- rural communes
- villages without particular administrative statute

National strategy and principal actors of the sector

Since 1993, Mauritania has chosen to develop a national policy for the delegation of management of water services (excluding sanitation) in small towns to local private operators called "concessionaires" (however their contracts are more like a management/lease contract). These operators are presently acting in 190 of the 270 small towns in Mauritania that are equipped with water schemes.

Without setting up a very ambitious institutional framework as regards water supply, and starting from a relatively weak legal framework, Mauritania has developed a real and very efficient practice of delegated management for water supply.

The main legal basis

- Ordinance 85.144 of July 4, 1985 : "Water Act"
- Decree 61 66 of 2 July 1986 fixing attributions of the Ministry for Hydraulics and Energy and the Organization of the Administration of its department.
- Ordinance 87.289 of 20 October 1987 instituting the communes.
- Decree 93.124 of 21 December 1993 defining conditions for operation and management of drinking water equipment.
- Decree R189 of 14 August 1994 defining "concessionnaire" obligations.
- Decree 95.053 of 5 December 1995 approving the statutes of the National Company of Water and Electricity (SONELEC) who manage water supply in the 15 biggest cities of Mauritania (excluding most small towns).

Main actors

Actors	Roles	Trends
Ministry for Hydraulics and Energy (MHE) and its Hydraulics **Department** (DH)	• in the sector in general : – defines national policy, – manage public assets, – authorizes the various forms of water use (license) – owner of the water resources • within the framework of delegated management for water supply in small towns : – draws up contracts ; – fixes the water tariff and controls its application ; – ensures the technical and financial follow-up	On going institutional reform : – Study on the Water and Energy Sector Reform (including privatization of SONELEC) ; – Project of Water Act Missions not always clearly defined within the framework of the concession system
National company of Water and Electricity (SONELEC): company with public capital	• production and distribution of water in 15 main towns • construction and commercialization of sewage systems (very few are existing)	Not a nation-wide monopoly but possible conflicts with local "concessionaires" Privatization under consideration at the end of the Study on the Water and Energy Sector Reform
"Concessionaire" (95 % are small local entrepreneurs)	• production and distribution in one small town (but management of many towns is not excluded by law) • technical management of the equipment • administrative and financial management of the service	Not a true concession but rather a management/lease contract with evolution towards a concession "de facto".
Communes	• within the framework of decentralization: extension of their responsibilities to drinking water supply • within the framework of the concession system : - the commune itself could be a "concessionaire" itself - or simply control the quality of the service of a private "concessionaire" chosen by MHE	Ambiguity in the role of a commune that controls the concessionaire, but can itself become a "concessionaire".

Water service situation in the small towns of Mauritania

Physical constraints and their consequences

For small towns in Mauritania, water schemes are the dominating service. No perennial surface water exists in most of the country and ground water exists in some regions in limited quantity.

Alternative water resources are scarce (ponds, dug wells, boreholes with hand pumps). They are used mainly for the needs of livestock (transhumant populations) and small-scale irrigation, or in the event of pump breakdown.

For 58% of the studied small towns, these alternative resources are of very poor quality. For 36% of the small towns where there is a deep-water resource, the concrete shafts can provide water of adequate quality. In 6% of the small towns, there is no alternative to the borehole supplying the water scheme.

Equipment standards

Until 1990, the Mauritanian policy in rural areas resulted in the installation of water points with low discharge (wells, boreholes with hand pumps and small motorized pumping stations).

At the early nineties, the Water Department initiated a new policy, giving more emphasis to big pumping stations (motorized), supplying water schemes with standpipes (house connections were always neglected at this early stage of the projects). More than 200 small centers with a population ranging from 1 000 to 10 000 inhabitants were equipped with water schemes.

Sanitation services in the Mauritanian small towns

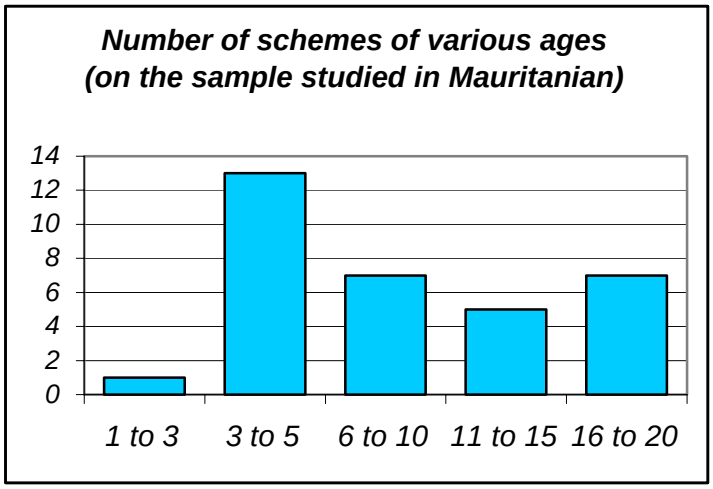
All the small towns (and most of the Nouakchott districts) have no sewer and the households use pit latrines built by local masons. The coverage rate varies according to the age of the city rather than to its size. The new towns (recent sedentarisation) have the lowest sanitation coverage (20 to 30%) while the older towns are relatively well equipped (coverage around 85-90%). 75 % of these small towns have more than 60% sanitation coverage.

Studied Provinces and Small Towns

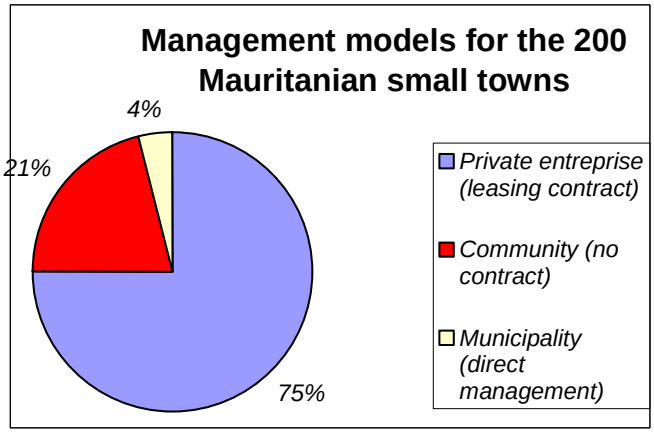
The case study in Mauritania covered 33 small towns in the provinces (wilayas) of Brakna, Trarza and Gorgol. These areas are located at the south and the west of the country and its capital, Nouakchott.

Wilayas of Brakna, Trarza and Gorgol represent 62 % of the water schemes of the country with 145 towns equipped with schemes and motorized pumping stations (diesel or solar).

To fulfill one the main criteria proposed in the "Case study methodology" we avoided recent towns, with few data, and 32 of the 33 selected towns have experienced more than 3 years of water supply management.



The towns to be studied have been choosen to represent the different management models existing in Mauritania. In order to increase the diversity in the sample, this first selection was extended to a fourth region, Tagant, including 2 small towns with a municipal concession (Moudjéria and Achram).

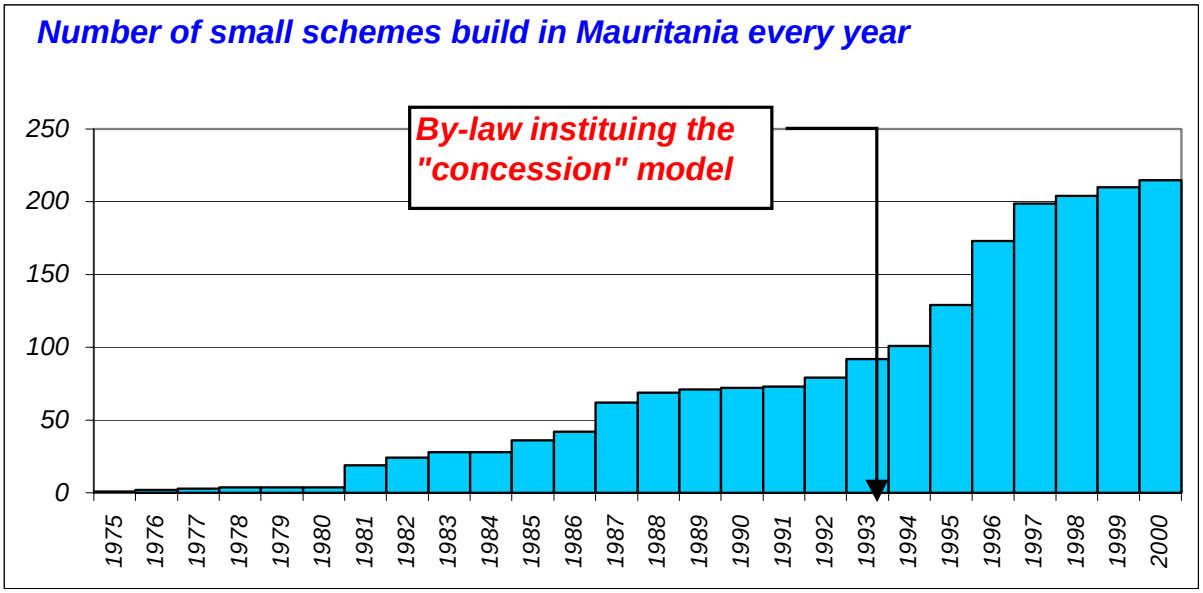


Urbanization is a recent phenomenon. Most of the studied towns are old villages which were equipped recently : 73% of the small towns existed before 1970, 21% appeared at the beginning of the seventies and 6% are villages created in 1995.

As regards administration, 27% of these small towns are urban communes (moughatâa chief towns), more than 36% are rural communes (of which 9% are district chief towns) and more than 36% are simple villages without legal statute.

Management delegation to "concessionnaires": towards a single model?

Since 1993, Mauritania has developed an original policy for the delegation of the management of water services in small towns to private operators called " concessionnaires ". These operators are today responsible for services in 190 of the 270 small towns in Mauritanian equipped with water schemes.



This very strong trend on a national scale was allowed by a relatively weak legal framework (a simple Ministerial decree with a model for the contract). Not very rigid from the point of view of their structure and their contents, the texts allowed for some latitude in the detailed design of the arrangements between the “concessionaire”, the users and the Water Department. They contributed towards the evolution of a very promising and dynamic process with regard to the delegation of water services in small towns.

The decree speaks about three main types of concessionnaire : private, community or communal. In fact, private is the overhelming type, few communal exist (although it was the main model before the 1994 decree) and community concessionaires are generally the “second best solution” (when no private party is available as a candidate to be a “concessionaire”.

Who is the typical "concessionaire" ?

The management of a water scheme in a small town is usually recognized as a professional business, fullfilling the economic ambitions of the majority of concessionnaires we met, but with the rather strong idea of a public utility.

The performance analysis of the various manager types interviewed during the study allows one to formulate an "ideal " profile-type to meet the demands of users and to ensure the sustainability of the system.

	Standard profile of the "ideal" manager
Statute	Manager of the private type
Age	From 30 to 40 years
Qualification & experiments	Graduate (grammar school or more) and some business experience if possible
Origin & place in the city	To be a native villager and to have a good relationship with the populations and the local authorities (traditional).
Recruitment strategy	Whatever the origin of the candidate, recruitment must be validated by the social and political leaders of the town. Competition between several candidates would contribute to refine the choice.
Others activities ?	It is a full-time trade which requires significant time commitments.
Personal characteristics of the manager	To have a strong entrepreneurial feeling. To be able to listen to customers, to negotiate and manage conflicts. To be conscious of the community's interest.

Contractual aspects of the Mauritanian "concession"

Beyond legal precariousness, relative stability of the contracts

The "concessionaire" situation seems quite fragile taking into consideration their contract :

- one year contract for diesel systems,
- one month (!) for solar, renewable by tacit agreement,
- not very clear contract clauses (obligations contradictory, unrealizable, not defined in their methods of execution, unclear definition of roles and responsibilities of the different stakeholders).

During the first years which followed the publication of the decree, many "concessionaires" left the job but during the last 4-5 years, the situation seems to have become quite stable (no turn over) and all the current concessionnaires have been in charge for 4 years on average (for the 33 towns sample).

Social and political criteria seem to govern the choice and the continued presence in their post of the concessionnaires. It is a new element in the concession equilibrium. The legal insecurity is compensated by informal mechanisms. And it is the quality of the service provided by the concessionnaire that ensures the support of the communities and local authorities. **Contractual obligations are replaced by the need to meet obligations that are monitored by the users.**

Sharing investment

Significant investments are made by the concessionaires and the users

Decision making and financing of the initial investment

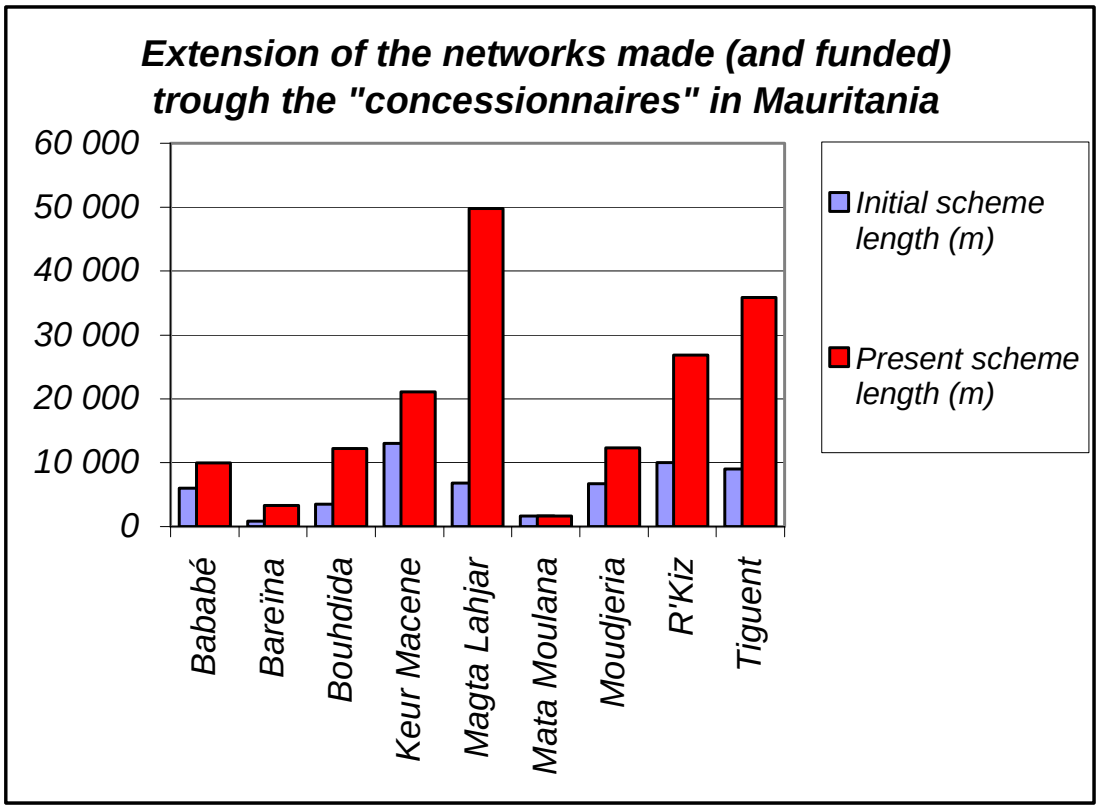
In most of the small towns, the initial financing of the water scheme has been made by the State through its investment plans. But the users also sometimes make substantial contributions (community mobilization):

- In all of the 61 small towns equipped with a solar system during the Regional Solar Program, users brought on average 25 % of the investment cost.
- The small religious towns invest directly in water schemes, independently of the Water Department or other partners.

Decision making and financing of extensions

In all the small towns, extension works were decided and funded by local people: concessionaires and users. These extension works are very important:

- Some 200 km of secondary network were build in the 10 studied towns;
- That is more than 200 % of the initial length;
- 3700 house connections were installed (contrasting with only 15 at the schemes original construction), with 100 km of additional tertiary branches.



The funding mechanism for an extension is quite complicated. The “concessionaire” does not have enough funds to build the extension and, until now, has no access to bank credit. For this reason, they are obliged to mobilize funds inside the community, grouping several users in order to obtain the required funds.

Several types of users are at the origin of the financing of an extension and the concessionaire himself is not the main funds provider (although many concessionaires mobilize their staff free of charge). Examples are:

- a rich private individual (businessman, high ranking civil servant, emigrates, traditional leader) finances an extension which benefits the whole district or him only;
- a district community finances a pipeline with a collective tap, while waiting for future private connections;
- a migrant group sends money to the village;
- an economic group (farming cooperative or merchants) requiring access to water.

Procedure of financing and realization of the extensions

The normal procedure trhough Water Department is very long (request for authorization, technical study, etc) and generally the concessionaire and the users act as follow :

– Stage 1: a user or a group of users introduce an extension demand to the concessionnaire,

– Stage 2: the concessionnaire makes a feasibility study and establishes a cost estimate with the assistance of his plumber

– Stage 3 a: either purchase of the equipment and engagement of a plumber by the users if the concessionnaire does not have yet a plumber in his team ;

– Stage 3 b: or building of the extension by the concessionnaire who sells equipment to users (if they have a store) or buys it on their behalf.

Towards an effective maintenance

The maintenance provided by the Water Department and its gradual decline

The heavy maintenance of thermal systems

It should be, under the present regulation, a service provided by the Water Department, but financed by the users trough a special fee (0,1 US/m3) to be collected by concessionaires.

The service has for a long time not been properly carried out by the administration and most of the concessionaires use other options (private mechanics or do it themselves). For this reason they are reluctant to pay taxes for a service they are obliged to get elsewhere and they gradually stop paying the fee and get complete independence from the Water Department through non-observance of their contractual obligations.

The maintenance of solar systems

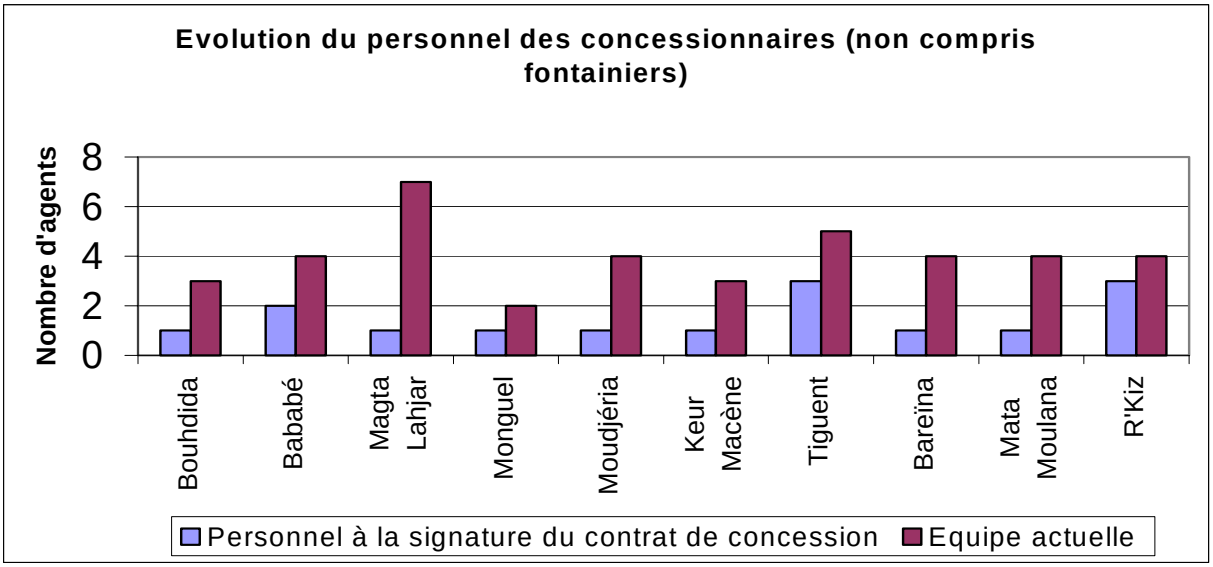
Concessionaires using a solar pump pay a royalty, the amount of which is established according to the design features of the equipment (310 000 to 510 000 UM / year = 1 300 to 2 200 US $). The royalty is paid to a private enterprise (BTI) and the service is properly supplied.

The development of real micro-utilities at town level

Most of the concessionaires have developed their own team. The rise of the staff employed for maintenance and operation of the schemes is very impressive over the last 5 years (2nd operator at the pumping station, a plumber, one or two meter readers…).

The team's evolution shows the dynamism of private concessionaires who are concerned to meet consumers' demands.

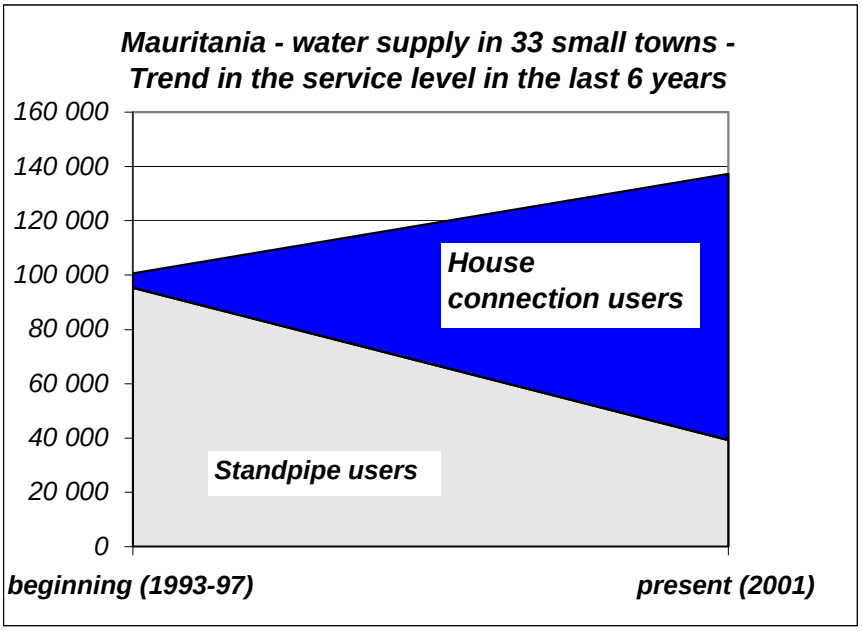
Starting from a basic working group (manager and pump operator), the concessionaire builds a complete team, including commercial and technical staff. This move is progressive, because the basic contract was not a real concession, but more a simple management contract for a pumping station.



Level of service and satisfaction of the users

The rise of private connections, the new service standard in Mauritania

- 88% of the 33 surveyed small towns have private connections. Only 4 towns do not have any house connection: these small towns, on the edge of the river Senegal, chose a community management system, with standpipes rather than house connections;
- Standpipes are progressively being neglected with the development of house connections. More than 21% of the towns do not lay out any more standpipes, although it was the main supply standard 10 years ago everywhere in Mauritania. The remaining standpipes are not used very much and many standpipe manager have resigned because of the lack of clients;



- In only 6 years, the average number of private connections increased dramatically (from 37 HC to 6039 HC in the whole 33 small towns). It increases with the safe number of inhabitants for certain solar AEP whose production of limited water slows down the rise of private connections.
- The coverage rate is high (on average, 65 HC per 1000 inhabitant – ranging from 26 to 125 / 1000 inhabits).

Procedure of financing and installation of private connections

As for extensions, the financing and installation of private connections follow a local procedure :

- Stage 1: user asks for connection to the "concessionaire"
- Stage 2: the concessionaire studies the feasibility of the request (house location, distance to main pipes, pressure in the pipes…) and establishes a cost estimate. The maximum distance for a private connection is 50 m on the majority of the networks but some "concessionaires" agree to carry out connections as long as 100m ;
- Stage 3a: either the user purchases the material, respecting quality standards required by the "concessionaire". All this material is supposed to be the property of the user.
- Stage 3b: or the user pays a connection fee to the "concessionaire" who buys the materials.
- Stage 4: the plumber (member of "concessionaire" staff) builds the connection

Commercial practices to promote house connections

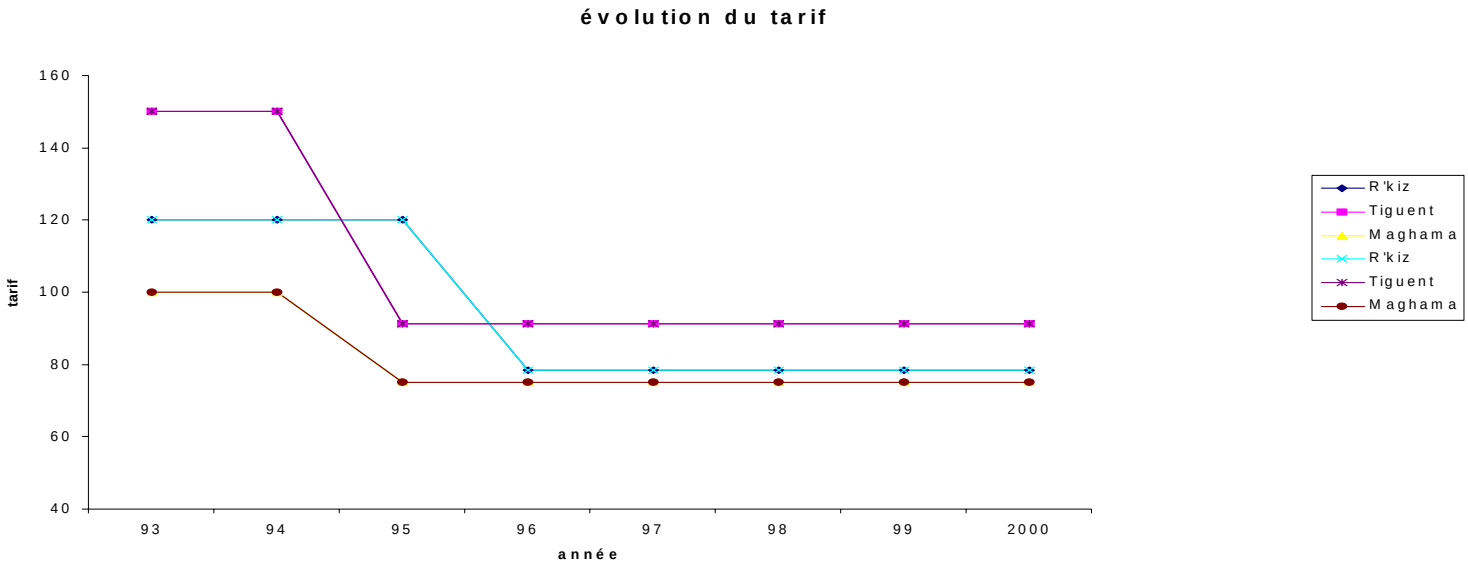
The fact that many users in these small towns agree to invest a lot of money in collective extensions and private connections shows their confidence in the ability and the willingness of the "concessionaire" to build the extensions at a fair price and to provide a realizable service.

The most common connection fee is 40 000 UM (180 US $) for an average connection length of 30 to 40 m. Such an amount looks expensive with regard to average household income in small towns (that is 3 times the minimum salary) but a large majority of households in the studied towns made an application for a house connection and the present connection rate (65 HC per 1000 inhabitants) is more important than in the capital city, where many house connections were subsidized by public funds. The main limit to a wider coverage in small towns is not the demand, but the supply (under sizing of the pumping equipment, especially with solar pumps).

The most proactive "concessionaires" engage a strong commercial approach, in order to gain new customers (credit for connection, campaigns to encourage connections with proposals for cost reduction, creation of stores to sell water materials: taps, pipes…).

Tariff setting is a major and very sensitive issue

In Mauritanian small towns, the tariff had been strongly reduced by the administration before awarding the contracts in 1994 and 1995. Since then, price rises have been completely blocked.



The tariffs are too low to allow “concessionaires” to pay full costs. For this reason, most of them have reduced some expenses (taxes, wages). The renegotiation of the tariffs is very hard and only 3 concessionaires have succeeded.

The maladjustment of the tariffs result from:

- no functional mechanism of revision: the tariffs have been fixed at an early stage with theoretical formula and are always the same, independently of the effective results of the operation (as it was supposed to be in the contract);
- an inappropriate mode of calculation:
  - the lifespan of the equipment is over-estimated compared to local operating conditions: the motors whose depreciation was calculated on a 12 000 hours base, functioned on field conditions (sand and heat) not more than 7 000 hours in most of the pumping stations;
  - over-estimated consumption: calculations were made with a 20 liters per day per capita ratio but observed consumption is nearer to 15 liters per day per capita;
  - whereas consumption would not exceed 10-15 l/d/c for networks in operation for 4 to 7 years
  - the rise of gas prices, a major expenditure for the thermal systems, is not accounted for in new tariffs.
  - Concessionaires are obliged by the local administration to provide free water for some public buildings and “under the price” water for some farmers.

Conclusions

The Mauritanian administration has managed a very quick move out of the small towns water supply sector and promoted local young professionals to become private water providers.

There is little incentive for water system managers to invest…

In Mauritania, water services in small towns are generally delegated to local private providers, acting in the framework of a management/lease contract (although these operators are called "concessionaires" in the contract). More than 180 of these small entrepreneurs have been contracted since 1994. Within this contract, the operator's interest is to minimize expenses but with few incentives to invest.

But high investment in network extensions were generated on a local basis

But in these small towns, the demand for house connection is very strong. As a result, water scheme managers are pushed to install connections (to meet the demand of their customers), even if it is not written as an obligation in their contract.

They fund the extensions by raising local funds, mostly provided by the users themselves, through the connection fee (there is no government money, no bank credit…). The operator collects the money from house to house, in a very demand responsive approach, and the users are ready to pay for full investment costs, even in very low income areas.

This arrangement has proved to be very effective. 85 % of the networks have been extended since 1995 (the average extension is 19 km per scheme, or 200 % of the original length). They have also installed many house connections, funded directly by the users.

The success of this policy is linked to the very good relations that exist between users and "concessionaires". Users trust in the operator's ability and willingness to build quickly the network extensions. For the operator, the investment risk is not too high, because it is shared between them and many members of the community.

An improved institutional framework would help to develop the service with:

- Clarification about ownership of the assets, pushing private operators to invest in pumping equipment
- True lease contracts, setting clear responsibilities for the operator, Water Department and Municipality
- A working price setting mechanism