



Financing water for growth in Africa

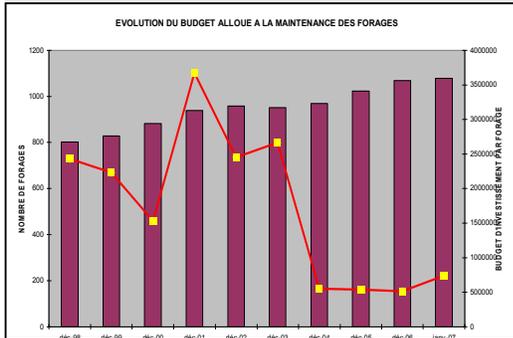
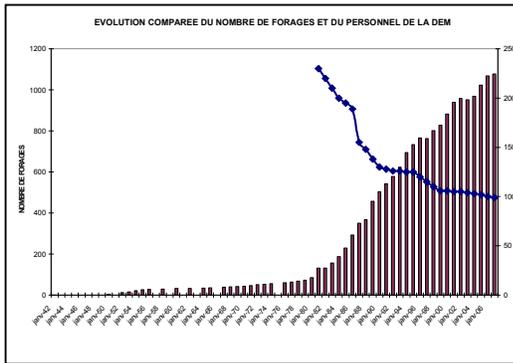


Public-Private partnerships in the management of rural boreholes in Senegal

Summary

A large proportion of the rural population of Senegal obtain their water from mechanised boreholes which were installed and have been maintained by the government. However, the budget for the Department responsible for the maintenance has been reduced over many years. As a result the standard of maintenance has declined.

Above – number of boreholes developed since 1940.



Below – Development of boreholes and trend in budget 1996 - 2007

In response, it has been decided to enter into public-private partnership whereby private sector operators will be invited to bid for responsibility for the maintenance of boreholes. Project preparation is now substantially complete, and documentation is nearly ready for the bidding process.

The project

Description and opportunity of the project

It has been decided to test the concept of allocating responsibility to the private sector for maintenance of boreholes in 5 regions near Dakar. The total population to benefit from this will be about 3.3 million, occupying 5662 villages, of which 68% have less than 500 inhabitants. The land area of the selected regions is 35,000 km² – about 18% of the country as a whole.

There is one borehole per 47km² in the central region which has been most intensively studied – giving an average radius for the coverage of 3.9km.

The initiative was born from necessity, as the government budget for the agency responsible for rural boreholes has been reduced over the years as the following charts show.

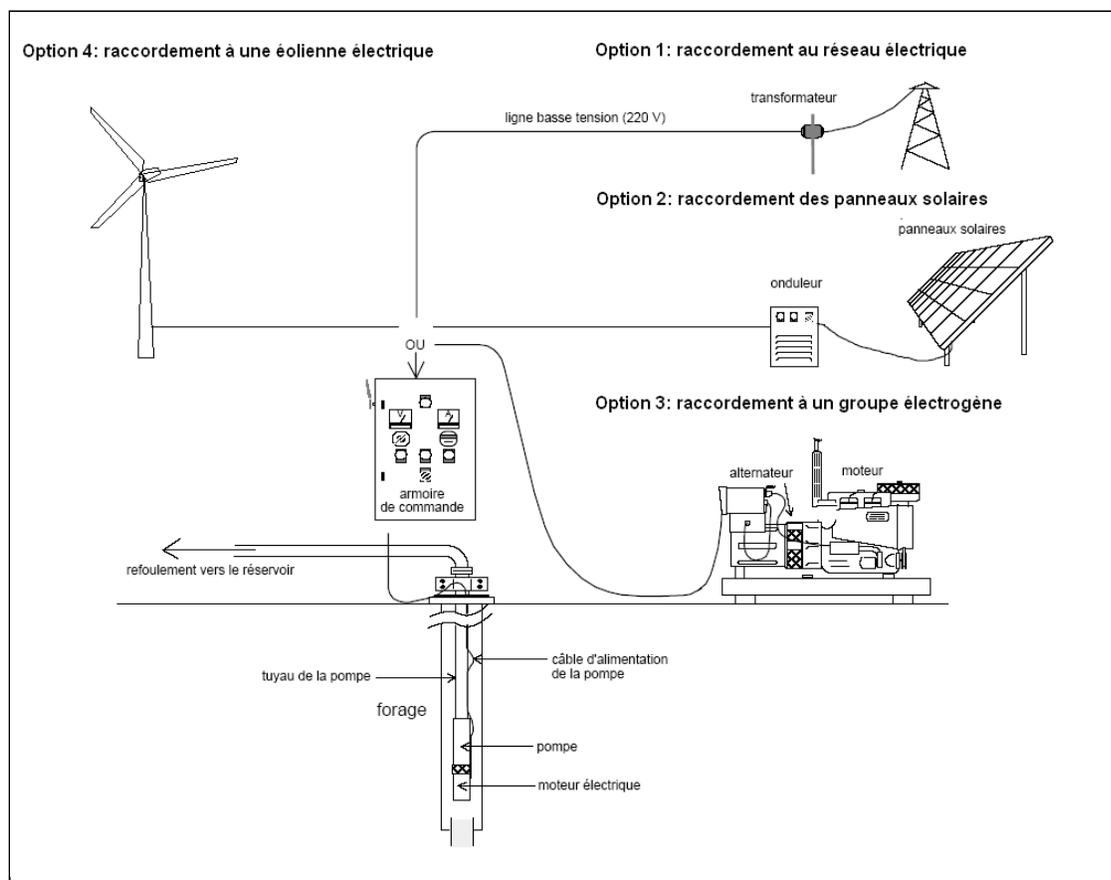
In order to prepare for the project detailed surveys were undertaken to identify the location of each borehole, the type of motor and power source, and its general condition. It was found that, in the central region, for example, 130 of the pumps were electrical and 309 driven by internal combustion engines (usually diesel). The annual cost of maintenance was 8.05 CFA francs per m³.

It was also noted that costs varied: for example in the south zone the cost was more than double – at 17.04 per m³, possibly due to the fact that the ration of diesel pumps to electric was much higher.

Pumps are currently maintained by management committees or brigades within the village, or management groups created by ASUFOR. ASUFOR encourages people to pay funds collected into bank accounts, and substantial sums have been received. Users said that the most common problems they faced were obtaining diesel oil, buying spares, and breakdowns of the pumps. They appeared to have little difficulty in managing cost recovery and oil changes.

The project is also installing and repairing meters to allow for proper measurement of the water produced and to have a fair method of charging. About one third of the production sites do not have meters, and

SENEGAL
Borehole management project



Diagrammatic representation of the power options

the majority of distribution lines (441 out of 529) have no meters.

A pilot project for the maintenance of 80 boreholes was considered very successful.

Technical features

The project has developed detailed guidelines around the role of the parties. On the government side is DEM (Direction de L'Exploitation et Maintenance), and on the user side is ASUFOR, the borehole users associations, who receive training and support in management aspects. DEM will provide five year licences to private operators to run the borehole. In addition maintenance contracts are awarded which specifies performance standards, prices for standard parts and operations, etc. Under the pilot project, for example, the performance was as follows:

Routine supervision visits: first one within 50 hours, and minimum of three per year. One visit per year for electric motors.

Preventive maintenance every 1000, 2000 and 6000 working hours. Overhaul every three years.

Repairs had to be attended to within 2 days of the fault being reported. If the machine could not be repaired a substitute had to be fitted.

Social impact

Clean water has a well-known positive impact in terms of health, and access to a reliable water supply can save the users substantial time.

Improved health facilitates increased productivity and a better climate for education.

Increased water supply also facilitates increased agricultural production through irrigation.

Environmental impact

The environmental impact of the project is effectively nil, because the project does not provide additional boreholes. Meanwhile the electricity supply can be extended, (as the pilot project demonstrated) to increase the number of electrical motors. These have the advantage of being more reliable and have a much lower environmental impact than fossil fuel motors.

| Action | Completion date | Cost (CFA francs) |
|--|-----------------|-------------------|
| Preliminaries | | 723 |
| <i>Establishment of transfer task team</i> | Apr 08 | 120 |
| <i>Detailed surveys of assets</i> | May 08 | 20 |
| <i>Identification of actions to bring up to standard</i> | May 08 | 5 |
| <i>Preparation of business plan on findings of surveys</i> | June 08 | 4 |
| <i>Establishment of ASUFORs</i> | Dec 08 | 420 |
| <i>Installation and repair of meters</i> | Dec 08 | 154 |
| Repair of pumps | Jul 08 | 1,500 |
| Preparation of contractual instruments | Jun 08 | 20 |
| Launch of tender process | Apr 08 | 1.5 |
| Selection of operator | Jan 09 | 14 |
| Institutional reform of DEM | Dec 08 | |
| Grand total | | 2,259 |

Feasibility

Legal, institutional and regulatory environment

The legal and institutional environment is now being put in place. This includes an institutional reform of the DEM to reflect its changed role, a strengthening of the ASUFOR, and detailed preparation of the contractual instruments, such as the exploitation licence and maintenance licence. This is expected to be complete by the end of 2008.

Business environment

Bids for exploitation licences will be open to all private sector enterprises. Among the criteria they will have to meet are the availability of suitably qualified personnel, working within a properly registered company. They must demonstrate that they can meet DEM's technical requirements, and can operate at a fair cost and within the required



financial and management conditions. They must demonstrate that they will be able to meet their financial obligations in terms of payment of suppliers.

Maintenance licences are available only to Senegalese companies, with a proven record. They must be able to meet the requirements of the contract and be able to prepare suitable performance reports.

In both cases payments to the private sector operators will be arrived at through competitive bidding.

Economic and Financial analysis

Capital costs

In April 2008, DEM prepared a budget to launch the project, as shown in the table above.

Operating costs

Operating costs will be paid by the users through the ASUFOR. This follows the present arrangement. The table below shows the receipts by ASUFOR and Management Committees (MCs). The private operator will be paid by DEM, and will not be affected by changes in water charges or the rate of collection.

| | Amount in CFA francs |
|------------------------------|----------------------|
| Mean balance held by ASUFORs | 4.9 million |
| Mean balance held by MCs | 2.6 million |
| Gross savings | 750 million |
| Annual receipts | |
| 26% | < 5 million |
| 38% | 5 – 10 million |
| 36% | > 10 million |

Rate of return

No calculations have been undertaken on this.

Development status

A successful pilot project has been undertaken, which has received widespread approval. The project is supported by the Water and Sanitation Programme – Africa (WSP) of the World Bank, and by the Public Private Infrastructure Advisory Facility (PPIAF). It is expected to proceed smoothly from now on.

Risk factors

There are three risk factors:

- That there will not be sufficient interest from the private sector to meet the demand.
- That the performance of the private sector operators will be inadequate.
- That the management of the ASUFOR will be poor,

which will be reflected in poor payment for the services or lack of timely reporting of faults.

Based on the first pilot project the capacity of the private sector could be a difficulty to begin with, but this is expected to resolve itself in time.

Next steps

It is expected that the approach will be replicated widely both in Senegal and elsewhere. The implementation programme prepared in April 2008 is reproduced below.

Project contacts

Mr Babou Sarr,
 Directeur de l'exploitation et de la maintenance,
 Tel +221 33 832 35 92
 directeurdem@orange.sn

| | avr-08 | mai-08 | juin-08 | juil-08 | août-08 | sept-08 | oct-08 |
|---|--------|--------|---------|---------|---------|---------|--------|
| 0. Animation d'un atelier national de démarrage | ▲ | | | | | | |
| I. VOLET 1 : Appel d'offres de délégation du service de maintenance | | | | | | | |
| 1. Revue documentaire et consultation des acteurs | | | | | | | |
| 2. Analyse des caractéristiques du périmètre retenu pour l'appel d'offres | | | | | | | |
| 3. Elaboration d'un modèle d'appel d'offres | | | | | | | |
| 4. Identification du programme de formation et de communication | | | | | | | |
| II. VOLET 2 : Projet pilote de délégation de gestion du service de l'eau | | | | | | | |
| 1. Elaboration d'un modèle d'analyse économique et financière de l'exploitation du service public de l'eau potable | | | | | | | |
| - Revue des données pour un affinement du plan d'affaires | | | | | | | |
| - Développement d'un modèle d'analyse économique-financier | | | | | | | |
| 2. Pré-identification des sites de forages potentiels | | | | | | | |
| 3. Investigations régionales : démarche participative de consultation et collecte des données techniques et financières d'exploitation | | | | | | | |
| 4. Animation de 7 ateliers régionaux de synthèse | | | | | ▲ | | |
| 5. Elaboration d'un dossier "procédure de recrutement de délégataire de gestion -type affermage" | | | | | | | |
| 6. Elaboration d'un document de projet (requêtes de financement) | | | | | | | |
| III. VOLET 3 : Plan d'adaptation et de renforcement des capacités de la DEM | | | | | | | |
| 1. Revue documentaire | | | | | | | |
| 2. Consultation des acteurs | | | | | | | |
| 3. Développer l'option retenue | | | | | | | |
| 4. Développer le plan de déploiement de l'option retenue | | | | | | | |
| IV. VOLET 4 : Capitalisation et diffusion des enseignements et résultats du projet | | | | | | | |
| 1. Rencontres mensuelles du GTS | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ |
| 2. Animation d'un atelier de restitution des activités des volets 1 et 3 : transfert de la maintenance et adaptation et de renforcement des capacités de la DEM | | | | | | | |
| 3. Animation d'un atelier de restitution des activités du volet 2 : projet pilote | | | | | | | |
| 4. Elaborer et diffuser des publications | | | | | | | |
| Reporting | | | | | | | |
| Rapport de démarrage | ★ | | | | | | |
| Rapport d'avancement à mi-parcours | | | | ★ | | | |
| Rapport final provisoire | | | | | | | ★ |
| Rapport final définitif | | | | | | | ★ |

★ : Production de rapports ▲ : réunions et ateliers ■ : réalisation des tâches ||| : préparation des tâches
 ★ : Etapes de validation DEM