

The financial sustainability of drinking water services: the case of Zorgho, Burkina Faso

Denis Zoungrana

Abstract

The funding of water services delivery in rural and semi-urban areas is twofold encompassing the creation and development of infrastructure; and the operation and maintenance of the water schemes and customer management.

In Burkina Faso, public action in the field of drinking water supply is supported by bilateral or multilateral aid through various channels such as ministries, local authorities and international non-governmental organisations (INGO). Burkina Faso has adopted the program approach to assess financing needs. Funding for building and developing drinking water supply facilities is ensured by the following four key sources in decreasing order of importance:

- *Development aid (subsidies and loans)*
- *State budget*
- *Internal funds (local authorities, private sector)*
- *Users' contribution to the investment*

It is hard to assess all the financial flows as the data originate from various sources. The statistical monitoring mechanisms as a result are inefficient.

In the field of capital expenditure, the financing needs for drinking water supply and sanitation during the decade 2005-2015 have been summarized in a single document. The total cost of the National Plan for Drinking Water Supply and Sanitation in Burkina Faso (PN-AEPA) is estimated at €829 million (€620 million for rural areas, € 209 million for urban areas).

With regard to service delivery, the strategy for implementing the drinking water supply policy in rural areas and semi-urban areas in Burkina Faso indicates that tariffs will have to cover the costs of operation and maintenance, customer management as well as the renewal of the infrastructure which has been amortized within the ten-year period. As a social adjustment, tariffs are cross subsidized between the institutional and commercial consumers and households. The experience of Zorgho, a small town located at 110 km from Ouagadougou, shows that the "development fund" is a dynamic tool to increase water access and the sustainability of water services.' In a five-year period, access to water services

has increased from 25% to 58% using a fund collected at system level to develop the network and household connections.

Four key lessons can be learned throughout the water service delivery in Zorgho:

- *The involvement of local governments has improved the effectiveness and the alignment of interventions in rural and semi-urban areas;*
- *Financial flows need to be increased towards local level in order to allow local government to play its role;*
- *The “development fund” collected at system level and its wise use could increase the financial sustainability of drinking water services in semi-urban areas.*

Keywords

Development fund, semi-urban areas, social adjustment, Zorgho, financial sustainability.

INTRODUCTION

The question of water access funding in rural and semi-urban areas is twofold: firstly in terms of the Creation and development of infrastructures; and secondly with regard to the operation and maintenance of the water schemes and customer management.

Under the millennium development goals (MDG), Burkina Faso has set a challenge to increase access to drinking water services in rural and semi-urban areas by 52% in 2005 and to 76% by 2015. In this stream, the national plan (PN-AEPA) summarizes the financing needs for capital expenditure to increase water coverage. The total budget of PN-AEPA is € 829 million. Until 2009 the total volume of funds mobilized amounted to approximately € 593 million (Revue PN-AEPA, DGRE, 2010). The national budget of Burkina Faso and the user's contribution represent 10.5 %. The major part of funds (in particular investment) granted to sector projects and programs has been managed until now by the Direction générale des ressources en Eau (DGRE) and the Office National de l'Eau et de l'Assainissement (ONEA). Financial flow is currently estimated at € 22 million per annum of which only € 305,000 has gone to local governments.

Information on financing by INGOs and users has not been assessed yet. This can be estimated at approximately € 3.8 million per year and the institutions to contribute more have been identified as WaterAid, Plan International and Eau Vive. The Decentralized Co-operation Office (MCD) and the Directorate of Decentralized Co-operation (DCOD) do not have sufficient statistics. According to the French INGO pS-Eau, 25 cooperation partnerships between French and Burkinabe communes have implemented some activities in the field of water. They are very active. Financing is estimated at € 240,000 in 2006 and € 1,600,000 in 2009 (report on decentralized cooperation between French communes and Burkina Faso, pSEau, 2010).

The main challenge that the water sector has to tackle in developing countries is the sustainability of service delivery in rural and semi-urban areas. In Burkina Faso, more than 35% of small piped water schemes have broken down (Revue PN-AEPA, DGRE, 2010). That is why, the relative success of Zorgho scheme, where development fund is used to sustain water services delivery and development, is interesting to share.

Having described the context and the environment of water service delivery in the town of Zorgho, this paper will discuss the added-value to financial sustainability due to the use of the development fund. The paper will then look at the key lessons learned before concluding with the conditions and perspectives on the use of development funding to accelerate access to drinking water services in semi-urban areas.

METHODOLOGY

The data used in this paper are gathered from the operating accounts of Office National de l'Eau et de l'Assainissement (ONEA) for the center of Zorgho during the first five years of operation. A survey conducted in 2009 gives some data on behavior and the opinions of water users. All information is used to examine the impact of the development fund on the

financial sustainability of the services delivery. It could be analyzed by observing four parameters:

- Acceleration of coverage rate
- Improvement of service level
- Inversion of the trend in water consumption, and
- Improvement of water revenue

FINDINGS AND DISCUSSION

The Context

Social and economic data

Burkina Faso is located in the heart of West Africa and has an area of 274 000 km². Climate change and human pressure accelerate the degradation of its already limited natural resources. In terms of its water resources, the country is facing a downward trend in rainfall; low water productivity of the area covered by the crystalline ground, which represents 82% of its territory; and high evaporation resulting in a loss of two thirds of the volume stored in reservoirs and lakes. The general census of population and housing in 2006 (RGPH, 2006) indicates that Burkina Faso had 14,017,262 inhabitants. The growth rate was 2.9% and women accounted for 51.7% of the population. 77.3% of the population is located in rural areas. The main activity is agro-pastoralism from which 85% of the population derives its income. Individual personal income was estimated at U.S. \$ 472 per capita in 2008 and Burkina Faso was ranked 177th out of 182 with a score of 0,389 (DHD report, UNDP, 2009). Investigation into the living conditions of households conducted in 2003 showed a trend towards the development of the poverty-stricken whose threshold is set at 82 672 FCFA (€ 126) /person/year. Indeed the proportion of the population living below the poverty line rose from 45.3% in 1998 to 46.4% in 2003. Its growth in rural areas was confirmed at 51.3% in 1998 and 53% in 2003. Water occupies a very small place in the structure of household expenditures.

Zorgho is an urban District located 110 km east of Ouagadougou, on the Trunk road N°4 (Ouagadougou – Fada N’Gourma - Niamey). The Municipality of Zorgho has six (6) urban sectors and 33 villages.

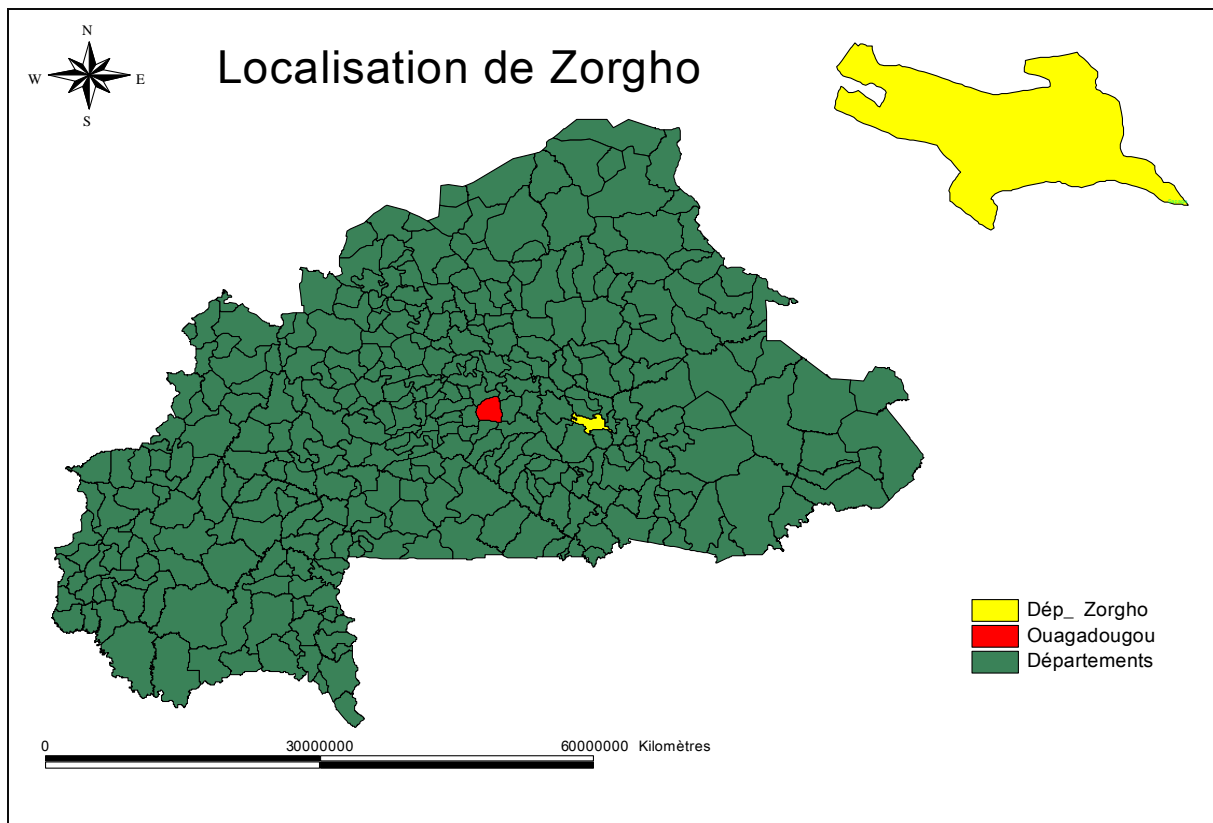


Figure 1 Localisation of Zorgho district

Source: I BAMOGO (2009)

The urban center of Zorgho covers 398.02 hectares and has 21,803 inhabitants. The economic activity of the area is based on agriculture and livestock, with 70% of the inhabitants employed in this sector for five months of the year. Commercial and handcraft activities are also carried out. We note also that with the production of vegetables nearby, the surface water supply points cover a very small area. Artisan activity is characterized through the production and sale of local beer (all sectors), the rice (sector 5), and restaurants.

The institutional and legal framework

Law No.° 055-2004/AN bearing general code of the Territorial collectivities in Burkina Faso, December 2004 and its modifications outline the framework for decentralization and districts administration by local governments (municipalities). The country is divided into 351 districts or municipalities. Drinking water services delivery is housed under the competence of local governments. They in turn are supported by the Regional Directorate of the Ministry in charge of water resources (Minsitère de l'agriculture, de l'hydraulique et des ressources halieutiques).

Insofar as capital expenditure is concerned – that is to say, the creation and development and water schemes – Burkina Faso and its technical and financial partners have been evolving towards sector Budgetary Support. The objective is to improve visibility over a

sufficiently long period in order to accelerate achievements on the ground. We have three levels of equipment and management of drinking water supply systems, the classification criteria of which are: population, level of urban development, management models – i.e. urban hydraulics – semi-urban hydraulics and rural hydraulics.

Semi-urban hydraulics of which the Zorgho water scheme is a part, aim to satisfy the demand in the semi-urban areas where populations are above 2,000 inhabitants and which are not taken into account in the concessional perimeter of the national drinking water operator, ONEA, for various reasons. The planning of services development is the responsibility of the Head Office for Water Resources (DGRE). Their programming and implementation are under the control of the Municipality. Their management is carried out in-house or outsourced to private or associative organisations who sign lease contracts with municipalities.

The reform 2000, for water supply infrastructures management in rural and semi-urban areas, is the legal framework for operation and maintenance and customer management. Decree n° 2000 -514/PRES/PM/MEE signed on November 3, 2000 contains information on the application framework for the reform of hydraulic infrastructures for drinking water supply in rural and semi-urban areas and governs the management of infrastructures of drinking water supply in rural and semi-urban areas. Its main objective is to improve the management system of infrastructures taking into account the limits of Community Management. The major innovation compared to the last management systems is the introduction of new actors, such as the Municipality which will take the water scheme Ownership, the Water Users' Associations and the private operators for services delivery.

The operationalization of the Reform 2000 is materialized by Application Tools adopted by the 8th meeting of the National Committee for the National Watsan program follow up (CNP/PN-AEPA). Legal framework of Municipal Ownership is now available: two inter-ministerial decrees were adopted and are now being implemented. It is the inter-ministerial decree n°2009/019/MATD/MEF/MARHRH of March 5th, 2009, stating devolution of State Patrimony to Municipalities as far as WatSan is concerned.

Actual statement

Institutional arrangements and the lease contract

After the water scheme was built with a subsidy from the Republic of China in 2004, the mayor signed a lease contract (affermage) on 15 March 2005 with the national water management operator ONEA for the management of the water service (operation and maintenance, customer management) for a renewable five (5) year period. It included the following activities:

- Production and distribution of water to users
- operations and maintenance according to the lease contract, and
- transfer of funds to the municipality to cover the renewal of equipment with a life cycle of less than 10 years

- financial management of the system: water bill collection, human resources management, execution of purchases and payments of service providers as well as the establishment of management statements.

It should also be noted that this contract confers to ONEA, the lease contract owner, exclusive rights of the service for water supply delivery in the leased perimeter.

The logigram in figure 2 illustrates the relation between the stakeholders of water services delivery in the town of Zorgho. It is a model of management where the responsibilities for the service delivery are shared between several stakeholders.

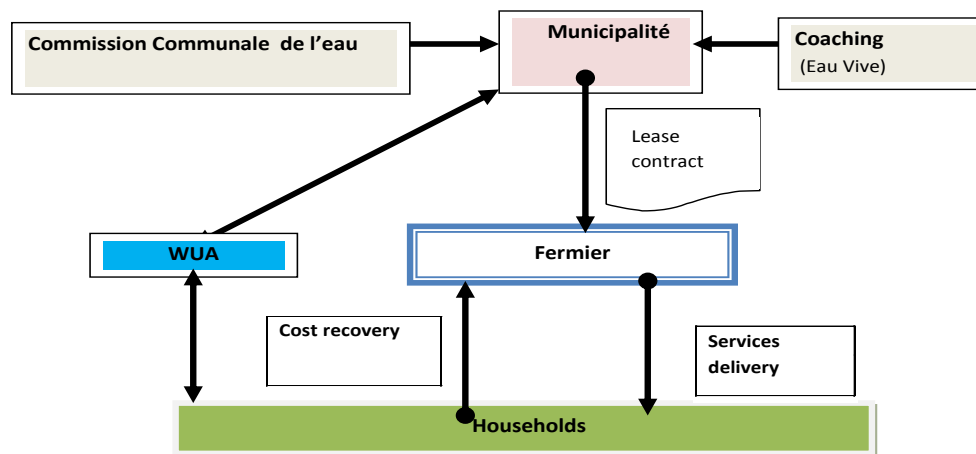


Figure 2 Logigramme of Zorgho water scheme management by ONEA

Source : adaptation Etude Triple-S mai 2010

The statutory texts envisaged the participation of several stakeholders in the management of access to drinking water services in semi-urban areas. For the specific case of Zorgho, apart from ONEA and the Municipality that signed the Lease Contract. Other important actors involved in the service delivery include: Regional decentralized body of the Ministry for Agriculture, Hydraulics, and Fisheries Resources, the associative movement, Water Users' Association.

The Regional Directorate of Agriculture, Hydraulics, and Fisheries Resources, signed the specifications in which the conditions for operating the network are defined. It is in charge of the technical support to the Municipality in its role of the Owner and Delegating Authority for the follow-up and control of the obligations of the lease contractor.

Coaching or "Support to Ownership" implemented by the NGO "Eau Vive" assists the actions undertaken by the Municipality in the framework of a project for improving drinking water services (PASEP-BF). This project aims to empower the Municipality for its ownership in a "multi-stakeholder" context through the creation of a Dialog Framework called the Municipal Water Commission (CCE). Created by Municipal Decree n° 2008-04/RPLC/PGNZ/CRZG, on February 7th, 2008, it has to play an interfacing role on the one

hand between the Municipality and water users and the other hand between the Municipality and its partners in order to inform the decisions of the Municipal council. Its duties are to :

- analyze the situation of water supply schemes in the district
- teamwork stakeholders meetings
- propose appropriate solutions to resolve difficulties encountered
- submit proposals to the Municipal Council
- report on activities undertaken to the Municipal Council
- report on the activities led to the Municipal council.

The Commission is made up of eight (8) members. The role of Secretary is given to ONEA. It has among its members, representatives of water Users Associations, operators such as public standpipes managers and manual pumps repairmen.

The daily management of the system is carried out by someone hired by ONEA whose duty it is to operate the system, conduct day to day maintenance, and collect [bill] payments from individual subscribers and from public standpipes managers. The public standpipe manager has contracts with the lease contract owner, ONEA. They pay their bills every fifteen days and are paid by the margin between the sale price and the tariffs to the users.

Tariffs setting and water market in Zorgho

The cost of operation and maintenance and customer management, the strategy of implementation of the drinking water supply policy in rural and semi-urban areas in Burkina Faso indicate that tariffs will have to cover the costs of operation and maintenance, customer management as well as the renewal of the infrastructure for a period of amortization equal to or less than ten years. In practice, the socially acceptable tariffs are limited to an average of 500 FCFA / m³ (€ 0.77) for access through private connection and to 250 FCFA /m³ (€ 0.39) through public standpipes. The tariffs set are cross-subsidies between the institutional and commercial consumers and households (table1).

Service delivered	Monthly volume (m ³)	Tariff (€)
Public standpipes	Indefinite	0.39
Domestic private connection	0 – 6	0.29
	7 -30	0.60
	>31	1.59
Other connections (industrial, public, etc.)	Indefinite	1.59

Table 1 Drinking water tariffs in Zorgho (2010)

Source: ONEA

A survey conducted in 2009 indicates that 82% of the inhabitants fetch their water from the water scheme. Table 2 presents the distribution of the households according to the main water source of used.

Main water supply source	Public standpipes	Private connections	Boreholes & handpumps	Vendors	Total
% of households	64%	10%	18%	8%	100%

Table 2 Distribution of households according to main source of drinking water used

Source: Survey, 2009, I BAMOGO

The majority of surveyed households (64%) fetch their water from public standpipes, followed by boreholes. Only 8% of the surveyed households are supplied on the level of the water vendors. That means that 92% of Zorgho inhabitants depend on the water scheme for their drinking water. The average tariffs with the users are indicated in table 3.

Set volume	Public standpipes		Boreholes with handpumps	
	Tariff	Tariff/m ³	Tariff	Tariff/m ³
20 liters	10	500	5	250
40 liters	15	375	5	250
200 liters	75	375	50-60	250 - 300
VAT	18%		0	

Table 3 Tariffs from water vendors (CFA Francs)

Source : Enquêtes, I BAMOGO (2009)

The tariff paid by the users of private connections is 449 CFAF/m³ (€ 0.67) whereas most public standpipe users pay between 500 FCFA/m³ (€ 0.76) for a service of lower quality. Most of the people fetch their water in multiples of 20 liters or 500 CFAF/m³. It is expected that 94% of the households accept or *cope* with these tariffs as shown in table 4.

Appreciation of water tariffs	Reasonable	Expensive	Too expensive	Without opinion	Total
Total in %	60%	34%	2%	4%	100%

Table 4 Appreciation of water services costs by households

Source: Survey, 2009, I BAMOGO

The difference between the water price at the public standpipes and user tariffs, € 0.38/m³, constitutes the margin that middlemen (between the operator and water users) share among themselves. It is not reinvested in the water sector. In 2009, that represented a lump sum of 15,444,875 CFAF (€ 23,545) for 61,962 m³ sold at the public standpipes of Zorgho. The big challenge lies in how these financial flows into the water sector are mobilized in order to upgrade the financial sustainability. This is why the development fund has been created.

The impact of the “development fund”

What is a development fund?

In addition to the cross subsidies between water users, stakeholders try to wisely use the funds levied from the users as in the case of Zorgho. To mitigate the difficulties of fast mobilization of funds to develop the system and to respond to the demand, the financial arrangements sets up a fund called “Development Fund”. It is created by the municipality in accordance with ONEA and the regional state body for water and sanitation control (DRAHRH). It receives the amortization of equipment and the financial results of the water scheme once all charges have been paid. It can also receive subsidies from donors. This is used to renew the equipment, develop the water scheme and the quality of water services. The development fund is used to create a virtual – virtuous cycle of service improvement and financial sustainability.

Zorgho water system was developed on the basis of the development fund and the support of the improvement or water service delivery in Burkina Faso semi-urban areas (PASEP-BF). The extensions were financed in cash in advance by ONEA in an interest-free, short term loan whilst reimbursement was given through the development fund. A total of 12,548 meters of pipes were laid during the last five last to meet water demand of which 2,825 meters have been financed and already reimbursed by the development fund, i.e. 22.5%.

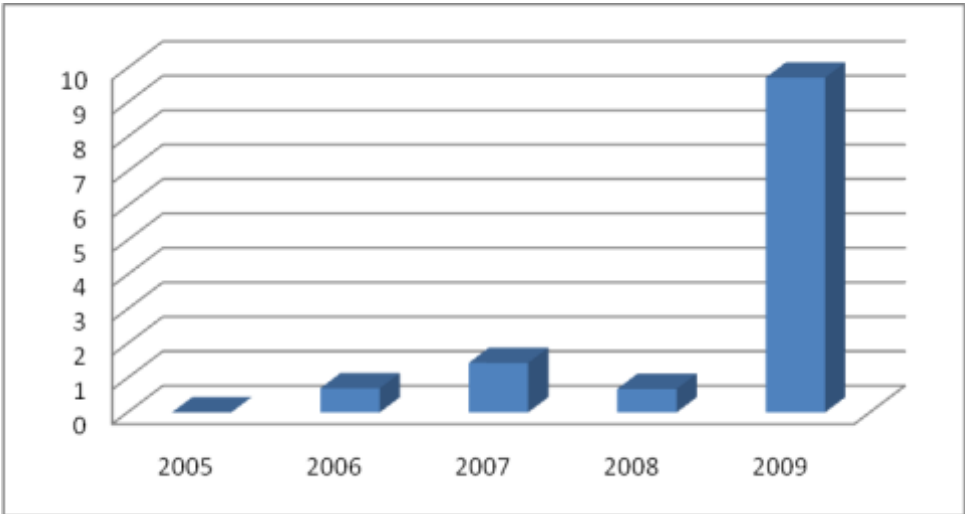


Figure 3 Network extension in Zorgho (km)

Acceleration of coverage rate

The development fund accelerates the water coverage of the households by facilitating network access. Thus the rate of access to the service initially expected to be 41% in 2009 is actually 58.4%.

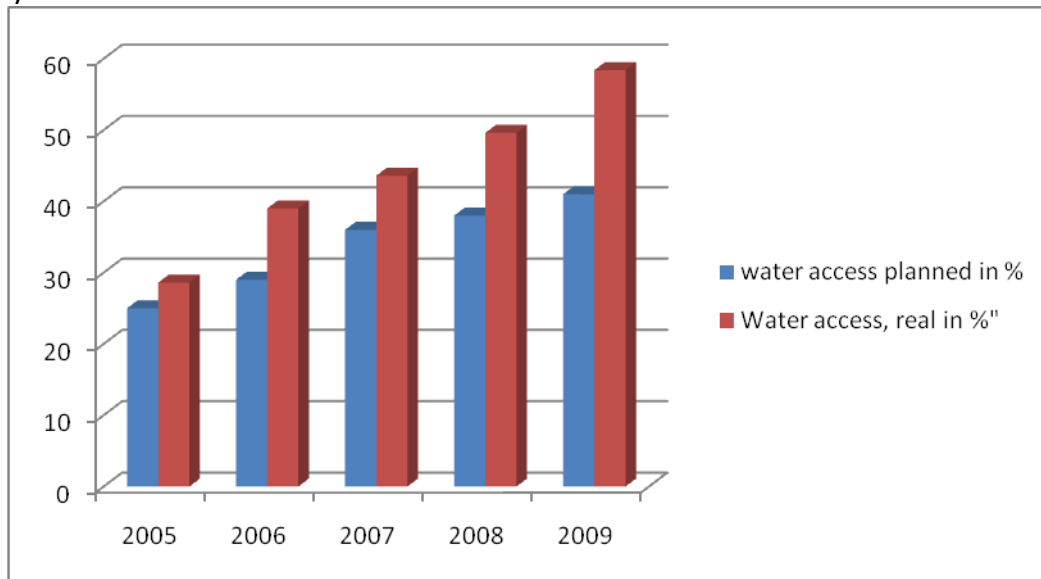


Figure 4 Water services access in Zorgho (2005 – 2009)

Improvement of service level

The full cost of a private connection is between € 150 and € 230. The development fund is entitled to subsidize 100% of the connection costs as well as the extensions where necessary. The new subscriber pays only € 46.50 which represents the advance of consumption and taxes. This practice of subsidy via the development fund was established in 2006. Consequently, the number of private subscribers rose on average 73% per annum during the last four years. The investment fund was a good lever to develop the level of the service.

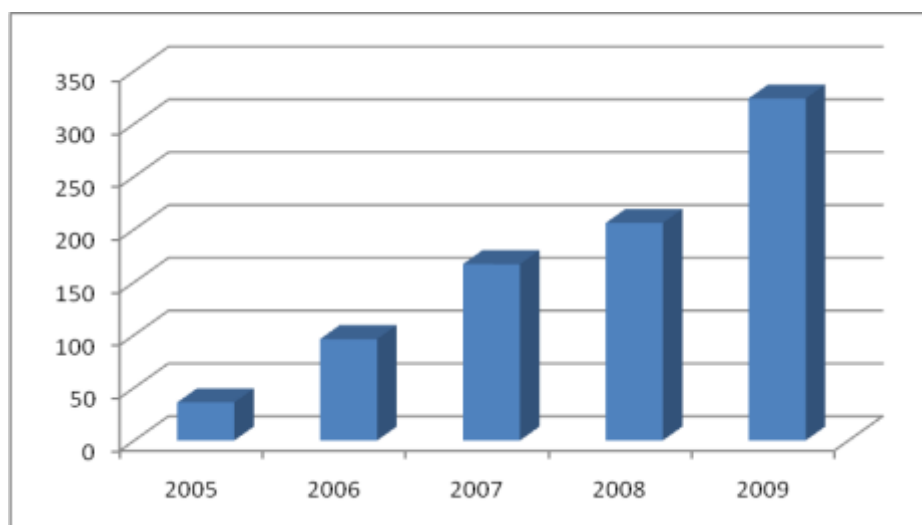


Figure 5 Evolution of private connections in Zorgho (2005-2009)

Inversion of the trend in water consumption

It is also clear to see the progressive inversion of the structure of consumption (figure 6). The development fund allows for the development of water connections in the town of Zorgho. The consumption of total drinking water intake from private connections rose from 4% in 2005 to 33% in 2009.

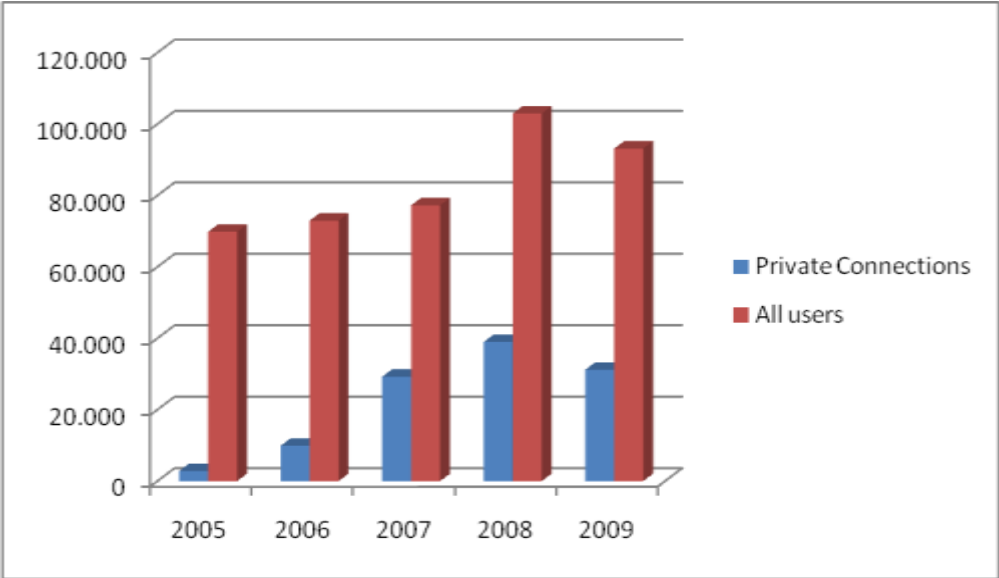


Figure 6 Evolution of water consumption in Zorgho m³ (2000-2009)

Improvement of water revenue

The development fund strategy improves the financial sustainability of the system in the long term. The average tariff per m³ increased from € 0.39 in 2005 to € 0.57 in 2009 without tariff changes. Consequently, revenue doubled in five years (+93%), from € 27 296 in 2005 to € 52 887 in 2009 with an average progression of 15% per annum. More than 80% of small water schemes in rural and semi-urban areas do not cover their operations, maintenance and customer management costs. But in the case of Zorgho, the water revenue covers operations, maintenance, customer management as well as all amortization. The main limitation is now in water resources which can only be solved at the upper levels of sector organizations availability.

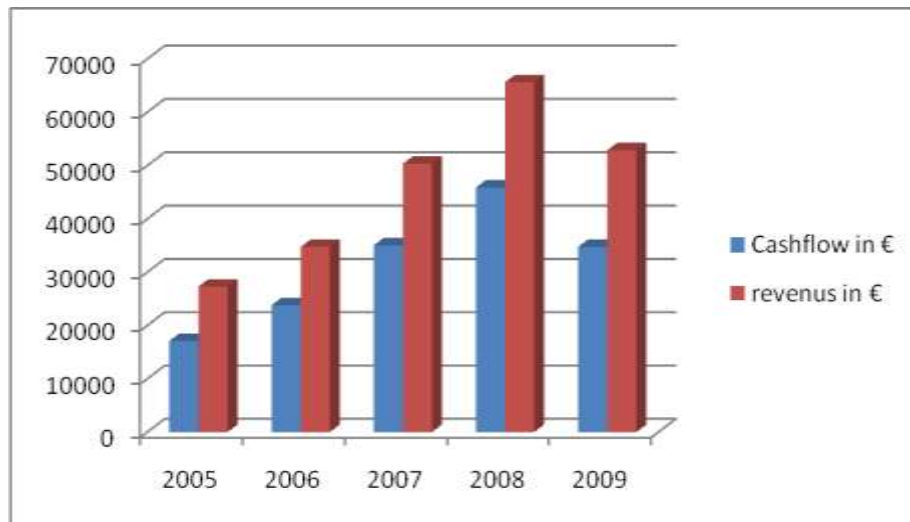


Figure 7 Water Revenue and cash flow per year in Zorgho (2005-2009)

CONCLUSIONS

The scarcity of water resources hinders the development of Zorgho water scheme. During the past five years, 3 new boreholes have been created and equipped without actually satisfying the demand for water. It is a challenge if the sustainability of water services is to be maintained.

Four key lessons can be learned throughout the water service delivery in Zorgho:

- The involvement of local governments has improved the effectiveness and the alignment of interventions in rural and semi-urban areas
- Financial flows need to be increased towards the local level in order to allow local government to play its role

The experience of Zorgho in Burkina Faso shows that a “development fund” could be a dynamic tool for financing water services sustainability in semi-urban areas.

REFERENCES

Ministère de l'environnement et de l'eau du Burkina Faso (1998) : document de politique et de stratégie en matière d'eau

Ministère de l'agriculture, de l'hydraulique et des ressources halieutiques du Burkina Faso : Revue conjointe du PN-AEPA, mars 2010, available at: www.reforme-aep.org

Ministère de l'agriculture, de l'hydraulique et des ressources halieutiques du Burkina Faso : Reforme du système de gestion des infrastructures hydrauliques en milieux rural et semi-urbain, available at: www.reforme-aep.org

WSP –World Bank (2010) : Etude sur le prix de l'eau potable en milieux rural et semi-urbain

Triple S (2010) : étude prospective sur les modèles de délivrance des services d'eau potable au Burkina Faso.

Eau Vive : Projet PASEP de Zorgho

ONEA Comptes rendus techniques et financiers, 2005- 2009

I. BAMOGO (juin 2009): Diagnostic de l'organisation et de la gouvernance des services d'eau potable et plan d'action 2015 de la commune de Zorgho, Mémoire de fin d'études, Master d'ingénierie 2iE.

CONTACT DETAILS

2iE

01 BP 594 Ouagadougou 01

Burkina Faso

Senior Lecturer

Denis Zoungrana

denis.zoungrana@2ie-edu.org