Background paper for the Aguasan 24 (2008) workshop

Management Models for Rural Water Supply Services

Bruno Valfrey-Visser, Hydroconseil
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Second draft of the background paper, with a new and finalised section 5 (on the performance assessment of the main models), which takes into consideration the comments sent by Skat on the first draft. Four practical cases are annexed to this new version.

1. Introduction

The question that was raised in preparation of the 24th Aguasan Workshop ("Is community management enough to sustain the MDG efforts?") already contains part of the answer. Yes, it is increasingly recognized in the water and sanitation sector that strictly community-based management options have severe drawbacks. It is therefore one of the main objectives of this paper to look at all existing models for the management of water services in rural areas (a concept that will be more precisely defined below) and to identify which ones appear to be more promising than community-based models.

To conduct a comparative assessment of management models, it is important to follow two principles: i) make a clear distinction between "real" models (the ones that can be observed on the ground at a large scale) and "potential" models (the ones that are inspired by a theoretical analysis and that might have been tested on the ground, but only on a limited scale and with not enough perspective to pronounce their success or their failure). In this respect, this paper is not only a theoretical piece of work, but builds on the author's own experience, and gives ample attention to learning from practical cases.

Women at a stand post in a small town, Brong Ahafo region, Ghana. Photo credit © MIME Consult.

Rural water supply (not to mention rural sanitation) is an accumulation of attempts, models, experiments and approaches more often than not inspired by ideology, and in many cases little attention is paid to the drawbacks of the models that have been promoted, nor to the existing (and sometimes informal) models that actually work. For this reason, the author of this paper, on occasion, takes the liberty of expressing his own views on some issues and takes critical points of view on some existing management models. This paper is also meant to be a trigger for the discussions that will be held at the Aguasan24 workshop.

2. Defining the field of investigation

Rural areas. It is becoming more and more difficult to have a clear and simple definition of "rural areas". The population criterion is only one approach among others, and a rather limited one (Satterthwaite, 2003). The easiest way to define "rural areas" is maybe to say that those are the areas not expected to be served by the "dominant" operator in charge of urban areas. Using this definition, we include in "rural areas" both villages and scarcely populated areas and small towns[1]. The emergence of "small towns" as a specific topic in terms of Water Supply and Sanitation (WSS) services management is not new, and the necessity of developing a specific approach for small towns was largely conceptualized in the framework of the "Small town water supply and sanitation initiative" in 2000-2002 (Water and Sanitation Program (WSP), 2002).

Technical options. There is a strong difference between urban and rural water services, and part of this difference is linked to technical options. Urban water supply exclusively relies on the piped network technology, or tends to when a dominant operator is involved in the management of services. Rural water supply, on the contrary, consists of a blend of technologies, which fall into 3 main categories: wells, boreholes fitted with hand pumps and finally, small piped networks relying on ground or surface water. This blend of technologies, as well as the variety of situations regarding access to water resources, is typical of rural areas and has a strong influence on the type and performance of management models. For instance, in Senegal, the success of the "multi-village" model (where medium-sized towns and very small villages get their water through a sole network connected to one or several boreholes) can be explained by the policy developed by the Senegalese government in the 1980s, that led to the drilling of hundreds of deep and very productive boreholes (Valfrey, 2002). In this paper, we will try to embrace all available technical options.

Rural water supply. What do we call rural water supply? The definition of the sector itself has changed over the last 30 years. What we call rural water supply has gone through two major phases of "fragmentation" and can now be divided in at least 3 categories. Without over-simplifying, this evolution can be captured as follows:

<table>
<tr><td>1980-1990
The invention of hand pumps</td><td colspan="3">The Golden Age of Rural Water Supply
Dominant technology: wells + cheap boreholes fitted with hand pumps
Dominant management model: self-sufficient community groups</td></tr>
<tr><td>1990-2000
The invention of small towns</td><td>Small Town Water Supply
Piped networks, stand pipes
More complex models involving formal Water User Associations</td><td colspan="2">Village Water Supply
Technology: see above
Management model: still community-based, with a pinch of private sector</td></tr>
<tr><td>2000-2010
The rise of a new category?</td><td>Small Town Water Supply
Piped networks, stand pipes + house connections
More complex models involving delegated management to private sector</td><td>Village Water Supply
The same as above, but restricted to public investment, management by water committees and/or private sector</td><td>Self supply and "semi-collective" water supply, boosted by cheap technologies and privately managed</td></tr>
</table>

[1] The only inconvenience of this definition is that it would exclude specific cases where the dominant "urban" operator serves rural settlements. This was for instance the case with the RNET in Togo, and to a lesser extent with the SODECI in Ivory Coast. However, the general trend is to refocus the mandate (and the territory) of dominant operators on capital cities and secondary towns, leaving rural areas to other players (a good example of this phenomenon is the re-engineering of Ghana Water and the subsequent establishment of CWSA to take care of rural areas, including networks serving small towns formerly managed by Ghana Water).

In terms of investment, it is quite clear that small towns will still rely on public money for a long time, because heavy equipment is required (deep boreholes, water tanks, primary networks with big diameters...). An interesting question is to know into which category (or which categories) hand pumps will fall. Hand pumps are currently very expensive (around 1,000 $US), because they are mostly financed by donor/NGO (and government) money and therefore escape market rules, making it very difficult to open a market for very cheap versions (say around 100 $US), although this is feasible from a technological perspective.

It is quite likely that in a decade or so, cheap hand pumps will represent a profitable market, including in rural areas and therefore will partially fall into the "self water supply" category, obliging donors and governments to invent new ways of injecting public money in this segment of the sector. It is also quite likely that private actors will invest more and more[2] resources into rural water supply (hand pumps and networks).

Management models. What we call a "management model" in this paper is not only the theoretical set of arrangements governing the management of water services in a village or in a small town. It also includes under the approach of this paper the relationships between key players, however informal these relationships can be. Thousands of models are legally or institutionally possible, but very few can be effectively observed on the ground. This pragmatic approach also justifies the attention given to documenting practical cases.

3. Towards a typology of RWS management models

Key players in the management of RWS services

All players do not have the same weight in all the models – and some players are even completely absent in some models. However, all the models more or less have the same key players (those with a significant role in the model): (i) the State (in most cases, the Ministry in charge of Water and its regional/local branches); (ii) local authorities (which formally, in many countries, are in charge of managing water services); (iii) water users groups or associations (more or less community-based); (iv) private operators (pump mechanics, spare part resellers, network managers, etc.).

A first typology of models, based on the dominant player

The typology developed in this section is not based on the functional or contractual relationships between players but on three main distinguishing criteria, namely: (i) the key player involved; (ii) the scale at which the model is applicable (local/regional/national); (iii) the extent of delegation (the "arm's length") and (iv) the level of involvement of the private sector. This grid of criteria leads to the following models:

Brief description of the model	Key player	Scale of model	Arm's length	Private sector
The four main models				
Community management models	Community	Local	0	0
Municipal management models	Municipality	Local	+	+
The delegated management models	Operator	Variable	+++	+++
The privately-owned management models	Investor	Local	0	+++

[2] The phenomenon has already started in most countries, even if it remains difficult to quantify it. In Benin, the last inventory conducted by the Water Directorate revealed that more than 500 unregistered boreholes were privately operated by investors who installed a hand pump or built a small distribution network around a motorized borehole. This tendency is currently observed in urban areas, and considering the "market share" that rural areas and small towns represent, it is quite obvious that investors will progressively go to rural settlements.

Brief description of the model	Key player	Scale of model	Arm's length	Private sector
The more "exotic" models				
Nationwide or "national utility" models	Utility	National	0	Variable
Maintenance-oriented "packaged" models	Supplier	National	+	++
The "regional" management models	Federation	Regional	Variable	+

Some models encompass several sub-models or variants that will be discussed separately as necessary in this paper. These "families" are not only a theoretical construction: we will systematically associate each category or family with a few practical cases (some of which have been more carefully documented than others). These models are not mutually exclusive; some practical cases that can be observed are clearly a combination of several families of models: for instance, the "ANEPA" model in Mauritania is a combination of a nationwide model (because ANEPA covers the whole territory of Mauritania) and of the delegated management model (because ANEPA contracts private operators for the management of water services in each town or village). Finally, arrangements on the ground in a given context can evolve over time, drifting from one model to another model: for instance, in the 1990s, piped networks were constructed in the outskirts of Bamako (independent from the network of the national utility, EDM) and placed under a community management model – a users' association was managing O&M and providing services; a few years afterwards, after the failure of the association, the model had "spontaneously" evolved into a delegation model – the association had signed a contract with a private operator.

Can the typology encompass piped networks and hand pumps?

It is quite difficult to define models that work for small towns / piped networks, on the one hand and for hand pumps, on the other hand. Usually, the only common player is the "water committee" or the "water users association", which is directly involved in the management of the service in the case of hand pumps, and which is not necessarily directly involved in the management of water services in small towns (because many day-to-day operational tasks are usually delegated to private operators, including situations where these tasks are "delegated" to an employee contracted by the committee). The strong difference between hand pumps and piped networks also relates to the intervention scale: a management model can easily be sustainable in a single small town; on the contrary, hand pumps can only be sustainably managed at a larger – usually regional – scale, because the financial flows generated by the maintenance activity are extremely limited.

Some innovative projects are trying to overcome this apparent incompatibility in terms of scale, by grouping the management of small town services and the maintenance of hand pumps within the same contractual arrangements[3]. It is unfortunately a little bit too early to assess whether these new models will survive to the project phase, which would mean that private operators could have a real (financial) interest in engaging in such contracts. If successful, this option would also have to be supported in the RWS sector policies.

As much as possible, when describing existing models, this paper tries to distinguish the two situations (hand pumps vs. piped networks). , but it is not easy to find a common ground (in terms of management) for these two very different levels of service However, we believe that a successful hand pump maintenance system should be inspired by what is happening now in the small town area, where the gain towards more sustainability is coming at the same time from the involvement of the private sector and the professionalization of water boards.

[3] For instance, the « projet réforme » funded by AFD in Burkina Faso.

4. Overview of existing options (1): the four main models

The community management models

The community model is obviously the dominant one, and will probably remain dominant in the coming years. Even if the terminology varies strongly from one country to another, the main features of this model remain the same: a group of users is established at the level of the village or small town, usually by an election process and this "water committee" manages all aspects of the water service (operation and maintenance, and in many cases also the improvement of service: house connexions, network extension, etc.).

Advantages and limitations of community-based management[4]

Advantages	Limitations
▪ Proximity to users and capacity to locally managed conflicts ▪ Flexibility in the management of those who are in arrears with their payments ▪ The structure is permanent (members can change, the committee stays) ▪ The status of an association reduces the risk taken by each individual member ▪ Users have a better mechanism for expressing their demands and their concerns	▪ If members don't get any benefit from their involvement, the impetus is lost ▪ No capital and therefore no guarantee in case of mismanagement ▪ Limited skills to manage technically complex equipments ▪ Tendency to reduce expenses instead of increasing revenue from water ▪ Difficulty to develop a strategic vision of the extension of the network

What would be the most suitable role for a users' association?

- A users' group / water committee is suitable for managing users/clients who are not used to an "urban" service, and whose willingness to pay is generally low.
- A users' association will have a hard time managing the "production" side, which requires technical skills. On the contrary, a UA easily manages the commercial side.

This model offers the possibility of increasing the level of "ownership" at community level (a rather vague concept, considering the fact that in most cases the central or local government remains the true "owner" of the facilities) but has come under question under the suspicion of being little sustainable. The concepts of "common good" or "public service", once translated at local level, can lead to misinterpretation by the community. Often after a few years many "users committee turn into a small group of persons who manage the water service in a private fashion – which is not necessarily a problem per se, but clearly in contradiction with their initial mandate and in most cases with their legal status.

Among the models described in this paper, the community management model is definitely the one that looks more like a family of sub-models, with many possible options and variants. One of the main trends in the community management model is to consider the water committee/board more as a (professional) operator than a pure community body (see for instance Brand, 2004, for an example in Latin America). The same idea is developed in rural Benin for the management of hand pumps under the concept of "reinforced community management". Actually, the term "community management" functions more like a banner under which many institutional arrangements can be found, including situations where it is more a self-organised and almost "private" entity that manages the service.

[4] Adapted from Savina, Vézina and Valfrey, 2002.

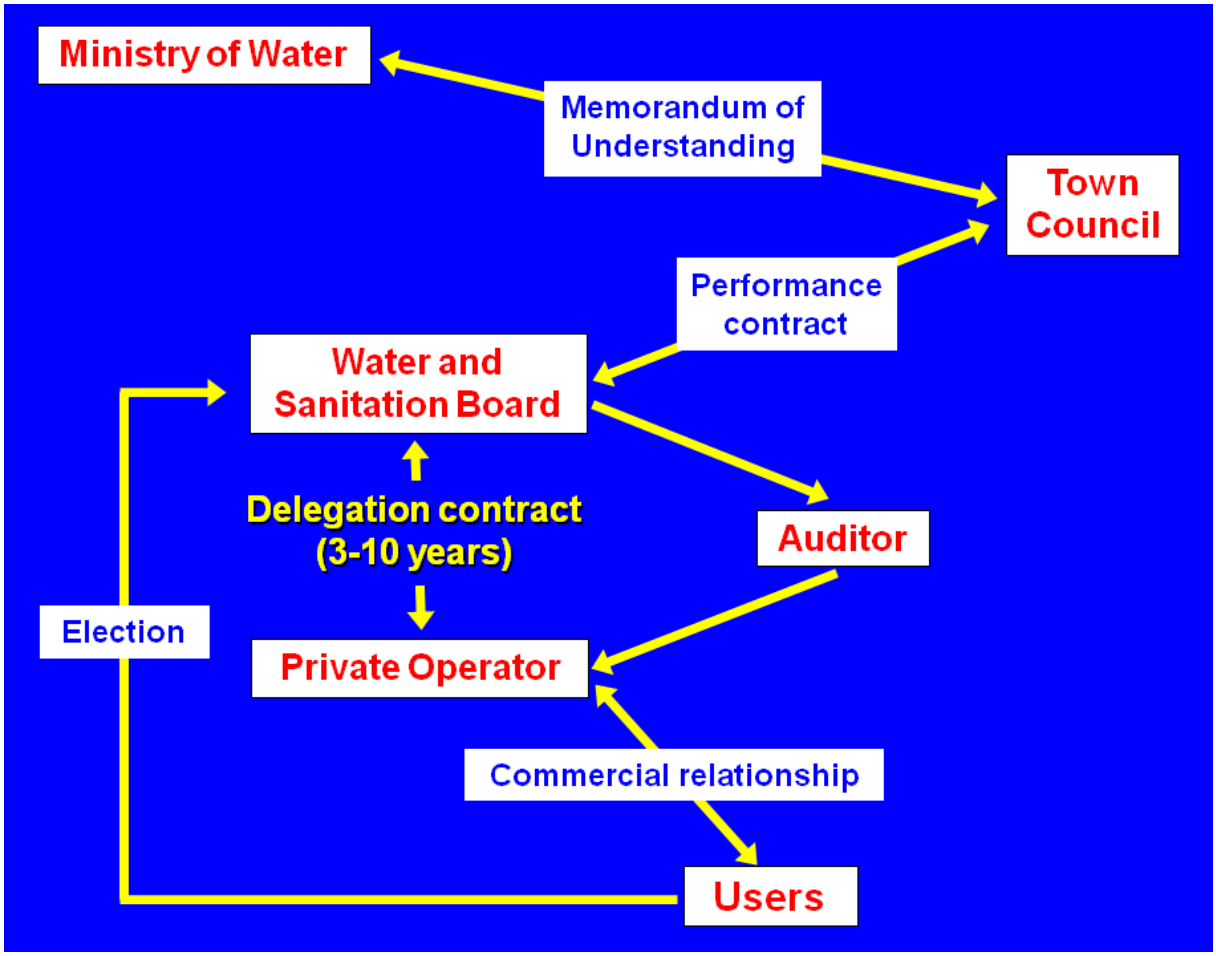
The municipal management models

In these cases, the water (or sanitation) services are managed directly or indirectly by a municipality, commune or district council. This is the case in many countries (worldwide, in both developed and developing countries this is probably the dominant model for rural areas) but in developing countries, and especially in rural areas, there are quite few cases of successful management of RWS services by the municipality. The drawbacks of municipal management have been discussed and documented elsewhere (Ringskog, 2003). The three main disadvantages relate to: (i) the difficulty of retaining good professional in the municipal departments; (ii) the difficulty of ring-fencing the revenue from water in a context where communes struggle with insufficient budgets; (iii) the difficulty of creating incentives for the municipality to expand services and finance new facilities, when the municipal / district investment budget is already under a lot of stress on other issues.

Examples: Colombia, other countries in Latin America??

The delegated management models

This category covers a very large family or models. The common point is the existence of a relationship (usually a contract) between an "owner" of the system (which can be the Government, the municipality or a WUA) and a privately-managed entity (that can be an individual, a small company or a CBO). The conditions of the contract, and the share of responsibilities between the delegating authority and the operator, can vary substantially from one case to another; the chart below gives an overview of the model, taking into account all the different possible levels of delegation:



The usual categories (management, lease, concession contracts) are not very relevant in the case of RWS services; spontaneously, the contractual relationship evolves towards a lease contract, which is the most balanced option. This model has proven to be very successful, because it relies on the capacity of the private sector to boost access and manage services in a dynamic way (the Mauritanian example is a very good one in this respect). However, it is more difficult to attract private providers into the management of village water supply services (hand pumps), and it seems that these models are more suitable in the case of small towns and piped networks. The drawbacks of the delegated management model are: (i) the difficulty of keeping a good balance (in terms of transparency and accountability) between the owner and the provider (especially in the situation where the owner is a WUA) and (ii) the difficulty of organizing a kind of regulation that would help keep prices down while guaranteeing quality (users' pressure is the best guarantee of such a regulation, but in case of conflict another entity needs to intervene).

Examples: Rwanda, Mauritania, Niger, Colombia, Uganda

The privately-owned management models

This is not a variant of the previous model, because of the complete absence of delegation. In this case, a private investor decides to build or equip a water point or a small piped network to serve a neighbourhood that does not have access to any kind of water service. These investments can be "spontaneously" made or encouraged by the government in the name of the "reality principle" (the government does not have the capacity to provide the required water services). Privately-owned management models are fuelled by competition and for this reason they often develop in peri-urban contexts, where there is the possibility of offering an alternative to the service provided by the dominant utility. The interesting question is to assess to what extent privately-owned water points (such as hand pumps) can be an answer to the need for sustainability in the management of RWS services.

Examples: Benin, Paraguay, Nigeria

5. Overview of existing options (2): the more exotic models

The nation-wide or "national utility" models

This family of models encompasses all those situations where a national "umbrella" entity directly or indirectly manages the RWS services. A first possibility is when the "dominant operator" (in general, the urban water utility) is directly in charge of providing services. The obvious advantage of this option is that rural dwellers get access to a good quality service; however the urban utility generally operates in rural areas at a very high marginal cost and the possibility for a "urban" utility to serve rural areas can only come from a significant cross-subsidizing system organized at national level (this is typically the case in Ivory Cost with the SODECI, and to a lesser extent with ONEA in Burkina Faso). Some attempts have been made to invent new "franchising" contracts that would reconcile the two aspects, but very few examples are known (the ONEP in Morocco abandoned such an idea per se and is now implementing a more classical form of delegated management).

The second situation is when a nationwide "umbrella" organization is established to host a certain number of management or lease contracts throughout the rural areas of a country. This second option presents a lot of advantages, the biggest one being the possibility of organizing a cross-subsidizing system between small towns/villages and bigger (and therefore more "profitable") settlements. The best example of such an umbrella organization is the ANEPA in Mauritania, which is also – unfortunately – a good example of all the difficulties that arise in putting in practice such an organization.

Examples: ONEP (Morocco), ANEPA (Mauritania), SODECI (Cote d'Ivoire)

The maintenance-oriented or "packaged" models

These models are usually only applicable to the management of hand pumps or solar pumping systems. The idea is to provide a package of services under the form of a lease contract. These services include, depending on the local situation maintenance, repair (including the supply of spare parts), collection of bills from the users, technical assistance to the WUAs, etc. In some countries (Mauritania, Burkina Faso, Benin, Niger), this package was marketed as a "total warranty scheme" associated with a given manufacturer (the French company Vergnet). Unfortunately, although the rationale behind this model is interesting, its implementation has not seen great success – for instance, in Mauritania, two years after the signature of the first contract, the number of WUAs interested in renewing their contracts had dropped tremendously, to the point that the local representative of Vergnet had to change its strategy and increase the yearly cost of the total warranty lease contract (Desille, 2004).

A pedal pump in Mauritania.
Photo credit © Hydroconseil.

Examples: Mauritania, Burkina Faso, Benin, Niger

The "regional" management models

The regional management models cover the situations where an umbrella organization provides services to a certain number of local managers/providers such as WUAs, cooperatives or private providers. The extent of these support services is variable and can range from technical assistance on such issues as maintenance, commercial management of accounting, to a higher level of integration, for instance the common management of saving funds, or a maintenance contract signed by the regional structure in the name of all its members. These models can be seen as a variant of the "nationwide" models, but there are two significant differences: (i) the regional organizations are usually CSOs, with a loose link or no link to the government; (ii) the regional organizations are less directly involved in the management of day-to-day services.

Examples: FAUEREB (Burkina Faso), South Western Towns Umbrella Organisation (Uganda), CGS-AEP and similar organizations (Mali), etc.

6. Trends and issues currently observed

What are the trends that can currently be observed in the RWS sector and that will influence the model(s) that will emerge or be promoted in the coming years?

Dominant operators. Are dominant operators likely to serve more rural areas in the coming years, as is the case for some utilities such as SODECI (Cote d'Ivoire) or ONEP (Morocco)? The logical answer is: not if they are not asked to... because the marginal cost of serving rural areas is too high for utilities designed to serve urban areas. It seems that this trend is marginal (although it has some prominence in the case of small towns – SNDE in Mauritania included 4 small towns into its perimeter in 2006, ONEA in Burkina Faso is planning to do so, as well as SDE in Senegal) and therefore will not significantly affect the rural sector. However, the role of dominant operators in the maintenance of RWS facilities and in the

support to users' groups or associations is a real issue – for instance in Niger, in the framework of the world bank-funded PSE, local network managers were trained (on technical and commercial issues) at the dominant operator's (SEEN) training centre.

Shift in the role of central government. If dominant operators only intervene when they are told to, central government (and their decentralized branches in regions or districts) are officially in charge of RWS, but in a very different way than 20 years ago, when they were managing investment projects. In almost all countries, the central government now has a facilitating and regulatory role; in addition, decentralized branches of the Ministries of Water are asked to provide support to WUAs and to audit service providers. This is only a theoretical involvement, because the central government (and more critically, its decentralized branches) do not have the human resources or the tools to play such a paramount role.

An uncommon scene: a man using a hand pump (actually, a consultant conducting an evaluation). Atacora-Donga region, North of Benin. Photo credit © Hydroconseil.

Local authorities/municipalities. The general trend is to hand over the responsibility for water supply to local authorities, even if in some regions (for instance Latin America) municipal management is quite old. While urban municipalities generally have enough capacity to manage water (and sanitation) services, this is normally not the case in rural areas, especially in countries where the decentralization process has led to the creation of hundreds of communes in rural areas (Mali, Burkina Faso). In this context, the "community approach" is sometimes in contradiction with the objective of building the capacity of local authorities. Governments and donors do not entirely trust the manner in which small local authorities manage funds (sometimes for good reasons) and many efforts must be made to develop new financing tools that would allow local authorities to fully play their role in the management of RWS projects and services.

Involvement of private actors. Involvement of private/independent actors in RWS is now a reality that cannot be denied (see for instance Valfrey-Visser, 2006). This involvement is even encouraged in many recently adopted water policies and generally follows two different streams depending on national policies, local contexts and donors' attitude towards the private sector. The first stream is a formal one, where the decision to contract a private operator is made by the government and implemented through a bidding process. The second stream is rather informal, "laisser-faire" stream, where an investor decides to build a water system because s/he feels that there is a market; or when a private operator (often an individual) takes over a water point or a water system that has completely collapsed in terms of management. Do we really take into account the private actors in the design of innovative management models for RWS – as promoted by the "FRUGAL" initiative? At a first glance, it seems obvious that more could be done in this respect.

Demand of rural users. The demand in rural areas is evolving at a different pace depending on the country, but globally the trend seems to be the same: more networks and less hand pumps. There is a strong demand for a better level service, and when a network already exists, users are interested in getting more house connections. The only limitations seem to be the capacity to pay and the sustainability of the service offered by networks. This

trend will consequently narrow the market share of hand pumps in scarcely populated areas or very small villages (for instance, in 2006, the Government of Mauritania decided that the new objective of the sector was to build a network in all the settlements of more than 500 inhabitants – a policy orientation that is obviously questionable in terms of sustainability but reflects the current trend in the demand of rural water users).

Hand pumps – no future? The failure of the hand pump "system" has been documented by many studies (Parry-Jones, 2001 or Desille, 2004). There are many reasons for this, the most important of which relate to the evolution of the users' demand itself (see above), the very low cash flow generated by the spare parts resale business (no economic operator is interested in such an activity) and the difficulty of creating a market that could allow a mechanic to earn his livelihood from through hand pump maintenance. Rural dwellers in Mauritania even show more interest in wells than in hand pumps (Desille, 2004). In this context, after the failure or limited success of almost all the models that have been experimented so far (VLOM, total warranty, etc.), the issue is to find new ways of dealing with hand pumps, that probably includes permanent subsidizing mechanisms.

7. Assessing the performance of the major models

Performance criteria

For conducting such an assessment we propose to use 7 performance criteria[5]:

- Financial and management autonomy: how autonomous is the operator in managing the cash flow, recruiting the staff, paying for O&M costs on a daily basis?
- Demand responsiveness: does the management model encourage the service provider to meet the users' demand in the most appropriate way?
- Competition: to what extent the model allows competition between providers or operators to offer the best possible service at the lowest possible cost?
- Incentives for expansion: does the management model encourage investments aiming at meeting the future demand and ensuring that all segments are served?
- Professional support: how easily can local players (and especially service providers) have access to support on technical or commercial issues and at what cost?
- Regulation: is the service provider in the position of financing the service development? Are the customer's rights protected against the provider potential abuses?
- Transparency and accountability: is the water service managed in a transparent way? Are accounts/contracts regularly audited by an independent body?

On the following page, we propose a ranking of each model against these 7 criteria. This is of course not an absolute ranking, since the respective weight of each criterion is different from one context to another and from one situation to another. However, it can help to identify the strong and weak points of each model. To keep the assessment simple and readable we only carried out the assessment for the 4 main models listed above.

[5] Adapted from the « key ingredients for success » – See WSP, 2002.

Global assessment of the 4 main models

Criteria	Community management	Municipal management	Delegated management	Privately own & operated
Financial and management autonomy	Autonomy of the water committee depends on the strength of its leaders 😐	Financial autonomy is a very strong bottleneck in the municipal management 💣	Most providers under delegation contract have a lot of financial and full management autonomy ☺	Financial and management autonomy of water provider is absolute in this case ☺☺
Demand responsiveness	Despite their proximity to users, community managers do not have a strong incentive to meet the demand 😐	In most developing countries, municipal management has a poor record in terms of demand responsiveness 😐	Depending on the contract conditions, providers usually have to meet the demand of their customers ☺	Because of the nature of their business, self-funded providers always meet their customers' demand ☺
Competition	The community model excludes any competition for or within the market ☹	The municipal model excludes any competition for or within the market ☹	Strong competition at the entry of the market, if the provider is selected on a competitive basis ☺	Very strong competition in this case (see the example of aguateros in Paraguay) – less obvious in rural areas ☺☺
Incentives for expansion	Unless the community leaders have a good vision, the model does not encourage expansion 😐	Unless the municipality has a good vision of the future of WSS, the model does not encourage expansion 😐	If the contract is wisely designed, the provider will have a strong interest in expanding the service ☺	Such a provider will have a strong incentive to expand its services... but not towards all users segments 😐
Professional support	Community managers have a hard time getting access to professional support ☹	Municipalities might have good access to professional support – depends mostly on their size and remoteness 😐	Access to support depends on institutional set-up and therefore on the good will of the central government 😐	Because of their informal nature, providers do not have access to such support ☹

Criteria	Community management	Municipal management	Delegated management	Privately own & operated
Regulation	Because of their local nature, community managers usually escape any form of regulation 	Central government is supposed to regulate municipal WSS, but in practice it does not do it, especially in rural areas 	Existence of a regulation framework entirely depends on the willingness of central/regional government 	Self-funded providers usually escape any kind of formal regulation, sometimes to the detriment of users 
Transparency and accountability	Water committees are transparent / accountable when their leaders decide to be so or when users keep them under pressure 	Budgetary confusion and political issues make municipal services poorly transparent and accountable – in most situations 	Because of the existence of a contract, providers are accountable to the delegating authority and obliged to a minimum of transparency 	Such providers are only accountable to themselves, unless the institutional framework oblige them to be accountable to somebody 

8. Annexes

8.1. Selected bibliography

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7.2. List of acronyms

AFD	Agence Française de Développement
ANEPA	Agence Nationale de l'Eau Potable et de l'Assainissement (Mauritanie)
BPD	Building Partnerships for Development in Water and Sanitation
BNWP	Bank-Netherlands Water Partnership
CBO	Community-Based Organization
CGS-AEP	Cellule de Gestion et de Suivi des AEP (Mali)
CWSA	Community Water Supply Agency (Ghana)
DEM	Direction de l'Exploitation et de la Maintenance (Sénégal)
EDM	Energie du Mali
FAUEREB	Fédération des Associations d'Usagers de l'Eau de la Région de Bobo
DBL	Design Build and Lease
IRC	International Research Centre (The Netherlands)
LSHTM	London School of Hygiene and Tropical Medecine
MDG	Millennium Development Goals
NGO	Non-Governmental Organization
O&M	Operation and Maintenance
ONEA	Office National de l'Eau et de l'Assainissement (Burkina Faso)
ONEP	Office National de l'Eau Potable
PADEAR	Projet d'Appui au Développement de l'Eau et de l'Assainissement Ruraux
PPIAF	Public-Private Infrastructure Advisory Fund
PSE	Programme Sectoriel Eau (Niger)
RNET	Régie Nationale des Eaux du Togo
RWS	Rural Water Supply
RWSN	Rural Water Supply Network
SDC	Swiss Development Cooperation
SDE	Sénégalaise des Eaux (Senegal)
SEEN	Société d'Exploitation des Eaux du Niger
SNDE	Société Nationale Des Eaux (Mauritania)
SNEP	Service National d'Eau Potable (Haïti)
SODECI	Société Des Eaux de Cote d'Ivoire
VLOM	Village-Level Operation and Maintenance
WBI	World Bank Institute
WEDC	Water Engineering and Development Centre (UK)
WSP	Water and Sanitation Program
WSS	Water Supply and Sanitation
WUA	Water Users Association

7.3. Overview of practical cases proposed

Country	Brief description of the case	Interest wrt Aguasan
Senegal	Multi-village networks managed by Water User Associations under the supervision of the Ministry in charge of water (DEM)	Good example of an upgraded version of the community model, offering a reasonably high level of service to rural dwellers
Colombia	Management delegated to small private water utilities in the Antioquia (Medellin) region	Case of combination in the same region of private companies and municipal utilities
Haiti	Pemerle – "Professional operator" under contract with the SNEP managing rural water services	Case of "soft" delegation model in an extremely poor country, rather successful so far
Mauritania	Agence Nationale de l'Eau Potable et de l'Assainissement (ANEPA) – umbrella structure for small operators managing water services in villages and small towns	Double example: an umbrella structure which keeps tariffs low in very small centres + delegation to small scale providers managing services locally
Paraguay, Philippines	Construction and management of water supply infrastructure delegated to private operators	Could allow (if we get more information) to document the successes and failures of the DBL model for rural areas
Rwanda	Delegation to private operators of networks formerly managed by local authorities (communes)	Good example of an involvement of the private sector in the management of RWS services which is clearly encouraged by the government
Burkina Faso	The "reform" project: linking the maintenance of hand pumps to the management of small networks	If we can access information, this could document the feasibility of linking "profitable" and "non profitable" maintenance markets
Burkina Faso	The FAUEREB, an Union of water users' associations offering support services to their members	Good example of a structure at regional level providing support to WUA managing small networks or different sizes and types

7.4. First practical cases documented

Following pages: first draft of four practical cases:

- Senegal
- Colombia
- Haiti
- Mauritania