Franchising in Small Town Water Supply

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EXECUTIVE SUMMARY

Throughout the world those responsible for provision of small town water supply struggle to find ways to deliver good quality service at an affordable price. Without the benefit of economies of scale small system managers often find it difficult to keep qualified local staff and afford the professional technical and commercial support that is needed to properly maintain systems and improve efficiency. There is at present no common approach to delivering small towns water supply services that meet the performance standards of good quality, affordability, sustainability and ability to expand. However, results from projects in a number of countries have suggested that there is a possibility of building a successful business around small towns water supply services if commercial business methods are used and technological support is available.

This paper reviews the potential for franchising in small town water supply as a means of providing incentives to local operators and introducing the type of professional support that is needed to improve service delivery, while keeping tariffs affordable.

Franchising in general

Franchising is arguably the most successful distribution strategy yet devised. In the major western economies between 30 and 50% of all retail trade passes through franchised outlets. Nor is franchising confined to the highly visible fast-food restaurants. Franchises occur in more than sixty different market sectors. Virtually any product or service that requires to be distributed to multiple customers through multiple outlets can be franchised. By virtue of the mutually supportive nature of the franchise networks, they have a very much higher rate of success than comparable independent enterprises. Features of franchising that contribute to its remarkable economic impact are:

- **Entrepreneurship:** Every franchise is operated by an independent individual, thus engaging their personal ambitions and entrepreneurial flair.

- **Reputation of franchisor – quality and standardization:** Because of the rapid penetration that a franchise can achieve, it will quickly establish a visibility in its market place for the “brand”. This brand will become associated with a particular standard of quality in the minds of the customers and potential customers.

- **Joint advertising, purchasing power, training, management support:** Although composed of many relatively small, independent units, a franchise network has the power and resource of a much larger enterprise. The financial structure of a franchise provides the opportunity for central purchasing of equipment, supplies and marketing and advertising programs.

Potential advantages of franchising in small town water supply

Town-based operators can generally perform routine operations of small towns water supplies well. However, what is often missing are the incentives to achieve efficiency and the
professional support needed to maintain good service at a reasonable cost and to expand facilities
to meet demand. Without technical, financial and commercial assistance town water supply
systems are destined to fail.

While it is widely acknowledged that private sector participation in water supply can improve
service and efficiency, there are few models in small town water supply. The revenue base is
generally too small to attract large scale private operators and those responsible for the service
(e.g., elected municipal officials) may be reluctant to entrust such a vital service to small scale
operators. Franchising is particularly interesting in that it leverages the limited skill in the water-
sector in a country and builds many small operating companies at the town level, while
introducing the benefits usually associated with private sector participation: entrepreneurship,
professional operations and maintenance and competition.

**Entrepreneurship in local operation**: By introducing an individual with entrepreneurial flair as
the franchisee, there is an automatic, built-in incentive to operate the water supply efficiently and
in a business-like way. The franchisee will have a desire to increase the business by growing the
system as fast and as widely as possible and, at the same time, will be supported by a franchisor
who institutes and monitors quality standards and provides the systems that would produce
effective water delivery management.

**Local ownership and operation**: The appointment of local people as franchisees provides for
the application of local knowledge to development of an effective network, with the franchisor’s
support and technical expertise. Ideally the franchisee would be a person with a stake in the
community, who has social as well as financial goals, and who would be responsive to the needs
of all sectors of their market.

**Professional operation and maintenance**: A franchisor can ensure a professional and unified
approach to the management of the water supply facility, quality control and technical help and
advice on an as-needed basis. The franchisor is able to provide resources normally only
available to larger systems at an affordable price because the costs are spread over a network of
franchisees.

**Competition**: To ensure that the franchisor and franchisees continue to provide good, affordable
water supply and grow and improve the business, the franchise lease or management contract
would be open to competition every ten years for the franchisor and every five years for the
franchisees. This would allow sufficient time for both parties to recover their initial investment
and also encourage them to perform well so that they would be re-awarded their lease or
management contract for a further term. Clearly it is in the interest of all parties to maintain
continuity where possible, but the option not to renew would bring a healthy “commercialism”
into the equation.

**Issues to be addressed**

Franchising in small town water supply is a new and untested idea. There are no franchisors and
franchisees currently operating in the sector in developing countries and no direct examples to
follow from more developed countries. Even so, it is reasonable to assume that potential
franchisors and franchisees, including international firms, local and regional firms and local entrepreneurs, will step in to fill the void if market conditions can be established to make franchising attractive to both buyers and providers of services. The specific issues that need to be addressed to attract competent franchisors and franchisees will include:

- Establishment of clear legal framework for contracting between franchisors and franchisees and between the owner of assets and the franchisee.
- Identification and removal of barriers to entering the market.
- Establishment of mechanisms for identifying willing and competent partners.

In addition, franchising must be commercially viable for the franchisee, the franchisor and for the customers. Specific issues related to commercial viability include:

- Ability of the franchisee and franchisor to achieve efficiency in operation
- Financing of initial development and subsequent rehabilitation and expansion of the system
- Regulation of tariffs and performance

While it is recognized that there will certainly be obstacles to developing and operating a franchise system, no better approach is currently being proposed. The principal challenge appears to come from problems inherent in small town water supply as a business, per se, and is not specific to a possible franchise solution.

**Pilot Project**

If commercial viability could be demonstrated in one or more sites and a “how to do it” package were developed around it then the basics for a franchise distribution strategy would be in place. There would be challenges remaining and this report makes no attempt to minimise these. Pilot projects in two or three countries would provide the opportunity to prove the concept and refine “package” of best practice, both business and technological. This work would also help to demonstrate that such facilities can be run as fully commercial ventures.
SMALL TOWN WATER SUPPLY

Introduction

This section examines the present situation of small town water supply in emerging economies, in broad terms, and illustrates the potential of franchising as a means of creating a business proposition that will attract entrepreneurs to this market sector.

Description of Small Town Water Supplies

A global electronic conference (February and March 2000) wrestled with the definition of small town water supplies in an effort to differentiate them from systems serving smaller rural communities and larger urban centers. Participants generally agreed that town water supply systems serve settlements that are sufficiently large and dense to benefit from the economies of scale of piped systems, but too small and dispersed to be efficiently managed by a conventional urban water utility. In addition they require formal management arrangements, a legal basis for ownership and management, and the ability to expand to meet the growing demand for water. Small towns usually have populations between 5,000 and 50,000 but can be larger or smaller.

Basically town water supplies are small piped systems that require local operators and professional technical and financial management support for things like system design and planned expansions, maintenance of treated water quality, reduction of unaccounted-for-water, resolution of operational problems, reducing operating costs, increasing sales, financial projections, and accounting.

System Description

Town water supplies usually draw water from groundwater boreholes or surface water intakes, pumping it first to a treatment plant and then to storage tanks within the community. Sometimes water can be drawn from springs or surface sources above the town so water can flow by gravity without pumping. Water is then distributed by gravity through a network of distribution pipes to individual customers and public standpipes. The amount of piping depends on the housing density and number of individual connections. Generally groundwater is preferable to surface water based systems because little if any treatment is required and facilities are less expensive to build and operate. The level of service and demand for water depends to a large extent on the reliability of the service and number of connections.

Facilities are usually either undersized or oversized, and tend to jump from one to the other condition as a result of ‘once in a lifetime’ financing opportunities. Typically more than half the water in older facilities can not be accounted for and less than a third of the potential market is served. To meet demand a commercial operator would immediately reduce unaccounted for water by at least half, and seek financing to double water production and increase the number of house connections in existing and extended service areas.
What usually happens is that systems are designed on the basis of perceived demand – i.e. what engineers/planners think users need rather than what they will buy given the real price of producing and distributing water. This is exacerbated by textbook engineering – i.e. the use of standard peaking factors for daily and seasonal water use, plus demand forecasts based on expected population increases over long planning horizons. The result is that the systems are oversized, often by a factor of five or more, and tariffs are not affordable. The system is technically sound, but bankrupt from the start.

Management Types

Town water supplies are usually managed by Municipal Water Departments, Municipal Water Boards, or Water User Associations at the local level, or by Public Water Utilities at the regional or national level.

- Municipal Water Departments are normally integrated into the administration of local municipalities with revenues mixed with the overall municipal budget. Lack of autonomy and political interference in both technical and financial matters often results in poor service.

- Municipal Water Boards are normally elected or appointed to oversee planning and operations of autonomous municipal water companies whose facilities are owned by the local government.

- Water User Associations are usually composed of community members who meet annually in a general assembly, an executive board that meets periodically to make management decisions, and an operating group. The co-operative is financially autonomous, but not always formally recognized as an independent legal entity. Ownership generally remains with local government.

- Public Water Utilities are established through national legislation. They typically are charged with the provision of water to a single metropolitan area or to a number of urban centers and towns in all or part of a country. They are charged with planning, constructing and operating the facilities. Oversight is usually provided by a board of directors appointed by the water ministry.

- Private Sector Participation: Operations may wholly or partially contracted out to a private company under any of the above management arrangements. Contract options include management contracts (the company is paid a set fee or a fee plus a share of profits, 2-5 year contract); lease contracts (the company finances operations and maintenance from its own revenue at its own risk, 7-15 year contract); or concessions (the company finances investments, operations and maintenance from its own revenue at its own risk, 20-30 year contract).

Issues in Small Town Water Supply

Municipal Water Departments tend to be limited by the overall management capability of the municipality, and are impeded by normal municipal procurement and hiring practices. Staff are usually more interested in technical than financial matters so systems tend to be over designed and are not financially viable.
The autonomy and single purpose function of Municipal Water Boards and Water User Associations better assures financial viability since they retain their own revenues for reinvestment in the system and make their own operational decisions, however, the water supply still is not treated as a business and not run professionally. Dedicated boards also help ensure accountability to users and better oversight of planning and operations. Water User Associations are likely to set service levels that match their desired tariff levels and willingness-to-pay than Municipal Water Boards. However, they are less formally managed than Municipal Water Boards, may not represent the entire community, and can lack of the legal basis and permanence needed for long term sustainability.

Public Water Utilities are financially autonomous but the revenue from more than one town may be pooled, with individual towns operating on a budget controlled by central management. As a result there is little incentive to operate efficiently, since surplus revenues go to support services in less efficiently run systems. Organization is normally highly structured at both the national and regional levels; in fact the structure itself becomes a detriment to effective service provision. The bureaucracy involved in purchasing parts and supplies also has a major impact on service. There is very little accountability to consumers. Expensive, oversized systems are common and political considerations often take precedence over financial viability when tariff adjustments are considered.

The big advantage of private water operators is that they bring professional services and can be employed through arms length contracts that separate the oversight body (water department, water board, user association) from operations and related conflicts of interest in excusing their own poor performance and in hiring and firing operating staff for personal reasons.

International private companies have entered the market to provide water supply services in large urban centers, typically with populations of at least 500,000. There has been less interest in the provision of water supply services to small towns where economies of scale are lacking and geographical dispersion makes them less economical to operate. Combining small towns with larger urban centers can result in a sufficient revenue base to be interesting to international private operators, but even so there is a tendency for operators to limit investments in the smaller towns in order to limit their financial losses. The real issue is how to provide professional services to towns that have small revenue bases, for example $20,000 per year for a community of 5,000 (20 lpcd at $0.50/m3).

The autonomy and single raison d’être of water boards and water user associations overcome many of the problems associated with municipal water departments and public water utilities. Revenues can be retained thereby advancing for financial viability and reinvestment in the system, accountability to users is direct, oversight of planning and operations is strong, service matches acceptable tariff levels, and operational decisions are based on the needs of the water supply system rather than other political considerations. Also, town based operators can perform routine operations well. What is missing is the professional support needed to maintain good service at a reasonable cost and to expand facilities to meet demand. For example, professional technical and financial skills are required for (i) planning, design and construction management of new/rehabilitated systems and planned expansions; (ii) ongoing strategic planning to reduce unaccounted-for-water and increase sales through distribution extensions, new connections and tariff management; (iii) advice on maintaining treated water quality, reducing operating costs and
resolving operational problems; and (iv) advice and oversight on accounting. Without such technical assistance systems are destined to fail, even if the water boards and user associations are keen to succeed.
**WHAT IS FRANCHISING?**

**Introduction**

Franchising is a method of distribution of a product or service, whereby the developer of a business concept – the “Franchisor” – licenses an individual or enterprise – the “Franchisee”, to operate that business concept, using the Franchisor’s system and brand name.

Typically the Franchisor will open and operate one or more pilot units to test the product or service, the market reaction to it and the best way of delivering it to the consumer in a profitable way. Following a successful trial period, the management and operational systems are recorded in a set of detailed procedures manuals. This becomes the intellectual property that the Franchisor will pass on to the franchisees. However, the Franchisor always retains the proprietary rights to this intellectual property. The Franchisor will also create and register a brand image, under which the Franchisee will be licensed to operate.

The Franchisor’s reasons for doing business this way are that:

- it allows very rapid spread of business units, thus achieving quick and effective market penetration
- it does not require the Franchisor to raise large capital sums to develop his own network
- it removes the need to hire and manage a large number of employees and liberates the entrepreneurial skills of the individual franchisees
- it provides a regular and growing income stream from the franchise fees and royalties

The Franchisee’s reasons for acquiring a franchise, rather than starting up in business independently, are that:

- the franchisor has tested and proven that his way of doing business can be successful and profitable
- usually, no previous experience is required as full training is given by the franchisor
- the financial needs are clearly defined at the start so that the franchisee knows what will be needed for initial and ongoing expenditure
- financial institutions can see the financial performance in existing units and take a favorable view to make funds available
- the franchisor commits to ongoing support and guidance and carries out developments on product, production methods and delivery systems, thus freeing the Franchisee to concentrate on operating a profitable business
- the franchisor establishes a recognizable brand and provides marketing programs to promote it
- the franchisor establishes beneficial relationships with suppliers for equipment and materials, from which the franchisee benefits
Both parties commit to a “long term” relationship through a formal contract, the term of which is typically ten to twenty years. This contract will specify the duties of both parties towards each other, the territory within which the franchisee is licensed to operate and the fees that will be due to the Franchisor. Additionally it will cover reasons for termination by either party, the term of the agreement and the conditions for renewal.

*A sample agreement is shown at Appendix F*

**Financial arrangements**

The typical fees in a franchise system are:

- an initial “Franchise Fee” which is normally a lump sum paid by the franchisee for the right to the license to operate under the brand and to acquire, through training and other means, the business know how of the franchisor. These sums vary greatly, but would normally include the cost of initial training and start-up assistance
- an ongoing payment frequently called the “royalty” or “management fee”. In most cases this will be a percentage of gross sales, paid monthly. There are many variations in this area, but the basic principle is that there is a continuing payment from the franchisee to the franchisor for the right to continue to operate under the brand and to receive continued support and development from the franchisor.
- A marketing fee, again most usually a percentage of gross sales paid monthly. This sum is used by the franchisor to augment the central marketing budget and is spent entirely in this context. It should not be seen as a way for the franchisor to increase revenue to the corporation.

In addition to the above, it is common for the franchisor to be a principal supplier if equipment and/or material to the franchisee. This is attractive to the franchisee because of the buying power that the franchisor can exert on behalf of the whole network. It is good practice for the franchisor to pass on the major part of this benefit to franchisees, retaining only a small percentage to cover administrative costs.

*Note: In some systems, e.g. ice cream franchises, the franchisor is the supplier of all material and will take a profit margin on supplies instead of royalty.*

The above relationship can operate on a purely “domestic” level i.e. within the boundaries of a single country, or internationally. In the latter case, it is more common to grant a “master license” to develop a country or group of countries, under which the “Master Franchisee” is granted the right to sub-franchise within the territory and effectively becomes a Franchisor in his own right. A similar fee structure is applied to that described above.

**Why franchising works**

Features of franchising that contribute to its remarkable economic impact are:

*Entrepreneurship:* Every franchise is operated by an independent individual, thus engaging their personal ambitions and entrepreneurial flair. Franchised units invariably outperform
comparable corporately owned units operated by employees rather than individual owners. Because franchise territories are “protected” under their contracts, franchisees behave cooperatively with each other.

**Reputation of franchisor – quality and standardization:** Because of the rapid penetration that a franchise can achieve, it will quickly establish a visibility in its market place for the “brand”. This brand will become associated with a particular standard of quality in the minds of the customers and potential customers. It is the goal of the franchisor to establish and maintain that quality by standardizing and monitoring the operational procedures in the franchised units. The customer should have the same experience every time or anywhere he or she does business with a franchisee. The Franchisor develops a comprehensive management and operations system that is capable of replication and passes it on to the Franchisees through initial and continuous training. This establishes the quality standards and these are maintained through constant monitoring, counseling and re-training of the Franchisees.

**Joint advertising, purchasing power, training, management support:** Although composed of many relatively small, independent units, a franchise network has the power and resource of a much larger enterprise. The financial structure of a franchise provides the opportunity for central purchasing of equipment, supplies and marketing and advertising programs. These economies of scale are passed on to the franchisees, making them very competitive with their local rivals. Similarly, the franchise network is an excellent research organization, feeding back to the franchisor improvement ideas for operations and marketing that can be incorporated into the operating procedures and shared throughout the network. Constant improvement, development and management support are vital features of the franchise relationship, illustrated by the slogan “Be in business for yourself, not by yourself”.

**Franchising in Small Town Water Supply**

As described in this report, town water boards and user associations offer management models that meet fundamental autonomy, accountability, management stability, flexibility and cost effectiveness needed for sustainable, good quality water supply services in small towns. There are also promising arrangements for providing the professional support that’s needed to operate these systems including management contracts, lease arrangements, and concessions of individual systems to local private operators. And more holistic approaches such as BOT and franchise arrangements.

Factors that directly affect the **financial viability** and **service level** of a town water supply include:

- **Financial autonomy for the franchisee is necessary** so that with revenues can be reinvested. The franchisee will be expected to risk some capital in the venture. The system would be developed in such a way that there would be a strong incentive to the franchisee to reinvest to grow the water supply network, thereby increasing volume and revenues.
• **The credit-worthiness of the franchisee** would be a factor so that loans could be obtained to renew and expand the system (the initial investment would come from the donor organization, as described elsewhere). The financial performance of the franchisors pilot units and other franchisees would be provided as evidence of the viability of the concept.

• **Regulations** would need to be in place that would allow tariffs to be raised while protecting the consumer. This will be a delicate balance and one in which the franchisor will be closely involved. Franchisees would not be permitted to raise tariffs without community consultation and franchisor sanction.

• **Cost effective design and cost effective operations** would be piloted by the franchisor in pilot units so that water is could be provided at an affordable level for the various categories of consumers. Widespread creation of franchise units should not take place until these factors have been tested and proven.

• **Political support** for the management organization

• **Management stability** underpinned by clear legal basis for ownership and management

• **Flexibility** to innovate and procure goods/services

• **Technical support** to professionally manage the system

• **Accountability** to users
OUTLINE FOR FRANCHISE DEVELOPMENT FOR SMALL TOWN WATER Supply

Introduction

There is sufficient similarity between individual small town water supply facilities and their method of operation to suggest that a system that provides for replication (as occurs in commercial franchises) could be introduced with some benefit. While wide variations of resources, geography, culture and financing may exist, all are providing the same basic product, using similar technology to markets of similar size. Even if a complete “classic” franchise system proved unworkable, some hybrid approach that introduced, at the very least, a business package that helped facility operators to run their businesses better would be advantageous.

Institutional arrangements

Stakeholders: A franchised system to supply water through locally operated Facilities would involve the following stakeholders:

- The **Public Granting Authority (PGA)**, which would generally be the asset owner, or asset holder of the facility – this may be a local government, the national government or a legal entity established for the purpose of owning assets and managing contracts for designated water supply systems.
- The **Regulator** of water supply facilities may be the national or local government. – an independent regulator establishes the required standards to which the service will operate. Tariffs would be determined by the independent regulator in consultation with all stakeholders – Owners, Franchisees and Consumer Associations.
- The **Franchisor** – that would develop and test operations and financial management systems and would be a technical resource to provide management and technical support for facilities, as well as training of operators.
- The **Operator/Franchisees** who operate individual facilities on a day-to-day basis under license/lease from the franchisor; responsible for source, treatment, transmission, storage and distribution.
- The **User Association** with whom the franchisor/franchisees would consult on a regular basis to ensure transparency of the management of the water supply system.
- The **Financing Agency** (World Bank/IFC/EBRD etc.) that would provide all or part of the funds needed to create new, or rehabilitate existing, small town water facilities (but note that normal operations, maintenance and repair costs are financed through tariff revenues).

Role of the Franchisor: The franchisor provides professional support services to the town water boards and town operators to help with (i) planning, design and construction management of new/rehabilitated systems and planned expansions; (ii) ongoing strategic planning to reduce
unaccounted-for-water and increase sales through distribution extensions and new connections plus tariff management; (iii) technical advice on maintaining treated water quality, reducing operating costs and resolving operational problems; (iv) oversight of normal operations and maintenance; (v) provision or supervision of scheduled major maintenance and emergency repairs; (vi) provision of or quality control for treatment chemicals and common spare parts; (vii) advice and oversight on accounting by the operator; (viii) support to operator on business management; (ix) support to the water board on technical and financial management and decision making processes.

**Role of the Operator/Franchisee:** The Franchisee would operate the Facility in the way laid down by the Franchisor and detailed in the Operating Procedures. The Franchisee would be responsible for expanding the system to new customers and ensuring that the level of service was satisfactory. It is anticipated that, in most cases, the Franchisee would also collect revenue from consumers. The appropriate fees would be paid to the Franchisor, and it is anticipated that a proportion of revenue would be allocated to investment in and expansion of the system. The franchise agreement will contain conditions under which the franchisee would lose the franchise/lease – for example, non-payment of fees or poor operations performance. Cure periods would be provided for, however. An alternative would be for collection to be separated from operations. In this scenario the Franchisor or an agent appointed by the Franchisor, would collect all the revenue from water supplied and pay an agreed percentage to the Franchisee. This eliminates the opportunity for mis-reporting but still leaves the Franchisee with an incentive to increase sales volume.

**Initial Funding:** An “Introductory Offer” would be made through the government, with the support of funding agencies, that funds either the creation of the facility or the rehabilitation of an existing one. This funding of capital costs would probably have to be on a partial or total grant basis. It appears unlikely that in many cases the commercial operation of a facility would be able to support full debt financing, while in day-to-day operational terms it could be profitable.

**Creating the Franchise:** The franchisor could be a completely new commercial enterprise entering the market or could be a restructured regional water authority, or a combination. If the on-going operation of the facility could be demonstrated to be profitable, it is probable that a commercial operator (or operators) could be attracted by the additional commercial advantages of a franchise arrangement. The strategic entity (the “franchisor”) would be responsible for developing and operating a pilot unit, creating the operating and financial systems for the facility based on the performance in the pilot unit, the planning necessary to establish viable facilities throughout the territory, including a finance strategy for the start-up costs for the operator/franchisee. The franchisor’s strategic development plan for opening new facilities, based on proper market studies would be used by the PGA to attract funds for financing these units and/or rehabilitating and expanding existing units.

The franchisor will be well placed to assist the franchisee in making an application for funding based on a standardized approach. Based on pre-determined franchisee selection criteria, the franchisor would work with indigenous lending sources to assist franchisees in raising start-up
capital. The system would be designed so that the entry cost for franchisees was kept as low as possible through leasing programmes for capital equipment.

The franchisor could be:
- a major utility company currently operating only in large towns but wishing to expand;
- an existing operator of small town(s) water supply;
- a local entrepreneur with an experience in this sector;
- an NGO, quasi-governmental body or a not-for-profit enterprise
- an international water supply company wishing to penetrate new markets;
- or a combination of some of the above – e.g. local entrepreneur and international operator.

Selecting the Franchisee: The franchisees in a water supply system should essentially be people with business experience within the local commercial life of the country. They should have demonstrated entrepreneurial initiative within their community and would, ideally, be from within the community that they are planning to serve (though perhaps only larger communities will have a large enough pool of candidates to provide staff of a high calibre. Previous experience in this sector would not be required, as training and support would come from the franchisor. It is probable, in some territories that a “family” operated business would work well, but the key selection would be the “leader” who would sign the agreement. A more detailed profile would be developed based on the experience and performance of pilot units and would probably vary from territory to territory.

Franchisor Services: The franchisor would:
- Agree a territory wide plan with the regulator that would establish areas of priority for development
- Develop the complete operating plan and procedures for a town water supply business in the territory (this could be an adaptation of a “generic” system developed by the government with the assistance of donors)
- Select, train and support the start-up of franchisees
- Agree the necessary rehabilitation or establishment plan and associated costs for the water supply facility and act as conduit for funds from third party to ensure work was carried out to specifications and that funds were not misapplied.
- Provide ongoing technical support and marketing programs to franchisees
- Train and retrain franchisee employees
- Supply equipment and material to the franchisees at beneficial rates obtained through bulk, central purchasing.

Lease/Franchise Agreement Period: The franchisor would contract the franchisee to operate the facility for an agreed period e.g. five to ten years, and provide training and management and technical support for the life of the contract. The contract has to be long enough to allow the franchisee to make a reasonable return on the investment.
Exit Strategy: An exit strategy should be included in the legal framework. That is to say, if the objective is to deliver good water at an affordable price to as many people as possible in small towns, then the franchisor/franchisee relationship need not be a permanent one. The franchisee might be granted full independence based on a period of satisfactory operation and after an agreed period of time – e.g. five years. Alternatively, there could be a reduced level of fee in exchange for a reduced level of service from the franchisor. This strategy would be more likely to be acceptable if the franchisor were to be an NGO, quasi-governmental body or a not-for-profit enterprise. A fully commercial franchisor would probably resist such a format.

Contractual arrangements

Lease agreement: or management contract between asset owner and operator/franchisee

Franchise agreement: between franchisor and operator/franchisee (could be required as subsidiary agreement to lease agreement or management contract to ensure that professional support will be provided)

The franchisor would create, with the involvement and approval of the regulator, a charter that would commit to quality standards and development goals that would be provided to Town Water Boards. If a franchised delivery system were to be introduced a standard franchise agreement would suffice. This franchise agreement should, at a minimum, have the following features:

- A sub-license from the regulator to provide water in a specified town (location to be confirmed in a map to avoid later dispute if an adjacent town grew!)
- A lease agreement for the operation of the facility – of the same term as the franchise agreement.
- Details of the fees that would pass from the franchisee to the franchisor
- The duties of the franchisor to the franchisee (see also item 4 above)
- The duties of the franchisee. This section would include a detailed description of the quality standards to be adhered to and would include the conditions and procedures for operation laid down in the Operations Manuals provided by the franchisor
- Terms of the agreement, including conditions for renewal or exit
- Conditions for termination by either party and the consequences of termination (e.g. loss of right to operate the facility by the franchisee)

Note: A generic franchise agreement is attached at Appendix D of this Report. This is for illustrative purposes only and it is probable that a more simple contract could be drawn up which would serve the purposes of this project. Should the territory be sufficiently large to warrant the introduction of area developers, their agreement would include the right to operate more than one unit in an agreed area and/or the right to sub-franchise, again in an agreed area.
Payment terms and other typical provisions in such a franchise agreement would be as follows:

- An initial fee from franchisee to franchisor would cover the cost of initial training, the provision of the business package and assistance with start-up. This fee should be kept as low as possible so that potentially good operators are not discouraged, but is nevertheless important. The franchisee should have a stake in the business beyond the investment of time and energy.

- An ongoing fee, based on sales volume, for the continued right to operate the system under the franchisor’s trade name and for continued technical and business assistance. The options on this fee include:
  - Variable fee (royalty) - Franchisee pays franchisor a fixed monthly fee for the lease plus a variable amount (royalty) probably a percentage of sales volume. This is the most usual form of franchise fee, but relies heavily on the recording/auditing systems to ensure that under-reporting does not occur. It is possible that modern metering systems would remove this problem in a water supply franchise.
    
    Note: In the case of poor collection experience, the franchisee would be likely to argue that royalty should only be paid on funds collected, not due. This issue needs to be addressed.
  
  - Fixed fee (royalty) - Franchisee pays franchisor fixed weekly/monthly fee to receive ongoing technical and management support from franchisor. This fee would be calculated on the basis of projected levels of income from tariff revenues that the Franchisee could expect to collect, starting at a relatively low level while volume builds and escalating to target levels over, say, a three year period, thereafter leveling off.

- It is possible, but not likely, that a marketing programme would be included in the package and in this case an additional fee would be paid to contribute to the ongoing cost of this programme. These fees are pooled with the marketing programme benefiting all parties.

  Note: It is fundamental that a budget be developed on the basis of a pilot operation that determines the level at which fees have to be charged to make the business “interesting” for the franchisor, and conversely at a level that makes being a franchisee attractive.

*Independent Regulator:* reviews tariffs and rules for access to service, monitors contractual agreements; may also license franchisors.

**Financial Arrangements**

A diagram of the likely flow of funds in different franchising arrangements is included as Annex ___. Each of the parties will need to make an independent evaluation of the viability of a
proposed arrangement, taking into consideration their own requirements. The following table summarizes the requirements of each of the stakeholders:

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Financial Requirement</th>
<th>Key Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Tariff does not exceed the tariff projected under current arrangements</td>
<td>The level of service provided under franchising must be equal to or higher than the level that is currently provided</td>
</tr>
<tr>
<td>Operator/Franchisee</td>
<td>Amount cleared after paying expenses and transferring funds to other parties (franchise fee, regulatory fee, lease fee) is better than what could be earned as a salaried employee, including benefits, or equal to what could be earned in alternative business opportunities with similar risk</td>
<td>The Franchisee would likely require enough of a surplus to justify the level of effort expended</td>
</tr>
<tr>
<td>Franchisor</td>
<td>Revenues from initial start-up costs and ongoing franchise fees cover operating expenses and provide a minimum return on investment</td>
<td>Some minimum number of franchise agreements would be needed in order to provide sufficient revenues at a reasonable rate</td>
</tr>
<tr>
<td>Public Granting Authority / Asset owner</td>
<td>Lease fee (included as an element of the tariff) must be sufficient to pay debt service and/or capital expenditures plus the costs associated with monitoring performance under the contract</td>
<td>The PGA is ultimately responsible for provision of service and for payment of debt service and renewal and replacement of assets</td>
</tr>
<tr>
<td>Regulator</td>
<td>Regulatory fee (included as an element of the tariff) must be sufficient to cover the costs of regulation</td>
<td>Outside support may be required in the early stages until enough franchise agreements are in place to support the regulator from regulatory fees</td>
</tr>
<tr>
<td>Funding Agency</td>
<td>If financing is provided by a development bank (e.g., IDA), funds must be earmarked at some level for repayment of loan or credit with interest, as specified in the loan or credit agreement</td>
<td>Funds may be on-lent at concessionary terms</td>
</tr>
</tbody>
</table>
**Start-up costs:**

Start-up costs would be incurred by the franchisor to become established in the market, the franchisee to establish a local business and likely by the PGA/asset owner to rehabilitate or expand the existing water supply system or construct a new one.

**Franchisor start-up costs** would include:
- Market entry costs (if not already present); e.g., establish an office with staff and operating assets, register as a legal entity, obtain necessary licenses to operate
- Marketing costs
- Development of agreements specific to the country and the legal and regulatory framework in place
- Development of systems to support commercial and technical operations of franchisees

The set up of the franchisor could be internally funded by the entity itself through its own funds (as in the case of an international company) or by third party funding (as might be necessary if a local provider or entrepreneur were to wish to become a franchisor). In either case, third party funding for a pilot project and the development of the franchise package would certainly accelerate and facilitate this process and provide for the introduction of certain quality and social issues that would not necessarily be included in an entirely independently funded venture.

**Franchisee start-up costs** would include:
- Fees to be paid to the franchisor
- Sufficient funds for working capital
- Funds for setting up a local office and procuring operating assets (could be arranged through leases, with the support of the franchisor or a third party)

In some cases the franchisee would have access to sufficient funds to meet the above costs. Where this is not the case, a secondary lending source would have to be found or developed. It is possible the franchisor could establish a lending/credit source with a local bank, with third party guarantees provided by the franchisor or a donor (e.g., IFC, EBRD).

**Investment needed to rehabilitate, expand or establish the facility** would probably need to be provided by or from third party (i.e., the government possibly with some contribution by users, donors). Existence of contractual arrangement for operation and maintenance of the system might be a pre-condition for receiving financing from designated sources (e.g., IDA funded project, other donors, central government’s budget)

**Ongoing Operations**

Tariffs would typically be set to recover (a) operating and maintenance expenses, (b) a franchise fee, (c) on-going capital expenditures to be internally funded and (d) debt service on that portion of the rehabilitation or initial investment costs the government has determined should be passed through to customers. A regulatory fee, usually a percentage of revenues, would be added to each bill and passed through to the independent regulator to cover the cost of regulation.
The flow of funds and assignment of risks would depend upon whether the franchisee/operator is operating under a lease agreement or management contract. Under a lease agreement, the franchisee/operator would collect revenues and pass through the franchisee fee to the franchisor and the regulatory fee to the independent regulator, and would pass through the stipulated lease fee to the PGA or pay it into a special account reserved exclusively for capital expenditures and debt service of the water supply system. Operating and maintenance expenses would be paid from remaining funds and the franchisee/operator would be entitled to keep any overage. If a management contract is in place, the franchisee/operator would collect revenues, pass through the franchisee fee to the franchisor and the regulatory fee to the independent regulator, would retain the stipulated management fee, from which operating and maintenance expenses would be paid, and the balance of funds collected would be transferred to the PGA. The fundamental difference between the two types of contractual arrangements (lease agreement vs. management contract) would be that the franchisee/operator would take more risk and have greater incentive to enforce collections under a lease agreement than under a management contract.

The flow of funds from on-going operations would typically be as follows:

- **Revenues** would be collected by the franchisee/operator.

- **Routine operations and maintenance expenses** (salaries, chemicals, power, transportation, general and administrative costs) would be paid by the franchisee from revenues. The franchise agreement would clearly differentiate between routine operating and maintenance expenses to be paid by the franchisee/operator and major maintenance, which would be the responsibility of the PGA.

- A **franchise fee** would be paid by the franchisee/operator to the franchisor, probably on a monthly basis. The franchise fee could be a fixed monthly charge, a percentage of revenues or some combination of the two, as specified in the franchise agreement.

- A **regulatory fee** would be added to each bill and would be passed through to the independent regulator. The regulatory fee is usually a designated percentage of revenues.

- If service is provided under a lease agreement, the **lease fee** would be paid into a reserve account to be used to finance capital spending and debt service. The balance would stay with the franchisee, providing incentive to maximize revenue collection and efficiency in operations.

- If service is provided under a management contract, the franchisee/operator would retain the **management fee** and pay the balance (over routine operating and maintenance expenses) to the PGA.

**Financing investments**

In many cases small town water supply systems in developing countries are in need of immediate rehabilitation and expansion. With tariffs below operating and maintenance costs,
there are no internal funds available to finance rehabilitation and expansion. Over time, franchising can be expected to provide sufficient funding for routine rehabilitation and expansion of small town water supply systems, but this will not happen immediately. As noted in the previous paragraph, unless customers see improvements in service that correspond with tariff increases, franchising is likely to fail. To improve service immediately, initial funding will be needed to finance rehabilitation and expansion. This will probably need to come from the government or from donors, but provision can be made for repayment of some portion over time.

**Capital Cost:** Introductory offer to initially develop or rehabilitate and expand the system

**Debt Service:** Debt service would be paid by the PGA from the lease fee or from revenues remaining after payment of management fee to the franchisor/operator.

**Future Expansion:** Further expansion and development of the system would be paid by the PGA from accumulated lease fees or, if a management contract is in place, from revenues passed through by the franchisee/operator. One way of providing for expansion of the network would be to set tariffs to include a surcharge to partially subsidize the cost of new connections and related extension of secondary and tertiary mains. The designated portion of tariffs collected would be deposited into a separate reserve fund for this purpose.

Ideally, expansion of the system beyond the “introductory offer” could be financed from revenues. A portion of the tariff might be earmarked for ongoing capital expenditures or for payment of debt service. The PGA should be able to obtain financing for further expansion if it can show a reliable stream of revenues sufficient to support debt. However, if the decision is made to keep tariffs below a level that would cover operating and maintenance expenses plus capital costs, obtaining financing from the market for further expansion or development of the system will be a problem and support will have to come from either the government or donors. Franchising does not change the economics of this dilemma, but can introduce greater transparency and accountability into the system and can provide incentives for achieving efficiency and better maintaining assets so that customers can get the most from the tariffs they pay.

**Commercial viability of Franchising**

The financial implications for all stakeholders – customers, the operator/franchisee, the franchisor, the public granting authority/owner, the regulator and funding agencies, must be evaluated – to ensure that this is a good business proposition for all stakeholders. Overall, franchising can be commercially viable if the following conditions exist: (1) the franchisee/operator must be sufficiently motivated to achieve efficiencies and reduce operating costs without compromising service, (2) the franchisor must be able to provide professional support at an affordable price, which will likely depend on the ability to spread costs over a number of franchisees, and (3) tariffs must be set to cover costs and must be affordable. Note that if tariffs are not high enough to cover costs when franchising is implemented an increase will likely be required or franchising will not be commercially viable.
Tariff increases will be more politically acceptable if they are accompanied by a marked improvement in service. However, if tariffs increase beyond what is affordable to customers, the franchisee/operator will have trouble collecting revenues and this will affect the commercial viability of the arrangement. Tariffs under a franchising arrangement must be sufficient to cover the franchise fee, the management or lease fee and the regulatory fee, in addition to operating and maintenance costs. Franchising will be beneficial to customers only if the required return to the franchisor and the franchisee/operator is offset by operating efficiencies or improvements in service sufficient to justify any increase.

A financial model has been used to analyze whether franchising can be financially viable. The results are shown in Annex A.

**Regulatory regime**

A regulatory regime will be needed to deal with contract compliance and performance monitoring as well as tariff regulation. Establishment of an independent regulatory body for this purpose would be ideal, but a determination will be needed of when such a regime would be feasible in the short term, taking into consideration the associated expense. Sample contracts can include model provisions and reporting formats for performance monitoring as well as formulas for routine tariff adjustments, which can be implemented by the contracting parties in the absence of an independent regulator. It is likely that tariffs would be set out in the contract for the duration of the lease or management contract (possibly five years), with some kind of automatic indexing for inflation, currency fluctuation, or increases in power costs.

It would possible to put the franchise out for bid, say, every five years. This could be done also at the franchisor level, although in this case a ten-year contract would be more appropriate in the light of the investment that the Franchisor will have made in the country.

Particularly with reference to the above, any system developed must take account of consumer wishes and needs. A consultative system should be incorporated especially on such issues as levels of service, extension of system, investment and tariffs. The objective would be to operate a “transparent” system that showed clearly the source and application of funds.
DESIGN OF A PILOT PROJECT

Franchising in small town water supply is a new and untested idea. There are no franchisors and franchisees currently operating in the sector in developing countries and no direct examples to follow from more developed countries. Questions naturally arise as to whether there will be an interest on the part of the private sector to engage in franchising, whether local entrepreneurs will be ready and willing to enter into agreements with franchisors, whether the institutional framework can be worked out so that service is provided at a reasonable price. A pilot project could be developed as a means of testing franchising as described in this section.

Steps to carrying out a market survey and establishing a pilot operation:

- Two target areas/towns should be identified which are reasonably representative of the genus; have a clear need; about which quite a lot is already known and which would be accessible for a detailed study of the market conditions of demand and cost/price factors. This should be a short (occupying not more than one month in each location), intensive study by a consultant. There is no reason why, in targeting a territory within which to pilot a town water supply franchise, one should choose a difficult region. A commercial franchisor would not do this, but would initially go for the “softest” target to give the best chance of success and maximum penetration and development. Thereafter, based on experience, the system would be refined and adapted to improve it and then launched in more difficult targets. This is the recommended approach for the project.

- The results of the study would be used as the basis for constructing a generic pilot operation. This phase would consist of a joint desk exercise carried out by WB and Sibley consultants to design the pilot. The objective would be to provide a common core of features, with the recognition that tailoring would take place for each of the actual pilots. This phase would be expected to occupy six weeks.

- Concurrently with the above, an enterprise or individual to operate the pilot units would be identified. At this stage of viability investigation it is not felt necessary or appropriate to seek a franchisor, although it is conceivable that the entities that operate the pilot units could be candidates for this role.

- There would follow a field trials period where the package would be installed and tested in the two field sites. This would largely be carried out by Sibley consultant(s) and would be expected to take three months.

- Thereafter, a further six months would be allowed for continued testing by the operators and refinement by the consultant(s). During this time the issues of costs and pricing, regulation, quality standards, supplies of equipment and materials would be investigated. The results would be used to determine the viability of the individual units; the areas where improvements in financial performance could be achieved; the relationship with consumers best handled, the cost and benefits to be achieved from expansion of distribution and to decide on the final shape of the unit to be franchised.
Note: The estimated time for this development and trial period is approximately one year, which is consistent with the time taken by a commercial franchisor to perfect the franchise package before launch.

**Subsequent steps to introduce town water supply franchising in a target area**

- If, at the end of this trial period, there is a clear indication that one or both of the pilot units is/are successful, which would be determined in the context of consumer (defined as regulator, town committee and consumers themselves) satisfaction and there being a viable business proposition, then the project would move to the next phase. This would consist of targeting a specific territory, or territories for a full-scale launch of the franchise package developed in these units. The steps for this would be:
  - Identify the territory for the launch of the franchise (this may or may not be one in which a pilot unit has operated, but clearly there would be advantages were this is so – and the initial selection of these units should take this into account as suggested above. The comments above on the choice of pilot unit being one where good conditions pertain is equally valid here. The chosen territory should therefore be one that is well known and understood by the World Bank experts in this field; is relatively stable economically and politically; where there is a clear need; a sufficiently large number of small towns with that need and where the government and dependent regulatory authorities are known to be well disposed to private operation of water supply.
  - Identify a suitable franchisor, as outlined in item 1 above. The criteria for selection should be:
    - An entity or individual with internal resources, particularly finance and human resources, ready and able to commit to a long term development in the territory
    - An entity already legally established and operating in the territory, either indigenous or foreign with many years of experience/presence in the territory
    - The franchisor need not necessarily be operating in this sector, although this would be ideal. If not then there must be a commitment to acquire the necessary technical expertise and to hire specialist staff so that the technological support is guaranteed to the franchise system
  - Train the franchisor and staff in the role and operation of a franchise business.
  - Establish franchisor relationship with regulator and agree outline development plan. Target suitable towns for development and review current supply systems, budgeting for rehabilitation or development of facilities. Agree programme for investment with donor and implement.
  - Open and operate a pilot unit (if the franchisor is in a territory in which a pilot unit does not yet exist). In either case, the franchisor and the new team should operate for a period of three months to prove their understanding of the system and of franchising.
  - Recruit franchisees for the facilities that have been chosen under (d.) above. These may be already associated with the water supply system or be completely new to it. However, they
would all be trained in the same way in the pilot unit, to operate the facilities in the prescribed way.

- Launch/open franchised water supply facilities.

**Financing Startup**

The set up of the franchisor could be internally funded i.e. by the entity itself through its own funds (as in the case of the international company) or by third party funded (as would probably be necessary if a local provider or entrepreneur were to wish to become a franchisor. In either case, third party funding for a pilot project and the development of the franchise package would certainly accelerate and facilitate this process and provide for the introduction of certain quality and humanitarian issues that would not necessarily be included in an entirely independently funded venture. In any case, it seems unlikely that a franchisee system will be developed without an initiative from the financing agency.

In certain cases the franchisee would have access to sufficient funds to meet start-up costs. Where this is not the case, a secondary lending source would have to be found or developed. It is possible that the franchisor could establish a lending/credit source with a local bank, with third-party guarantees provided by a donor such as IFC or EBRD.

**Scaling up**

The pilot project would be useful in identifying the potential for franchising and in identifying what is needed in order to scale up. Once franchising has been piloted it is reasonable to assume that potential franchisors and franchisees, including international firms, local and regional firms and local entrepreneurs, will be interested in entering the market in this way. Establishment of market conditions which would make franchising attractive to both buyers and providers of services should be addressed during the pilot and recommendations should be made for scaling up. These will likely include:

- **Establishment of clear legal framework for contracting between franchisors and franchisees and between the owner of assets and the franchisee.** Relevant legislation will need to be reviewed and changes to existing legislation or the adoption of enabling legislation may be required. Sample contracts should be developed and disseminated and technical assistance provided for initial transactions.

- **Identification and removal of barriers to entering the market.** Potential franchisors and franchisees can help to identify barriers to entry, which may include legal obstacles to establishing a business, difficulties or delays in obtaining licenses, high initial start up costs, lack of information about potential partners, taxation or rent seeking on the part of administrators or government officials.

- **Establishment of mechanisms for identifying willing and competent partners.** A registration system or information clearing house may be set up so that interested franchisors and franchisees can be easily find each other.
Annex __

Financial Viability of Franchising for Small Town Water Supply in Developing Countries

Introduction

The financial viability of franchising for small town water supply in developing countries must be determined by the individual entrepreneurs and firms that would consider becoming franchisees and franchisors, considering required capital contribution, their targeted return on investment and opportunities for achieving economies of scale, improving operating efficiency, billing and collections or expanding the revenue base in a particular situation.

This annex presents the financial condition and projected operating results for a typical small town in eastern and southern Africa with population of approximately 10,000. A Small Town Planning Model has been used to project financial performance based on data about existing town water supply system and assumptions as to its growth and development. The model is used to consider whether franchising might be financially feasible for towns with existing water supply systems that are in need of rehabilitation and expansion.

Findings

In this case (described in detail below) the small town utility can yield positive cash flows after payment of operating expenses, franchise fees and transfer of funds to the government for expansion of the network and to cover debt service. Whether the cash flows are sufficient to attract entrepreneurs as franchisees is a determination that can be made only by the entrepreneurs themselves. Likewise, potential franchisors will have to determine if the projected franchise fees will be sufficiently attractive.

The following table summarizes projected financial results for the first ten years of operations under a franchise agreement (assumes lease contract):

<table>
<thead>
<tr>
<th></th>
<th>Years 1-5</th>
<th>Years 6-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population served</td>
<td>8,220</td>
<td>10,427</td>
</tr>
<tr>
<td>Water produced m³</td>
<td>163,000 average</td>
<td>230,000 average</td>
</tr>
<tr>
<td>Water sold m³</td>
<td>125,000 average</td>
<td>182,000 average</td>
</tr>
<tr>
<td>Tariff US$</td>
<td>.50 per m³</td>
<td>.70 per m³</td>
</tr>
<tr>
<td>Revenues collected US$</td>
<td>319,000 5 yr total</td>
<td>643,000 5 yr total</td>
</tr>
<tr>
<td>Operating expenses paid US$</td>
<td>105,000 &quot;</td>
<td>140,000 &quot;</td>
</tr>
<tr>
<td>Franchisee fee paid US$</td>
<td>53,000 &quot;</td>
<td>97,000 &quot;</td>
</tr>
<tr>
<td>Lease fee/ owners tariff (pass through)</td>
<td>133,000 &quot;</td>
<td>284,000 &quot;</td>
</tr>
<tr>
<td>Fund for new connections and network extensions (pass through)</td>
<td>10,000 &quot;</td>
<td>43,000 &quot;</td>
</tr>
<tr>
<td>Regulatory fee (pass through) US$</td>
<td>6,000 &quot;</td>
<td>13,000 &quot;</td>
</tr>
<tr>
<td>Net cash to franchisee/operator US$</td>
<td>19,000 &quot;</td>
<td>38,000 &quot;</td>
</tr>
</tbody>
</table>
Background and assumptions

The base data for the model is from a small town with a population of close to 10,000, which has an existing piped water supply system in need of rehabilitation and expansion. Engineering consultants have prepared designs for expanding and rehabilitating the system and have gathered data about population, customers, service coverage, system capacity, consumption.

Production and consumption

The water supply system is serving approximately 75% of the population through standpipes and house connections. The assumption is that those not getting water from standpipes or from their neighbors are using other sources (e.g., surface water)

Domestic consumption accounts for approximately 50% of water sold.

- An estimated 33% of the population is served through standpipes (assuming each standpipe serves 330 people and demand is 20 l/c/d)
- An estimated 45% of the population is served through individual house connections (assuming each household connection serves 25 people and demand is 25 l/c/d)

The balance of consumption is by government institutions and commercial/industrial customers.

Production capacity is 400 m3/day, which is insufficient to meet current demand.

Service improvements

The capital investment plan calls for doubling production capacity and expanding the network. The investment cost per capita before this investment was $20; after the investment it will be over $50 per capita.

Service coverage is projected to increase, with more of the population served by individual household connections.

Household connections

- Household connections are projected to triple over the 10 year period, starting in the year after production and network are expanded
- The connection fee is reduced from the current level of $75 to $35
- Population served by individual household connections would go up from 45% to 60%
- The number of people served by each household connection would decrease from 25 to 15
- Unit consumption would increase from 25 to 42 l/c/d.

Standpipe connections

- No new standpipes are to be added
- The population served by standpipes decreases from 33% to under 20%
- The number of people served by each standpipe decreases from 330 to 275
- Unit consumption remains at 20 l/c/d
Other customers
- Institutional water consumption does not change
- Commercial and industrial usage increases with population growth

Operations
Efficiency:
- Unaccounted for water is currently 32%; reduced to 25% over 10 years
- Staff count remains unchanged, which means that productivity improves (from 40 staff per 1000 connections to 16)
- Power cost per m3 is assumed to increase by 10% per year in the first three years and then no real increase is projected
- Chemical cost per m3 is not projected to increase or decrease
- Repairs and maintenance increase with the value of assets employed
- Other O&M costs increase with connections
- General & administrative costs are assumed to be fixed

Collection of revenues
- Domestic customers currently take an average of 4 months to pay; this is projected to decrease to 2 months over ten years
- Institutions currently take an average of 6 months to pay; this is projected to decrease to 4.5 months over ten years
- Commercial and industrial customers currently take an average of 3 months to pay; this is projected to decrease to 2 months over ten years
- Bad debt write-offs amount to 10% of revenues each year; this is projected to decrease to 5% over ten years

Financing of investments
- Major investments identified by the engineering consultants are to be co-financed: 40% will be a grant from the government and 60% will be repayable over 20 years after a 5 year grace period at an interest rate of 2% over the inflation rate. Interest is to be capitalized during the grace period.

- After the initial rehabilitation and expansion of the system, network expansions and upgrade of assets will be made on an as-needed basis and funded from revenues. A special reserve account will be established for new connections and network extensions subsidized through the tariff.

Tariffs
- Current tariffs are $0.175/m3 for standpipes and $0.35/m3 for all other customers; this ratio is maintained throughout the projection period.
- LRMC is calculated to be $0.53/m3.
- Tariffs to all other customers include the following components: O&M, lease payment to owner of assets (to cover renewal of existing assets and debt service), network expansion, franchise fee (20% of revenues), regulatory fee (2% of revenues).
- The average tariff over 10 years is $0.60