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Community Public Sector Partnership for the Provision of Water Services in Savelugu, Ghana

**Paper Prepared for the Civil Society Consultation on the
2003 Commonwealth Finance Ministers Meeting**

**Bandar Seri Begawan, Brunei Darussalam
22 – 24 July 2003**

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The published version of this report will be available in 2004 and may be subject to final editing.

ABSTRACT

This report seeks to examine the potential of the Savelugu Water system as a Public-Community partnership model for addressing some of the most difficult problems facing public sector delivery of essential services such as water. The report examines how the public sector and communities can work together in partnership to improve efficiency and effectiveness of utilities in the delivery of essential services. The nature of the partnership that exists between the Savelugu community and the Ghana Water Company Ltd has been examined. An assessment of the performance of the two parties in the partnership during the past three years, as well as major achievements, challenges and constraints has also been made. Between 1999 and 2002, the Ghana Water Company Ltd registered a 100 per cent tariff recovery rate for water supplied to Savelugu under a bulk purchase agreement, as compared to an average recovery rate of 60 per cent from other areas serviced directly by the company. Equitable access by community members to safe water supplied by the Ghana Water Company Ltd is guaranteed by community management structures and transparent decision-making processes with popular participation. The community made rules to protect its vulnerable members. The partnership has resulted in improved access to safe water by all community members, as reflected in the drastic reduction in the number of Guinea worm cases in the community, from over 667 in 1999 to about 23 in 2002. The study concludes that establishing formal partnership agreements between communities and public utilities for the delivery of water makes it possible for both to optimise benefits through complementarity of roles. The community is given a greater role in the management process, and is able to negotiate with the utility for water supply on behalf of its members. The utility saves the costs of personnel to bill and collect tariffs from the community and attains a relatively higher economic return per unit of water supplied to domestic consumers, as compared to areas it services directly. In addition, non-revenue water reduces to a minimum (near zero), as the community is able to pay for all water supplied.

The biggest challenges facing the partnership are the inability of the Ghana Water Company Ltd to meet the total daily water requirement of the community, as well as the government's drive towards full cost recovery in the water sector, greatly influenced by the IMF and the World Bank. This study was initiated by the Commonwealth Foundation and executed jointly with Community Partnerships for Health and Development (CPHD), an NGO based in the Northern region of Ghana. Special acknowledgement goes to the Integrated Social Development Centre (ISODEC) for facilitating this work.

1. Introduction and Background to the Study

The percentage of Ghana's population with access to potable water is officially quoted as 60-70 per cent in urban areas and only 35-40 per cent in rural areas¹. A study in 2001 found that only 40 per cent of the urban population had access to piped water supplied by the Ghana Water Company Ltd. (GWCL), the national agency that manages the urban water supply nation-wide. The percentage with access to improved sanitation facilities is approximately 40 per cent in urban areas and 35 per cent in rural areas². Households without access to piped water rely on a variety of less reliable and hygienic sources, including mobile vendors (such as water tankers) and fixed vendors of GWCL water, shallow wells and deep wells, boreholes, springs, and/or commercially bottled or bagged water. A study of one urban area, Kumasi, found that 15-30 per cent of the population relied on hand-dug wells³.

During the last two decades, rapid urban population increase and expansion in the urban areas without commensurate expansion in urban water supply infrastructure have contributed to a decrease in the percentage of urban households supplied by piped water. The GWCL is constrained by a lack of financial resources to expand its water supply systems, many of which have existed for half a century. A growing population and reductions in the government subsidy for water services have further contributed to a deepening of the "crisis" in the water delivery services. High levels of non-revenue water, about 54 per cent, and inadequate billing and collection systems compound the problems.

Institutional and legal reforms prescribed by the World Bank played a key role in the design of a new framework for Private Sector Participation in the water sector. This has included the unbundling of rural and urban water, resulting in the conversion of the Ghana Water and Sewerage Corporation into a limited liability company responsible for urban water supply, the development of the Community Water and Sanitation Agency to administer the rural systems, and the creation of the Public Utility Regulatory Commission and the Water Sector Restructuring Secretariat to facilitate the privatisation process. There is a long succession of IMF and World Bank loans to the Government of Ghana that contain conditions requiring increased cost recovery, automatic tariff adjustment mechanisms, and increased private sector participation in the water sector.

Though the wider range of non-governmental initiatives, including local community-based entrepreneurship, has often been ignored because of a preoccupation with large-scale corporate interventions, Public-Community Partnerships (PCPs) do indeed offer a viable approach to water delivery in developing countries⁴. Typical PSP proposals advocated by the World Bank often have a tendency to marginalise local talent and capacity, and possibly result in a reduction of the future engineering, managerial, and technical capacity of the local workforce to manage water service delivery. According to an International Fact Finding Mission report on Water Sector

¹ Water Restructuring Secretariat, Ministry of Works and Housing Accra.

² UNICEF – World Water Day Ghana Case at <http://www.unicef.org> on May 1, 2002

³ The Integrated Social Development Centre (ISODEC). Protecting the rights of the poor in urban water reforms: a social mapping exercise in support of the Kumasi water improvement project. Box 19452, Accra-North, Ghana. Isodec@ghana.com

⁴ Water Actions, World Water Council, March 2003.

Reforms in Ghana (August 2002)⁵, building and strengthening local Ghanaian capacity for effective water service delivery should be a critical part of any water sector reform proposal. The World Health Organization recommends that the key to sustainable water delivery is institutional support from communities⁶. Local communities take over the tasks they consider best suited for them, such as checking water losses through community vigilance and social control, thereby helping to increase the revenue of water utilities. PCPs in general have the unique advantage of using communities to balance the roles between public and private players, whilst reducing the role of the state to providing social protection. This is achieved by reducing the ability of private business to exploit consumers and by complementing the weaknesses of the public sector to enable it to deliver the service efficiently and at affordable and equitable costs.

The ‘Savelugu model’ is one such partnership that has successfully harnessed the strengths of a public utility and a community to the fullest to improve the efficiency of water supply to community members whilst creating several benefits for a public water utility, the Ghana Water Company Ltd (GWCL). This partnership was forged in the year 1999, involving the GWCL and the Savelugu community, a town in the Northern region of Ghana with a population of about 25,000 people. The model is a community-driven approach that seeks to define roles for both the GWCL as a para-statal organisation and the community according to their relative strengths on a “best-suited to do” basis. Under an agreement, the GWCL supplies water in bulk to Savelugu, who has responsibility for retailing to community members and recovering tariffs to pay the GWCL for the full cost. Because the community plays such a large role in the management, it is able to make rules to protect its vulnerable members.

The community engaged in the partnership with the primary objective of improving public health through increased and equitable access to potable water, as well as check small business entrepreneurs who for nearly two decades had controlled and influenced water services in the community to the utmost exclusion of the majority of community members from access to potable water. The GWCL on the other hand was motivated by the promising potential of the arrangement to reduce the rate of unaccounted for water and to increase revenue through efficient distribution, billing and tariff collection. Notwithstanding some challenges, the partnership has grown strong, and both parties appear to be satisfied with the outcomes. An initiative that was primarily targeted at curbing a public health problem has turned into one that goes beyond just a local community, and is attracting wide attention as a viable approach to community participation in urban water supply.

This case study seeks to assess the viability of the Savelugu model, and for that matter of Public-Community Partnerships, in addressing some of the most difficult problems confronting the provision of essential services by the public sector today. The case study will:

- Describe the nature of the partnership that exists between the Savelugu community and the GWCL, as well as the roles and expectations of each party.

⁵ Report of the International Fact Finding Mission on Ghana’s Water Sector Reforms.

⁶ World Health Organization. Water and Sanitation. Fact Sheet No. 112, November 1996. www.who.int/inffs/en/fact112.html, Downloaded 6/5/02

- Examine the actual and potential contribution of such a partnership to the improvement of service delivery in terms of efficiency, effectiveness, equity and financial sustainability.
- Identify the challenges and constraints confronting this partnership, and implications of scaling up.

Methods

A combination of different methods was adopted for the study, including

- Interviews with management of the Savelugu Water system and the GWCL
- Discussions with community members of Savelugu
- Review of financial records of the Savelugu Water system for the period January 2000 – April 2003
- Review of previous research work about the Savelugu Water system
- Discussions with other stakeholders including the Community Water and Sanitation Agency and the District Assembly.

2. Nature of the Reform

2.1 Background

Savelugu is a town in the Northern region of Ghana with a population of about 25,000 people. It lies at the periphery of the Northern regional capital, Tamale, and is itself the District Capital of the Savelugu-Nanton District. The town comprises mostly the Dagomba ethnic group, mainly farmers and traders. Savelugu forms part of the Tamale municipal water supply system operated and managed by the GWCL, which currently serves about 300,000 people. In the 1970's, Savelugu had enjoyed pipe water supply from the Tamale system, until the early 1980's when treated pipe water supply to the town was discontinued due to a number of factors. Between 1985 and 1999, the main sources of drinking water for Savelugu were dug-outs. Year after year, residents were plagued by the Guinea worm disease, a debilitating parasitic infection that incapacitates victims up to four months and more. Due to the largely urban characteristics of the town, efforts by the Guinea Worm Eradication Programme to control the disease between 1993 and 1998 yielded very little results. Several past efforts by the community to get potable water reinstated to the town met with no success. Small but powerful interest groups that exploited the situation and made big business out of tanker services to the community curtailed every community effort to restore the flow of pipe water. The cost of water was much higher than most people could afford. A baseline survey in 1998 revealed that only 9 per cent of the town's population could afford and had access to potable water. The low level of revenue recovery associated with water supplied to peri-urban areas of the Tamale Water Supply System (as is the case for most other systems in Ghana) also contributed to a high level of reluctance of the GWCL over the years to make the necessary effort and investment to reinstate pipe water supply to the community.

In 1999, a special partnership initiative between the community and the GWCL in Tamale, facilitated by different stakeholders, brought the desired relief to the residents of Savelugu by providing a community-managed water supply system. The community, the Local Government Authority, UNICEF, World Vision International (WVI) and the Guinea Worm Eradication Programme (GWEP) all contributed, either in cash or in kind, but UNICEF financed up to 70 per cent of the total project cost. The GWCL donated a 20,000-gallon capacity overhead GRP (Glass Reinforced Plastics) tank to the community. The District Assembly and the community contributed 10 per cent of the project cost in cash and kind.

The Partnership

The Savelugu Water Supply System is based on a partnership agreement forged between the community and the GWCL in 1999. The partnership involves the supply of bulk potable water to the Savelugu Water Board who has the responsibility of retailing the water to members of the Savelugu community, and of paying the full cost of water supplied to the GWCL. Clear roles for both parties, i.e. the community and the GWCL, were defined, and the terms of the partnership were negotiated. The community undertakes to handle the distribution of water and collection of bills from its members (the households in this case) and pays the GWCL, whilst the GWCL just delivers the water to the community. The price is also negotiated between the Water Board and the GWCL, taking into account commercial and domestic uses. Savelugu may sometimes be granted a reasonable discount of the total sum to pay to the GWCL. Savelugu is one of the main partners of the GWCL in terms of bulk water sales.

Terms of Contract between the GWCL and Savelugu

1. The GWCL provides treated water on a bulk purchase agreement to Savelugu for redistribution to the population of about 25,000 inhabitants. The GWCL also provides consultancy services and on-site technical advice from time to time on matters related to the distribution of water.
2. The GWCL is obliged to provide water daily, and Savelugu redistributes the water and pays the full cost at the end of each month based on the amount of water supplied.
3. The GWCL may carry out major repair works on the transmission main within the Savelugu system, and Savelugu provides labour and financial obligation in respect of the work done. All other payments to the GWCL for other services rendered are effected as and when the service is rendered.
4. Savelugu plans and provides data and information for expansion⁷, whilst the GWCL provides consultancy services and technical support for job execution.

Partnership meetings to review any modification in the agreement occur every six months. Savelugu endeavours to pay regularly for water consumed whilst the GWCL sustains water supply in good pressure and flow, and of acceptable quality according to WHO standards. Where any party is unable to fulfil its part of the obligation, that party must explain the circumstances leading to the failure and recommend measures to address them.

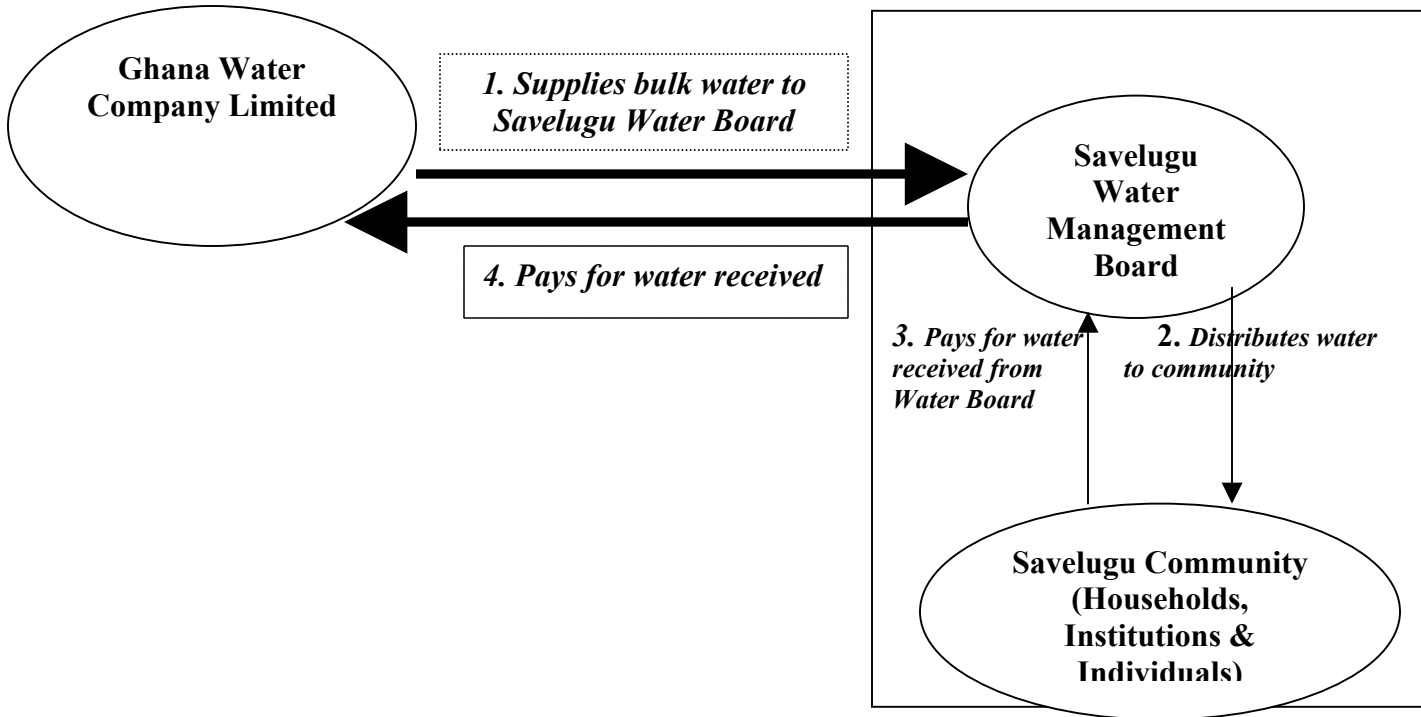
Apart from water sales to Savelugu, the GWCL also provides other services to the community, including:

1. Installation of water meters and servicing of the meters
2. Repair of major pipe bursts leading to the system to avoid the interruption of the water supply to Savelugu⁸
3. Maintenance of electro-mechanical equipment when the need arises
4. Technical advice on running the system effectively and efficiently.

⁷ More public stand posts (public fountains) and household connections, but for now, the quantity of water supplied by the GWCL is a serious limitation to household connections.

⁸ This is not a cost to the community, but rather to the GWCL itself. Due to the general laxity of public utility workers towards pipe bursts and leakages, the community felt this was a very important issue to include in the contract. It is intended to forestall a situation where water supply to the community would be disrupted due to poor response of the GWCL staff to leakages in the main line leading to the community, but which falls outside the jurisdiction of the community network.

Diagram 1. Partnership Arrangement between the Ghana Water Company Limited and the Savelugu Community



2.2 The reform process

The Trigger and Initiation of the Reform

In 1997, Savelugu town reported the highest incidence of the Guinea worm disease of all communities in Ghana, totalling over 400 cases, with nearly the same number of cases as a year before. Women and children constituted the majority of victims. The degree of devastation associated with the outbreak of the disease more or less triggered the community's action. Community members became more committed to busting the business groups that controlled tanker services, and to curtailing the Guinea worm problem that had persisted in the community for years. Other interest groups who shared this objective and actively supported the community initiative included:

1. The Ghana Guinea Worm Eradication Programme and the Global 2000 Inc. of the Carter Centre that is currently leading the global campaign to eradicate the Guinea worm disease
2. UNICEF whose primary interest was to help the community eradicate the Guinea worm disease due to its devastating effects on women and children
3. World Vision International whose interest was to accelerate development in deprived areas through multiple interventions, including the improvement of public health

4. The District Assembly that was confronted with the big and most volatile political challenge of providing water for the community.

The Guinea Worm Eradication Programme played a significant role in mobilising and coordinating the other partners to support the community initiative. UNICEF provided financial support to the tune of about \$450,000 (US), representing over 70 per cent of the total project costs. These funds were used to procure pipelines, construction works for the replacement of the mainline connecting the community to the GWCL mains (4 km in length), the construction of public fountains or stand posts, and to erect a 20,000 gallon capacity overhead tank provided by the GWCL. A public fountain comprises a cluster of 10-16 pipe outlets built on a concrete platform, from each of which water is fetched. A total of 16 public fountains were constructed, evenly distributed over the community. A private management-consulting firm⁹ was also contracted to develop institutional capacity within the community to manage the system. As the GWCL was unlikely to be capable of meeting the total water requirements of the community, World Vision International financed hydro-geological studies and the construction of 6 boreholes within the town. One borehole, located about 5 km from the town, has been mechanised to augment supply from the GWCL, and three others, between 5 and 6 km away, have been capped pending mechanisation in the near future, due to current inadequate funding.

Influence and Role of Stakeholders

The case of the Savelugu Water Supply System is an outcome of combined efforts by different stakeholders who all shared a common concern about the incidence of Guinea worm in the community. It involved long and difficult processes of consultation, lobbying, investigation and planning. Besides financial support, stakeholders were instrumental in helping the community access the services of consultants to carry out technical assessments, coordinating meetings and negotiations between the community and the GWCL and developing institutional capacity within the community to manage the system. Negotiating with the GWCL on a request by the community to be given a major role in the control and management of the water supply within the town proved to be one of the most daunting tasks during the entire process, for which the stakeholders played a crucial role. Once the two parties settled on an amicable arrangement, the key stakeholder, UNICEF, continued to facilitate the execution of the project.

Technical Factors

A wide range of factors including financial and technical concerns for long-term sustainability, as well as the technical capacity to manage often govern decisions on a particular water supply and management option for a community. From the initial technical feasibility study conducted in October-November 1998 to determine the most cost-effective and viable water supply option for Savelugu, the current arrangement where the community's water supply is based on bulk purchasing from the Tamale Water Supply System was ranked second out of three water supply options considered by the consultants¹⁰. The community had from the start expressed three major concerns about this option, including

⁹ Gariba Development Associates

¹⁰ Afrowood Ltd, a private consulting firm based in Accra, Ghana.

- The low capacity of the Tamale water system that could not even meet the water needs of the Tamale municipality
- Unreliable delivery of service from Tamale in the past
- Fears about the fate of such an arrangement in the event of a private takeover of the Tamale system¹¹.

The preferred option, according to the feasibility report and also for the community, was to extract underground water through mechanisation, like in the projects managed by other small towns in the region (e.g. Walawale, Bimbilla, Gambaga etc.), supported by the Canadian International Development Agency (CIDA) and the World Bank.

Notwithstanding this, the consultant recognised that the Bulk Supply from the GWCL option could be the cheapest, most easily accessible and easiest to operate since a large fraction of the operation and maintenance costs would be borne by the GWCL¹². In the opinion of the consultant, this option would appear to be the most realistic, especially in the event of unfavourable borehole yields for the underground water option.

Based on the recommendation of all the stakeholders involved in the project to adopt the first-ranking recommendation, i.e., exploitation of underground water through mechanisation, World Vision International with funding from the Hilton Foundation conducted hydro-geological investigations, employing very sophisticated techniques including remote sensing and satellite imaging to assess the underground water potential for drilling and mechanisation. After one month of prospecting within a radius of 6 km around the centre of Savelugu, drilling began in February 1999. There were about 48 drilling attempts and 16 were successful, of which four had yields adequate for mechanisation. Unfortunately, all these were 4-5 km from the town centre, with high financial cost implications for mechanisation. Only one well has been mechanised so far and supplements supply from the GWCL. The rest would require additional funding. This outcome was unfavourable to the project, which had hoped to get high yielding underground wells within a reasonable distance from the town to make mechanisation feasible in the light of the limited funding available. As a result of this unfavourable outcome, the second option, the bulk supply from the GWCL, was revisited and implemented as a relief phase, pending the availability of funding in the future to mechanise the remaining boreholes.

2.3 Governance

Institutional and Management Structure

The community has been zoned into six areas, and each has a Water and Sanitation Committee, comprising equal numbers of men and women. The Water and Sanitation Committee has an overseer who ensures order and discipline, and a treasurer who receives money for water fetched from the boreholes. Because these are not metered, commissioned agents will be difficult to monitor. Any community member selected to control sales at a borehole on a given day accounts to the treasurer at the end of the day. A liaison person on the committee reports faults and malfunctions of the water system to the management board. As the GWCL is unable to meet the

¹¹ Discussions about privatisation of water in Ghana were ongoing at the same time that this project was initiated.

¹² Savelugu Water Supply Feasibility Report, 1998; pp. 11 and 13

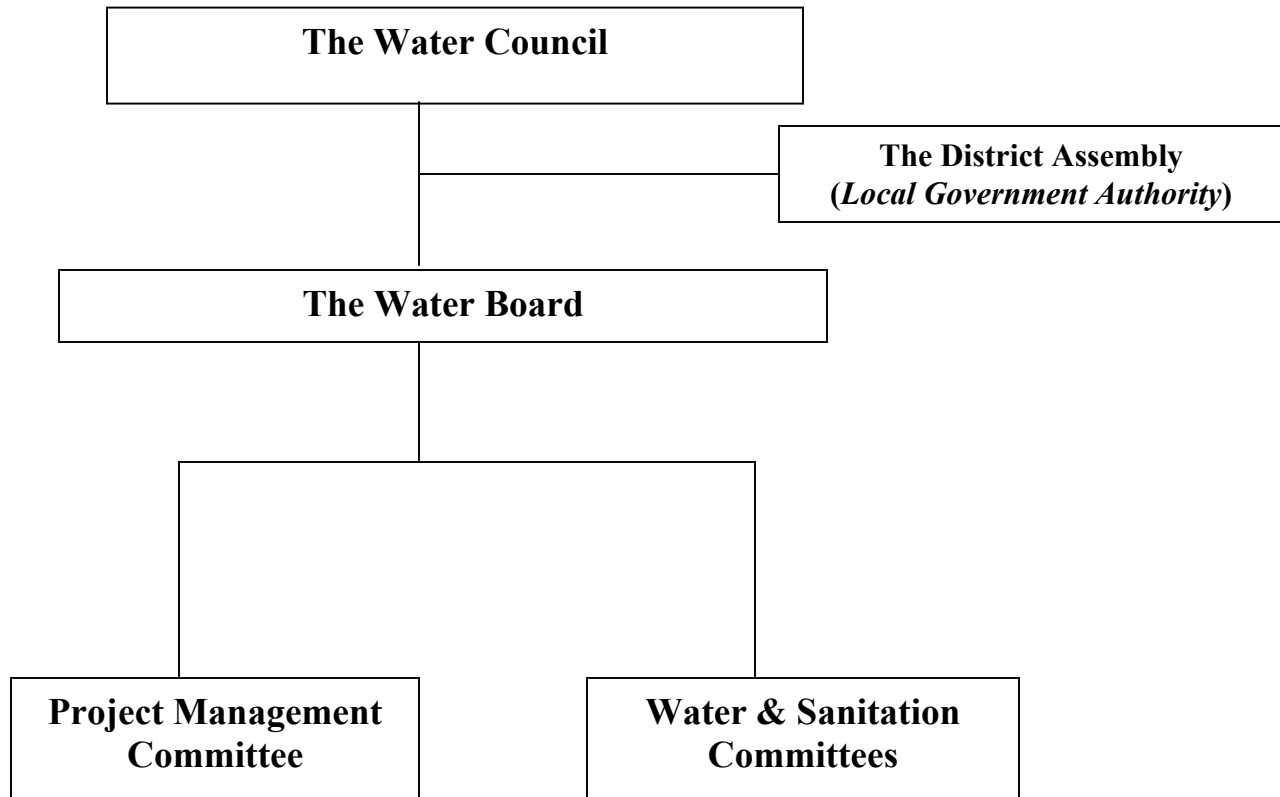
full daily water requirement of the community, a rationing system has been devised to supply water to the different zones of the town in turns. Revenue accrued from water sales are paid into a project account, with joint signatories from the Water Board and the District Assembly. Payments to the GWCL, staff salaries, maintenance and repairs are drawn from this account.

There is a project management committee that is responsible for the day-to-day management of the system. It oversees the technical operations of the system and directly controls the operations of the commissioned agents. Members of this committee are all salaried workers, hired by the Water Board, and comprise a project manager, a pump attendant and a revenue officer. They keep books on the transactions of the project and can liaise directly with the GWCL to discuss operational issues.

There is a Water Board representing all interest groups in the community headed by a Chairman. On this Board are also representatives from the Water and Sanitation Committees from all the six zones, as well as representatives of other interest groups such as traditional authorities, religious leaders, etc. The board oversees the operations of the project management committee, and reports to the Water Council or the General Assembly who represent the larger community and the District Assembly. The works engineer of the District Assembly is also responsible for the technical supervision of the system.

Gariba Development Associates (GDA), a private consulting firm, provided professional services in terms of management training, institutional arrangements, training of the different organs of the community management structure of the system.

Diagram 2: Management Structure of Savelugu Water System



Decision Making

The Project Management Committee is responsible for the day-to-day management of project. It has been empowered to take some decisions on behalf of the community, but these are limited to those related to technical and operational aspects. The Water Board takes major decisions, or approves proposals made by the management committee. The governing board can take any major decision on behalf of the community regarding the project, except the setting and changing of tariffs. It is the sole responsibility of the Water Council to set prices and tariffs. The Water Council is a much broader representative body of the community, and includes the vulnerable people as well.

3. Outcome of the Reform

Financial Sustainability

The project has been self-sustaining for the past four years. All administrative costs, repairs and maintenance as well as running costs have been financed by the project itself during the entire period. Planned expansions have been executed successfully, with the number of public fountains increasing from 16 to 21 during the period. Extensions have also been made to a livestock project site. Currently household connections are limited to the residences of some government sector workers including staff of the ministry of health or the local government. A pilot household connection was started this year to determine appropriate control measures for recovering tariffs.

Staff/Connection ratio

The system currently employs four salaried workers, one contractual plumber and 21 commissioned agents. The salaried workers include a project manager, a revenue officer, a pump attendant and a security man, whilst the commissioned agents supervise sales of water at public fountains on a pay-as-you-fetch basis. Commissioned agents are paid 10 per cent of total sales. Households that are unable to pay immediately are allowed to fetch and pay at a later date. In consideration of the number of households or people involved, the agents can be considered reasonably efficient.

Efficiency

Non-revenue water, including unaccounted for water (UFW) arising from physical losses, illegal connections as well as un-recovered tariffs, is much lower in Savelugu than in the rest of the Tamale water supply system. This will be discussed in the following contexts:

i) Actual UFW: This refers to losses to the system which are borne fully by the community. This stands at 15 per cent. These losses are however factored into the tariff in order to avoid deficits. This compares with 70 per cent losses in comparable communities such as Kumbungu whose households are supplied directly by the GWCL, and about 48 per cent for the Tamale system in totality during 2002. Some of the reasons accounting for losses in Savelugu include occasional pipe bursts, especially in the night when pressure is high, spillage at fetching points and concessions granted to people who fetch with small containers.

ii) GWCL Tariff Recovery Rate: This refers to the proportion of GWCL water supplied to Savelugu for which the full cost has been paid. This stands at 100 per cent for the period January 2000 to April 2003, meaning that the GWCL has fully received payment for all the water that it has supplied to Savelugu during the four-year period. As seen from the graph, this is in sharp contrast to the low mean tariff recovery rate for the entire GWCL system in Tamale and from other communities such as Kumbungu, which is comparable in size to Savelugu in terms of location and characteristics.

Table 1: Tariff Recovery Rate for Water Supplied by GWCL, by Year

COMMUNITY	Tariff Recovery rate by Year (%)			
	2000	2001	2002	2003 (April)
Tamale Whole	90.32	60.7	60.5	58.3
Savelugu	100	100	100	100
Kumbungu	51.3	42.3	39.1	37.2

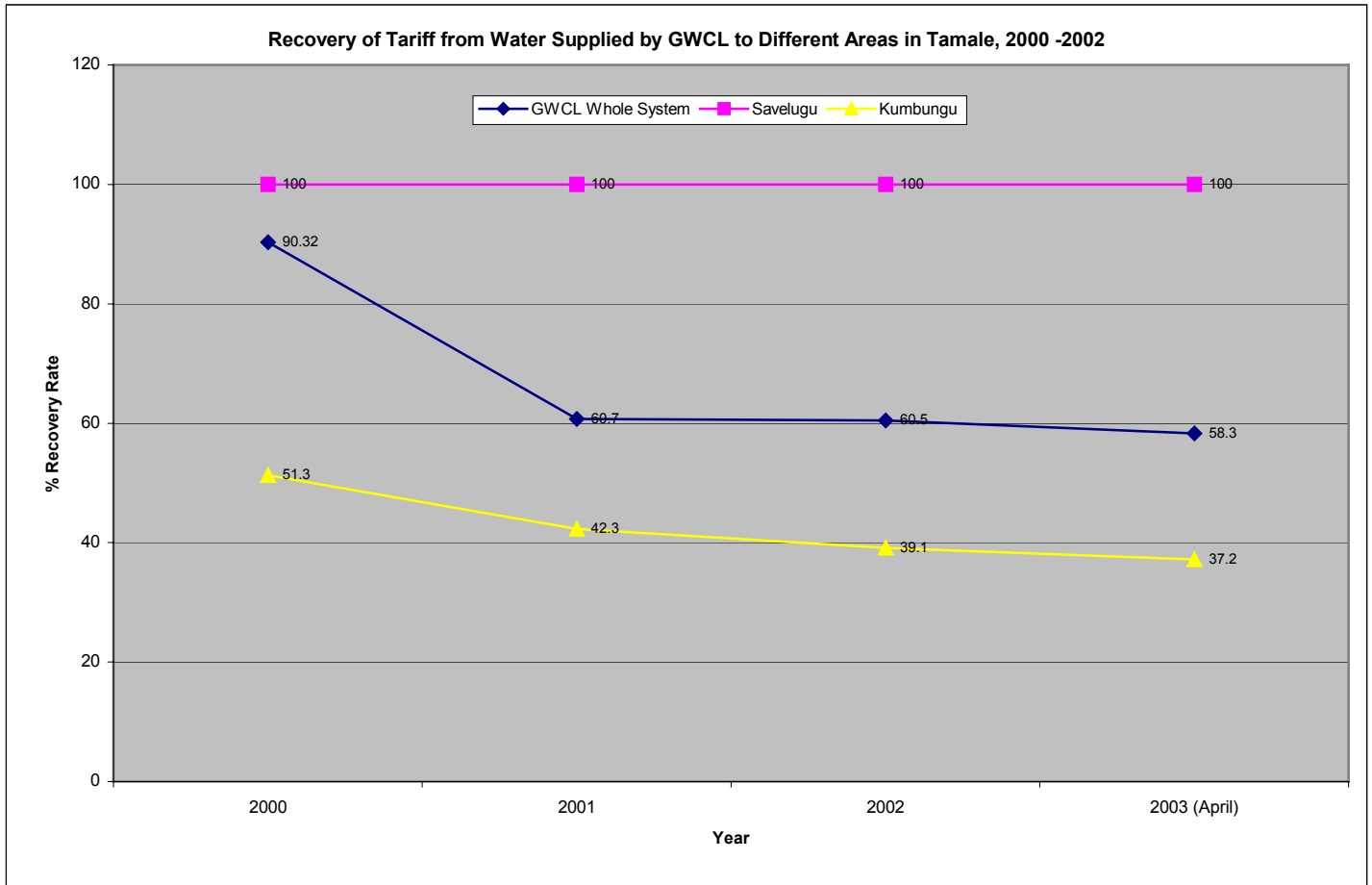


Fig 1. Source: Updated from ISODEC/CPHD survey, 2002.

The apparently high recovery rate (90.32 per cent) recorded by the GWCL for Tamale whole during 2000 is rather a special case. The ruling New Patriotic Party (NPP) government that had taken over power from the long ruling National Democratic Congress (NDC) earlier in that year (January 2000) decided to settle all outstanding bills that government institutions such as the military, police, fire service and other government offices owed to the company covering a period of over 10 years.

Table 2: Water Losses Rate in Different GWCL Supply Areas in Tamale, by Year

Area	Losses by Year			2003 (April)
	2000	2001	2002	
Rural	70	75	77	
Peri-Urban	60	65	69	
Urban	51	49	50	
Savelugu	20	20	15	

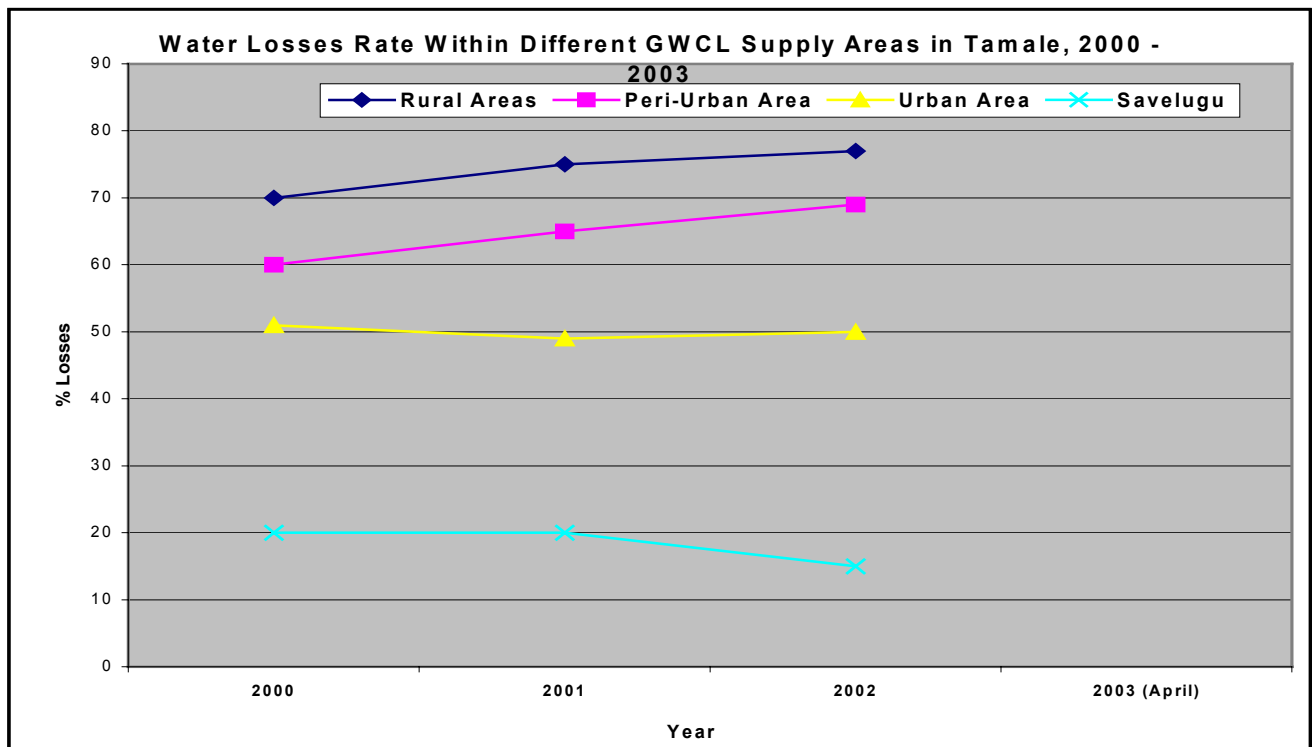


Fig. 2 Source: Updated from ISODEC/CPHD Survey, 2002.

As seen from the figure above, with the exception of Savelugu, loss rates for different areas under the GWCL system in Tamale have been increasing over the years, with the exception of the losses in the urban areas which have remained steady during the three-year period, but which nonetheless are too high (about 50 per cent). Though Savelugu is peri-urban in setting, it has been recording an impressively low loss rate over the period, with an even more reduced rate (15 per cent) during 2002. The community continues to implement controls to minimise losses and improve tariff recovery. Some of these controls include continuous sensitisation of community members to report pipe bursts promptly to the project management committee, promoting water

fetching habits that minimise losses, regular servicing of meters, putting stringent measures into place to check pilfering, and a contractual arrangement with private plumbers to attend promptly to reported cases of pipe bursts.

Price of service

Currently a barrel of water, equivalent to 225 litres, costs in Savelugu a local equivalent of \$0.45 or 45 Cents. In 1998, the same volume of water was costing the local equivalent of \$0.75 or 75 Cents. It is important to caution that an attempt to compare the cost of water in Savelugu before and after the reform is difficult and complicated for several reasons. First, the community depended almost entirely on tanker services for water supply before 1999. The unstable macro-economic environment during the last 5-8 years characterised by heavy currency depreciation against major foreign currencies and aggravated by high inflation rates also contributed to the sharp increases in prices during the past 5 years. The IMF's Fifth Review of Ghana's Poverty Reduction and Growth Facility (PRGF) loan (March 5, 2002), also marking the Completion Point condition for Ghana's participation in the Highly Indebted Poor Country (HIPC) Initiative, requires the implementation of a Public Utility Regulatory Commission (PURC) strategy for achieving full cost recovery and automatic tariff adjustments in the public utilities¹³. In compliance with this condition the PURC has implemented three tariff increases during the past two years, resulting in a cumulative increase of over 300 per cent between 2000 and so far in 2003. Nonetheless, we are able to say with some degree of certainty that the cost is more affordable to households than would have been the case if the reform had not taken place.

In a survey¹⁴ conducted by CPHD and ISODEC in 2002, most households (57.8 per cent) considered the prevailing price as expensive though. About 40.3 per cent considered the cost as reasonable and affordable, whilst 1.9 per cent felt it was cheap.

Gender effects

The project has had a tremendous gender impact on the community. In a largely Moslem community, this is one project that has facilitated a process where both men and women recognise the strengths of each other to address a felt need. All committees and meetings were gender sensitive, creating a new culture where men and women work together as equals. The process itself was a very empowering one for women especially, who, after realising that their voices sometimes made a bigger impact on the attitude of political authorities, became more willing to take additional responsibilities in the community. Given that women and children are the most vulnerable to Guinea worm infestation, women now have better health to go about their daily chores, and much more time to put to productive use than was the case before, when incapacitation due to Guinea worm infection or nursing an infected child at home was almost the sole daily chore, not to mention the time that women previously spent on gathering water from distant dug-outs.

Access

In a household survey carried out by CPHD and ISODEC in 2002, 74 per cent of households reported access to safe water, from a staggering 9 per cent recorded in the baseline survey

¹³ Alexander, N.: Who Governs Water Resources in Developing Countries? A Critique of the World Bank's Approach to Water Resources Management. June 2002.

¹⁴ Community-Public Model for Water Service Deliver in Savelugu.

conducted in 1998. Public fountains were distributed evenly in the community, taking distance into consideration. Evidence of access is reflected by the drastic reduction of the incidence of the Guinea worm disease in the community by over 98 per cent p. a. since the project was implemented.

Labour Impact

Currently there are no resultant lay-offs of workers from the GWCL largely due to the small-scale nature of the reform. However the potential impacts on labour of scaling up could be high. Under an arrangement such as this, the numbers of some utility staff, such as revenue collectors, line supervisors, billing officers etc. may require drastic reductions, but it is not clear whether new jobs arising in communities involved in the partnership can adequately compensate for such reductions. In this particular case, the reform has created job openings in one way or the other. The system currently employs a workforce of four people, including:

1. System manager
2. Revenue officer
3. Security man
4. Pump operator

There is one standby plumber who is paid for services rendered and 21 commissioned agents. Each commissioned agent retains 10 per cent of total sales from the public fountain that he/she mans.

Public Health

The incidence of Guinea worm in Savelugu will be used as the sole indicator for the measurement of the impact of the reform on public health. Two reasons underpin this decision.

i) The major objective of the reform was a shared interest by the community, the District Assembly and development partners to reduce or eradicate the Guinea worm disease from the town. This was the major indicator agreed and being monitored by all stakeholders involved in the project.

ii) The Guinea worm is the only disease in the world that is transmitted exclusively through drinking contaminated water. Besides the Guinea worm, other water-related or water-borne diseases may also be gotten through body contact, contaminated food or insect vectors. It is therefore the most reliable indicator for measuring people's access to water in areas where the disease is endemic. Along the same reasoning, the Steering Committee of the International Drinking Water Supply and Sanitation Decade (IDWSSD) covering the period 1981-1990 endorsed the idea of using the Guinea worm disease (dracunculiasis) control as an indicator of the Decade's impact on health in endemic countries. In 1981, the World Health Assembly adopted a resolution on the IDWSSD, which mentioned dracunculiasis in the following context:

"The decade presents an opportunity to eliminate dracunculiasis ... as a public health problem in affected areas, where the prevalence of the disease could serve as a uniquely visible and measurable indicator of the progress of the decade." (WHA resolution 34.25, May 22, 1981).

The foregoing should leave no doubt in the adequacy of using the Guinea worm disease as a proxy for assessing the impact of a water supply intervention on public health in areas where the

disease is prevalent, whilst recognising the fact that the absence of the Guinea worm in an endemic area may not necessarily mean the absence of other water-borne diseases.

Table 3: Incidence of Guinea worm infestation in Savelugu, 1996 – 2002.

Guinea Worm Infections in Savelugu Town, 1996 - 2002							
Year	Y 1996	Y 1997	Y 1998	Y 1999	Y 2000	Y 2001	Y 2002
Cases	405	427	234	667	28	22	23

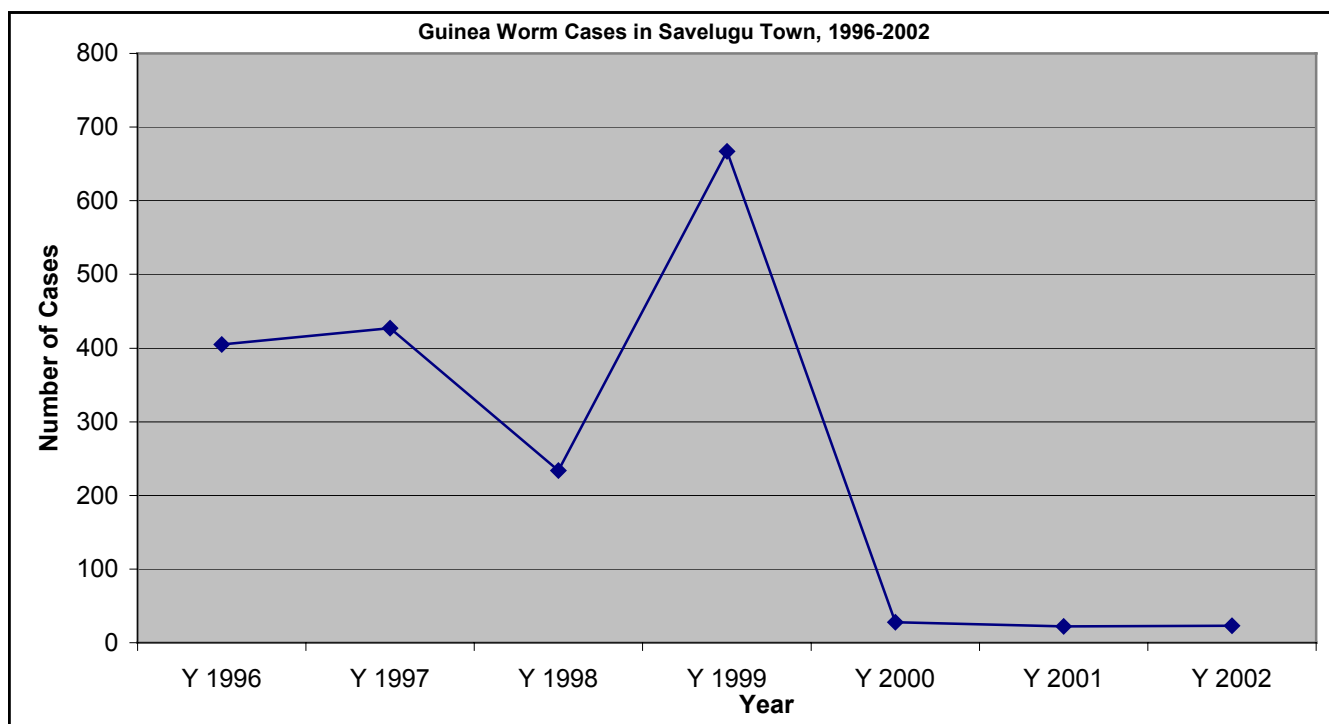


Fig. 3: Incidence of Guinea worm infestation in Savelugu, 1996 – 2002.

Source: Figures extracted from the records of the Guinea Worm Eradication Programme, Savelugu/Nanton District.

From *Fig. 3* above, the Guinea worm disease is observed to be more frequent in Savelugu town between 1996 and 1999, before the reform was completed. There was a slight drop in 1998, but this rose quickly again in 1999, the year the project implementation began. It should be noted that the effect of drinking Guinea worm infested water at any given time is manifested only a year later since the disease has an incubation period of one year in the bodies of infected persons. The slight drop in cases in 1998 is explained by intensive interventions by the Guinea Worm Eradication Programme in 1997 through vigorous filter distribution to households, treatment of open drinking water sources with Temephos Abate¹⁵, including those whose volumes far exceeded the recommended volume for such treatment, intensified surveillance, health education and case management. Such interventions could not be sustained through 1998, resulting in resurgence the following year (1999). Fortunately the water supply project was completed in 1999. The community took decisions regarding tariffs and geographical accessibility with due

¹⁵ Temephos Abate is a chemical that is used to treat open and contaminated drinking water sources. It is a larvicidal that effectively kills cyclopid copepods (the vectors of Guinea worm disease) but is harmless to other living organisms in the water, and safe for human consumption.

cognisance of the ultimate goal of eradicating the Guinea worm disease from the community. The drastic fall in the number of cases from 667 in 1999 to 28 in 2000 is indicative of the level of access of community members to potable water. The situation has remained under control since. At a meeting with the project management board in May this year, serious concern was expressed about the inability of the GWCL to at least maintain the level of supply they provided the community a year ago, to the effect that households occasionally resort to unsafe sources for drinking and other domestic use. Unless the ultimate problem of inadequate production from the GWCL's main source is addressed, the threat of the resurgence of the Guinea worm disease in the community is still looming.

Equity

Issues of equity and access by poor people have always been contentious, largely because of the many viewpoints from which equity can be defined. The equitable features inherent in this project, explicitly stated as some of the benefits that the community management of the water system would bring to community members, include the following:

1. To ensure that as many people as possible have access and can afford the cost of water all the time. To achieve this, decision making about tariff setting is placed on the water council which is the highest and most representative organ of the water project, within which people of all categories are represented. This is to ensure that tariff levels always take cognisance of the cost of water as agreed with the GWCL, operations and maintenance costs, and the income levels of people. To ensure affordability and equitable access, the minimum tariff level that can meet all expected expenditure plus a top-up for savings is fixed, and reviewed as and when necessary.
2. To ensure that every community member has equal access to water all the time, including periods of very limited supply. This is being achieved through even geographical spread of public fountains or fetching points in an equitable manner, taking population concentration and distance into consideration. Because of inadequate supply from the GWCL, water is rationed to different sections of the community in turns. This rationing system is predetermined by all members of the community, implemented jointly by the project management committee and the various water and sanitation committees and monitored by all. The object is to avoid the temptation or possible influence of influential people to gain more access than ordinary citizens, especially in periods of scarcity. Further to this, an additional cost, equivalent to the cost of 5 per cent of the water the community expects to receive from the GWCL, has been factored into the tariff calculation, making it possible for the community to provide water free of charge to people who are considered indigent. Thus each commissioned agent accounts for only 95 per cent of the water he or she sells.

4. Challenges and Constraints

Inadequate Supply: According to the project management committee, the water board and the District Assembly, the biggest constraint to the community is the inadequacy of the quantity of water that the GWCL is able to supply. This was a fear that the community had expressed during the feasibility study about an option that would make their water supply dependent on the GWCL since the daily requirement for water for Tamale Municipality alone far exceeds what the company can produce. Whilst the community understands the constraints of the GWCL, it is of the view that the terms of the contract should be respected as much as possible.

Full Cost Recovery: Tariff increases implemented by the GWCL during the past two years in line with the government's full cost recovery programme influenced by the IMF and the World Bank has resulted in a situation where some households are unable to afford the cost of water. Some of these households occasionally resort to unsafe sources for drinking and other domestic use. This is a source of worry for most people in the community, given the fact that eradication of the Guinea worm was the primary objective behind this project.

Delays in settlement of bills by households and institutions that have pipe connections is a source of worry to the management committee since they have to spend more time on follow-ups.

Training: Some members of the community have been voted to play new roles on the different committees and others have been replaced. So far no refresher course has been organised for these committees, at least for the sake of the new members on the committees. This has implications for management effectiveness and requires urgent attention.

Funding to mechanise three outstanding boreholes is currently capped. To solve the problem of inadequate supply, the community is still seeking funding to mechanise the remaining boreholes that World Vision International developed for ground water extraction. This will significantly address the problem of inadequate supply. Fortunately the government recently announced that it has allocated a significant amount to the community to improve upon the current situation. The money will be disbursed through the Community Water and Sanitation Agency, the government agency in charge of rural and small town water affairs.

Conclusion

In conclusion the Savelugu model has been very successful in showing that community participation in service delivery can bring tremendous benefits to both the utility and community members. In this particular case study, the high recovery rate in revenue from water supplied and the generally low levels of loss rates are important issues that can inform water management policy in developing countries.