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WATER, SANITATION, ENVIRONMENT and DEVELOPMENT

Role of the consumer in the water supply industry

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Introduction

The existence of any water supply industry is heavily dependent on its consumer. There can be no successful water supply industry without the cooperation and positive contribution by the consumer. Many water supply industries tend to neglect, underrate or lack appreciation for the contribution of the consumer in the running of the industry. This has led to the numerous problems encountered by the water supply industries, especially in developing countries and the untold hardship caused the very consumer.

The involvement of the consumer in some aspects of water supply is outlined. Provided consumers are adequately exposed to the realities of the industry, their positive contribution will result in a better managed, reliable, efficient and cost-effective water supply industry. Without the involvement of the consumer in the running of the water supply industry, the concept and implementation of community management of water supply systems and village level operation and maintenance will only be an illusion. Water supply and sanitation coverage for all by the year 2000 will not be significant without recognising and according the consumers their proper role in the sector.

Public water supplies try to provide water in a more efficient, cost-effective and convenient way in terms of quality and quantity. Various interventions are carried out to make water suitable and available for use. The consumer contribution in water conservation, water treatment and distribution and water cost recovery are outline below.

Water resources management

Management of water resources to maintain or improve upon the suitability of water for its various uses is of prime importance. This involves the optimal development, exploitation, prevention of pollution and conservation of the resource.

The characteristics of the types of natural water differ in several respects. Sea water (about 97%) especially inland seas, is highly polluted water. River or stream waters (about 0.01%) on the other hand carry heavy loads of dissolved and suspended matter (mud, leaves, decayed vegetation) and also wastes dumped by inhabitants living along the banks. Other activities of man such as farming and fishing may cause pollution of the water. Water contaminated with human faeces and urine may cause typhoid fever and dysentery. Organic wastes provide food for micro-organisms which include vegetable growths such as algae which may impart disagreeable taste and odours to the water. The waste liquors from manufacturing plants, mines and quarries that are discharged into streams may be objectionable due to their acid nature. Groundwater (about 0.61%) though generally considered purer than surface water, sometimes contains high concentrations of mineral salts and is hard. The purest natural water is rain water. It only gets polluted by absorbing gases and dust particles as it falls through the sky and on reaching other surfaces such as roof tops. It is therefore the task of the water supply industry to minimise or eliminate all forms of pollution to these natural waters.

Though laws and by-laws may be passed to protect water resources from pollution, poor land use and abstraction, not much will be achieved without the cooperation of the consumer as is happening in this country. From the African traditional religious point of view only such areas which are sanctuaries are free from pollution by man. However, with the growing influence of Western religion and culture such practices are being eroded. The consumer in this context is any person who uses water provided by the water supply industry. It is distinguished from a customer who has contracted to pay for water services provided him by the water supply industry.

The intake is usually at the lowest part of the catchment area. In most cases the water supply serves consumers downstream and these may be direct beneficiaries of the supply system. However, these beneficiary consumers do not generally have access to pollute the source by their daily activities. Those within the catchment area are generally not served by the source. Ironically, they are the people who have access to pollute the source by their activities. It is difficult to convince these people not to pollute the source at the expense of their livelihood. However, some of them may be consumers of the water supply industry though from a different source.

When people have to be accommodated upstream of a source the first task is to provide them with potable water and sanitation facilities. The next thing is to organise educational campaigns for these people on the dangerous implications of their activities on the downstream consumers and the attendant effects on the national economy. These campaigns can be in the form of durbars, sketches, television and radio broadcasts and handouts. Once they

appreciate the problems there is no moral justification for them to continue to pollute the source. It is acknowledged that these campaigns are costly. However, the results are positive and permanent.

The consumer must understand why he should not defecate near the ground water source that benefits him and other and should be provided sanitary waste disposal facilities based on environmentally sound low cost and upgradable technologies instead of enacting laws which will not be adhered to any way. When consumers are involved in choosing the water supply technology, they see themselves as part of the decision making process and are prepared to guarantee the sustainability of the system, since its failure is also theirs.

Water treatment and distribution

If the conservation and other measures outlined above are observed by the consumer, a significant cost saving in the treatment of water will result, because a less polluted raw water will be available for treatment. Informing the consumer briefly about the treatment process highlighting the various cost components can win the confidence of the consumer. When he is later informed about a breakdown of one of the processes he will probably understand and appreciate the cause of the change in water quality and/or quantity. An area where the consumer can make or unmake the gains of the water supply agency is in the distribution network, including service lines, overhead tanks and internal plumbing.

Dissatisfaction by consumers of water quality and quantity may lead to a loss of credibility of the water utility service. This results in the vicious cycle of low level of service due to lack of funds to operate and maintain the water supply system because consumers have refused to pay for the poor service.

Common complaints include the following: bad taste and odour of the water, presence of worms, water fleas and tadpoles, coloured or turbid water, no flow of water, low pressures, too much chemical (chlorine) in the water, water staining clothes and food, soap does not lather, etc.

The causes leading to the above complaints result from both the consumer and the utility service. However, the utility service should do all it can to eliminate its side of the problem but inform the consumer who may be ignorant adequately to address his side of the story.

A consumer complained of worms in his water and naturally accused the Water Authority of poor service. However, when his overhead tank was inspected he was shocked to discover a dead vulture which had gone rotten. A journalist thought that the water was obtained cheaply from the Akosombo lake and so refused to pay his bills which he claimed were too high. However on discovering that electric energy was used in water treatment and noting the increasing cost of electricity decided there and then to pay all his water bills including the arrears. In 1991 when sufficient water was put into the Cape Coast distribution network, the 1928 Ductile Iron pipes started bursting. As the repairs were not coping with the bursts, the heaped earth on the edge of the road further narrowed the narrow roads of the town causing a nuisance to vehicular and pedestrian traffic. However, when the situation was explained to the public through the TV media, the complaints stopped and sympathies were rather expressed for the GWSC. Consumers have been involved in mains extensions in various parts of the country. Under the PAMSCAD and National Hand Dug Well Programme, consumers contribution towards labour and material is about 70%. Consumers should been involved in reporting leaks, burst pipes and illegal connections. They can also report misuse of the property of the water utility by its workers such as vehicles, sale of fuel and repair parts, under invoicing and over invoicing etc.

Cost recovery

Cost recovery in water supply means receiving back the cost expended in providing the service. The cost components include cost of providing the raw water source, capital cost of civil structures of the treatment plant, electrical and mechanical equipment, transmission and distribution facilities, operation and maintenance, depreciation, unaccounted-for water and cost recovery costs.

The GWSC bills every consumer for the service provided at the end of the billing period ie monthly. The tariff is based on a stepwise consumption pattern for all metred pipe-borne systems and is uniform throughout the country. The more you consume the higher your bill. The handpump system for the rural areas and the standpipe for the peri-urban areas have lower rates. For piped systems, each customer has an account with GWSC. Those without meters are billed on a flat rate. Handpumps and public standpipes are billed per household or per handpump or standpipe.

The efficiency and cost of revenue collection depends on the type of service, ie a privated service connection either to the house or factory, a public standpost or a rural handpump. Whilst it is easier to recover the water revenue from the customer with a service connection, it is more difficult and expensive to recover water revenue from the latter two because of the number of customers involved for the same source. Disconnections are not justified since the paid up customers will be unfairly denied water just because others using the same source have not paid.

However, through the active involvement of the community Committee for the Defence of the Revolution (CDR), Town Development Committees (TDC), Water and Sanitation Development Boards (WSDB) and traditional rulers and elders, many revenue collection problems have been overcome and the cost of revenue collection greatly reduced (Table 1).

A policy was adopted to operated the standpipes on an individual care-taker or community management basis. The GWSC set rates for given sizes of container used and a commission of 20% paid to the care-taker. However in the case of the community management basis, the CDR, TDC, etc, organised themselves to collect direct sales. They even levied more than the approved tariff and used the proceeds for community development projects such as street lights, construction of KVIP latrines, etc as in the case of the Cape Coast CDR.

Conclusion

Consumer contribution is a valuable resource that Water Authorities in developing countries should exploit for their successfully operations. Consumer involvement may also provide extra funds for other community development projects and water supply systems rehabilitation and capacity expansion.

Table 1
Revenue/expenditure on 375 handpumps (Central region)

A Year	B Revenue cedis (1000)	C Expenditure cedis (1000)	D C/B f 100%
1986	381.7	879.6	230
1987	1575.2	1340.0	85
1988	1587.4	1496.9	94
1989	1766.9	1024.7	58
1990	3738.7	2446.3	71
1991	5143.3	2899.6	56
1992	9304.8	4102.1	44

US$1.00 = 600.00 May 1993

Source: GWSC central regional office.