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Water supply management in rural Niger Delta

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IN RURAL NIGERIA, where about 68% of the population resides, the provision of potable drinking water is minimal. However, in recent decades several governmental agencies, such as, DFRRI and OMPADEC, and other non-governmental organizations have attempted to ameliorate the water problems through the provision of potable water supply using boreholes. The use of boreholes by the Federal Government was initiated following its huge success in the rural areas of the former Eastern Nigeria in the early 1980's. In fact, the first national borehole construction programme aimed at providing safe water supply to rural settlements was initiated in 1981 (Bob-Duru, 2001). The rationale was to locate 1,500 boreholes at various suitable locations, and equip each of them with submersible pump, standby electricity generating plant, overhead tanks with a total capacity of about 100,000 litres.

While these facilities have provided the needed succour initially, the sustenance of such facilities has often been short lived owing to the inability of government and its agencies to manage adequately such rural water schemes. The consequence is the increasing resort of these rural communities to the use of streams, rivers, hand-dug wells and commercialized boreholes. In addition, the quality of water supplied by some of these boreholes has tended to be questionable indicative of lack of competence on the part of the executing contractor, or the desire to make profits at the expense of the well-being of the communities provided with the facility. Thus, it becomes necessary to periodically assess the functionality and management of the few established rural water supply schemes. The assumption is that the peculiarities of the Niger Delta can provide the matrix for a more efficient rural water supply policy in the country.

Data and methodology

The study covers mainly the southern parts of Delta state, and involves the three local government areas of Ukwuani, Isoko North and Isoko South of the Niger Delta. The data utilised were drawn from a primary source generated between January, 1998 and December, 2002 which include information on the availability of water supply, the perceived quality, and the management in the sampled communities with varying soil and aquatic characteristics. Other complementary data were obtained from the Water Board, Delta State Planning Office, the Ministry of Health, among others.

In Ukwuani Local Government Area, 5 rural communities were examined, while in the Isoko North and South Local Government Areas, 18 rural communities were in-

vestigated. The choice of communities was guided by the terrain and the observable distributional pattern of the settlements. This accounts for the large number of settlements selected in favour of the Isoko communities.

Findings and discussion

Examination of the findings shows that about 58% of the water supply facilities in the communities studied was functional. The percentage of functional water supply schemes was notably higher for the Ukwuani Local Government Area than for the Isoko communities. While for the Ukwuani communities about 60% of the water schemes were functional, for the Isoko communities it was only 37.9%. In addition, the Isoko communities had the highest number of abandoned water schemes (31%).

Comparatively, the Isoko communities have a larger proportion of water schemes run by different agencies as against that of Ukwuani communities that depended on the sole effort of the government. A further analysis of the water scheme executing agencies revealed that 55% of the communities received various forms of assistance from Shell, Agip, Benin-Owena River Basin Development Authority, and the Petroleum Trust Fund. Many of the abandoned water schemes in different stages of completion in the Isoko communities were executed by some of these agencies. Some of the schemes were being developed by the oil companies as part of their community development efforts. In settlements with community-provided boreholes, about 90% were functional suggestive of the importance the people attach to this vital facility for their total being (See Tables 1-3).

In both Ukwuani and Isoko communities, 66% of the people travel less than a kilometre to obtain drinking water, while another 34% travel more than a kilometre. The communities in Ndokwa LGA travel longer distances to obtain this facility with Obinomba and Umutu communities travelling an average of about 1.6 kilometres. For the Isoko communities, over 80% travelled less than 1 kilometre. Generally,, settlements with community-provided boreholes travelled the shortest distance, and may account for the good management of such facilities. For example, the boreholes at Araya, Ada, Ivrogbo, Orie, Aviara, Okpe-Isoko and Uvoh-Irri were operating satisfactorily at the time of the investigation.

In communities where the government established borehole facilities are non-functional, the streams and rivers are highly patronized thereby increasing the incidence of water-borne and water-washed diseases. For

Table 1. Rural water schemes managed by communities in Isoko North and South

Communities	No. of Boreholes	Servicing Generators	Status of Facility	Utilization Capacity (%)
Okpe-Isoko	1	1	Functioning	100
Aviara	1	1	functioning	100
Ada-Irri	2	1	1 borehole bad	50
Bethel-Oyede	2	1	1 borehole bad	50
Uvoh-Irri	1	1	Functioning	100
Uzere	2	1	Functioning	100
Araya	2	1	Functioning	100
Ada	1	1	Functioning	100
Ivrogbo	1	1	Functioning	100
Orie				
			Aggregate Utilization Capacity	90%

Source: Personal Fieldwork; Isoko Development Plan Committee.

example, an analysis of reported cases in hospitals and clinics of water-borne diseases, such as cholera, typhoid and dysentery in the past 30 years reveals a downward trend between 1970 and 1974, unsteady fluctuations between 1974 to 1995, and an increasing trend to the present day. The same pattern is duplicated for water-washed diseases, such as intestinal schistosomiasis in the Niger Delta.

Equally observed by the study is the vivid inability of the benefitting communities to manage the water supply facilities. Among, for instance, those managed by the Urban Water Board in 6 stations only 3 were functional (50%) in the Isoko communities. In Ukwuani Local Government Area the services rendered by the government's Integrated Water Scheme to adjoining Obinomba community was said to be very epileptic. This has prompted the emergence of private boreholes in both Ukwuani and Isoko North and South Local Government Areas. More disturbing is the production of unsafe water mostly during the dry season in the study areas. This is evidenced by the proportionately high number of non-functional water boreholes in the area and the production of water with some taste and colouration by the few available to satisfy the much needed quest for water, the public health problems associated with these sources of water notwithstanding. However, packaged or sachet water adds another distressing dimension because of the aggressive marketing and consumption arising from unreliable borehole water supplies of government and its agencies.

Summary

The paper has observed the unnecessary inconveniences caused the rural population and result of non-provision of portable water supply due to unnecessary bureaucracy in replacing damaged or worn-out borehole parts or generator. The fact that the community-operated boreholes were more functional than those of government points to the need for a better coordination and supervision of water supply facilities by a rural government agency in close partnership with the community, preferably at the local government level.

Secondly, there should be a periodic review of borehole facilities in the area. With rapid population growth and increasing urban-rural migration the need of water for domestic and for small-scale business enterprises, such as, laundry, beauty salons, etc. cannot be overlooked.

Thirdly, there should be a more purposeful approach in the integration of water supply schemes among communities. This approach will promote the piping of water supply to various parts of the community rather than people converging around the boreholes to fetch water. The wastage of energy and time in the course of procuring domestic water supply cannot be quantified adequately.

Fourthly, during critical periods of water scarcity particularly during the dry season, water tankers from the suggested agency/water board should supply drinking water free of charge to the neighbouring villages and hamlets.

Table 2. Water schemes in Isoko North and South LGAs by agencies

Community	No. of Boreholes	No. of Generating Sets	Status	Agency
Ovode	2	1	1 Borehole Bad	UWB
Emede	2	1	2 boreholes	UWB
Ozoro	2	1	Functioning	UWB
Igbide	2	1	Generator bad	UWB
Otor-Owhe	2	1	1 borehole bad	UWB
Orie	2	1	2 boreholes	UWB
Ewokpaka	1	-	functioning	PTF
Okpude	1	-	2 Boreholes	DFRRI
Enwhe	1	-	Functioning Abandoned Abandoned Abandoned	PTF
TOTAL	15	6		

Source: Urban Water Board, Asaba; Isoko Development Plan Committee, 2000.

In addition, water purification technologies (for chlorination and lime treatment) that are environmentally friendly should be introduced given the unique terrain of the Niger Delta. This will also check the incidence of water-borne and water-washed diseases in the area.

Finally, where boreholes experience frequent breakdown communities could be advised to harvest rain water, preserve and boil before drinking. This is most appropriate in areas that are prone to erosion and excessive run-offs.

Table 3. Government water schemes in Ukwuani Local Government Area

Community	No. of Boreholes	No. of Generating Sets	Status	Agency
Obiaruku*	1	1	Functioning	RWB
Obinomba*	-	-	Not	RWB
Umutu	1	1	Functioning	RWB
Amai	1	1	Not	RWB
Umukwata	1	1	Functioning Functioning Functioning	FG
TOTAL	4	4		

* = Integrated Water Scheme **Source:** Fieldwork.

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