



## Water and community management

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THE PRE-INDEPENDENCE GOVERNMENT in Zimbabwe initiated a borehole drilling programme for the provision of domestic water to rural populations. Dams and sand-abstraction systems were put in place for the watering of livestock. A centralised maintenance and repair system was provided at a District level by skilled technicians funded from local taxation of rural people and from quasi-commercial projects.

Rural people were not involved in the maintenance and repair of their water supplies and no attempt was made to train the users in operation and maintenance. It was a completely centralised system with maintenance and repair undertaken on the basis of rotational visits to the boreholes. At Independence the new government continued with this centralised system and provided a budget from Treasury to cover costs. However, as the number and coverage of boreholes was extended and as available funds slowly diminished, so this centralised system was unable to maintain the service.

A new, decentralised system was initiated where communities became responsible for the maintenance and upkeep of pumps, with costs being met by the end-users. Pump committees were set up and pump-minders trained in maintenance and repair procedures. However, this was hurriedly introduced and the pump minders were poorly equipped and the communities who for so long had been provided with "free" water, were unwilling to pay. This is demonstrated by the fact that even now, 35% of survey respondents do not consider the community responsible for its water supply. As a result many hundreds of pumps became inoperative, due either to a lack of tools, skills or finance. Women had to walk ever-increasing distances to use a reliable hand-pump, or to the nearest river or to unsafe, seasonal water supplies.

### Water supply status survey

A survey to establish the present status of water supplies, householder's perception of sustainability and their preparedness to pay for services was undertaken in five differing locations during April 2001. This study, conducted by the authors, indicates that end users, women, would in fact now be prepared to pay for a localised repair and maintenance service on a needs basis, provided that a satisfactory service was ensured.

The survey was carried out in five geo-physical regions each with differing water provision possibilities, being:

- **Sun Yet Sen.** A community around a business centre, using water from a piped water supply system to a nearby police station;
- **Nyashongwe.** A non-operative piped water supply, now reliant on boreholes and sand-abstraction supplies;
- **Dongamuzi.** A poor ground-water area, heavily dependent on open-surface water and sand-abstraction systems;
- **Irisvale.** A 'Resettlement Area', predominantly hand pump borehole supplies where people are well organised; and
- **Huwana.** An area with a good potential for both boreholes and sand-abstraction.

Each village is comprised of 100 homesteads with an approximate population capacity of 800 to 1 000 people. A total of 25 respondents from each village were interviewed. Twenty of these were local community residents and five were key informants from the local leadership; the councillor, the pump minder, the chief, the headmaster and/or the village health worker.

### Survey methodology

A number of survey methodologies were used to provide both the quantitative and qualitative data and to consolidate the information. Face to face interviews were conducted and observation techniques were used to assess the number of boreholes in use and not in use. A desk copy survey from previous research studies was undertaken to provide the necessary background information. The three authors have each been actively involved in the research areas through their participation in group and community training programmes and in the provision of water supply schemes in the areas, their accumulated knowledge was therefore also of benefit.

### Survey results

Although a borehole supply was shown to be the most commonly used source of water (58%), 36% of respondents drew water from more than one supply. In the event of a breakdown of a borehole pump most people thus had either an alternative source or a further borehole from which to draw water. This was reflected in the present lack of commitment to pay for water supplies, where 54% of people are presently not financially contributing to maintenance and repair. However 70% stated they were prepared to pay in either cash or kind should a suitable scheme be introduced. A further 23% were prepared to

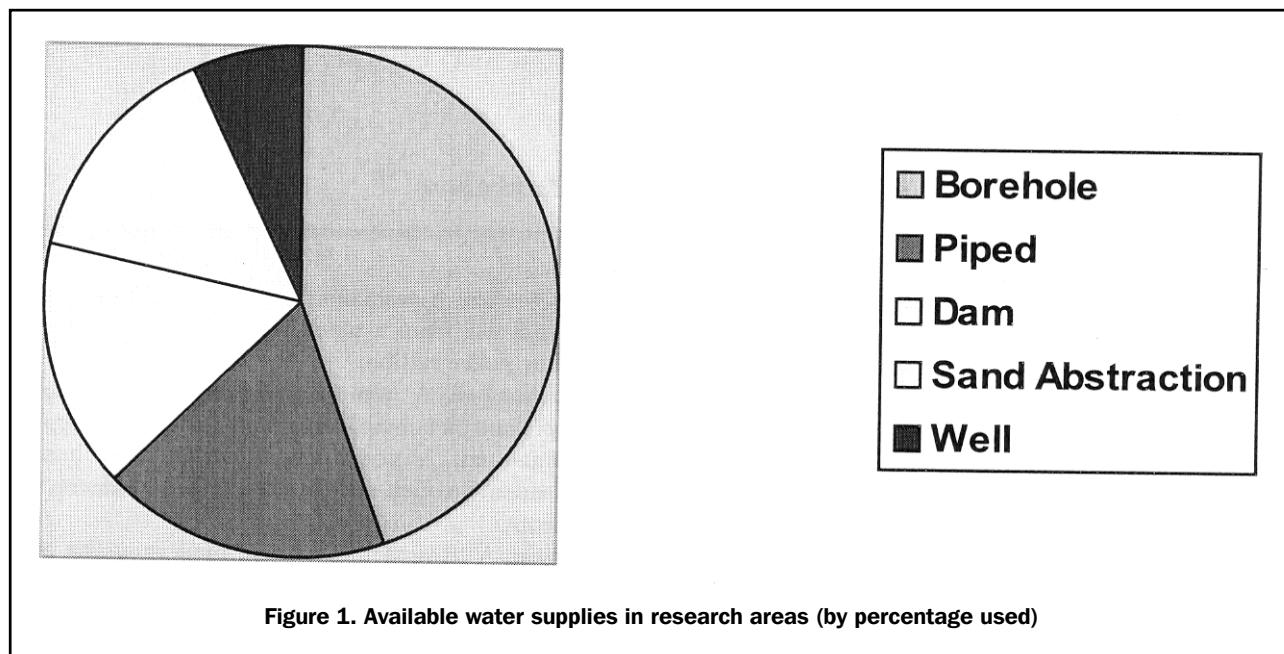


Figure 1. Available water supplies in research areas (by percentage used)

provide labour and only 7% were not prepared to contribute at all. A few respondents stated that water supply systems were for the elite or that water was a God-given right and therefore no one should be expected to pay.

The survey revealed that in the main people drew their domestic water from boreholes and provided water for their livestock from alternative systems such as dams and sand-abstraction sources. However, further questions revealed that there was an obvious reluctance to sell cattle to pay for either an improved water scheme or the maintenance of an existing scheme.

Although there is evidence of a willingness to pay for the up-keep and repair of water supplies there presently appears little prospect for any such community-based scheme. Several respondents however, indicated that they were quite prepared to pay for spares and the full cost of pump repairs. When asked for ideas on improvements to water supply systems several people referred to the need for better organisation and an improvement in service delivery, both from the initial water committee and for a need for an effective spares supply service/system.

Boreholes have long been used as a panacea for domestic water supply, the concept is proven and accepted, drilling and installation equipment is readily available but the basic operation and support service is not in place at the user level.

The survey showed that 44% of borehole pumps are presently not working, indicating that the present maintenance / repair system is not effective, or that people are in fact not prepared to pay for the full costs of their water supply. It is also evidenced from the survey that although boreholes are the most convenient water schemes, people are quite prepared to use alternative water supplies and further development of small-scale, sustainable systems should be instigated to provide safe water from dams and rivers where thousands of cubic metres of water are stored.

### Sustainable water

Respondents to this survey have stated a willingness to pay for services, however few if any are presently in place. If rural people are to be assured of sustainable water supplies, reliable operation, maintenance and repair systems must be

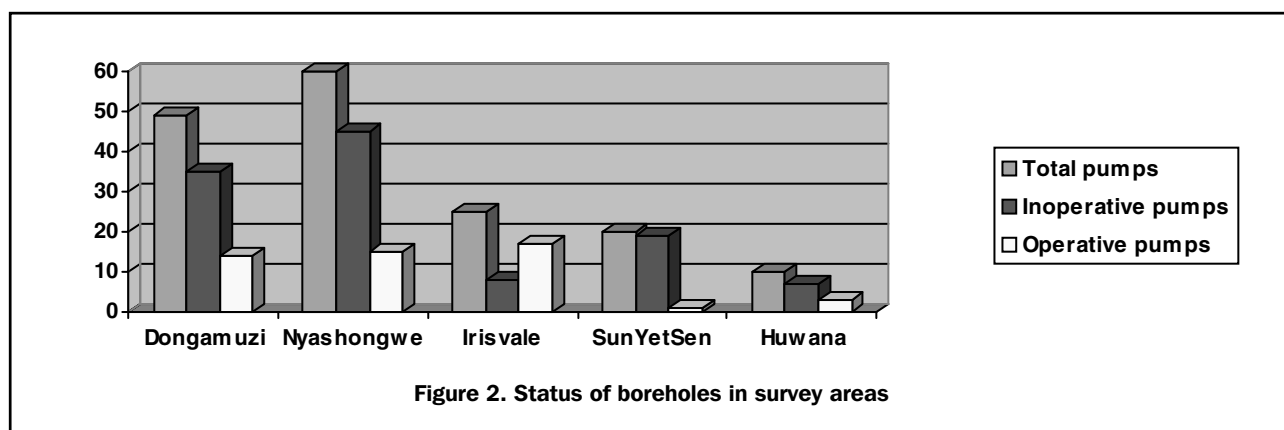


Figure 2. Status of boreholes in survey areas

put in place. Systems and procedures must be devised with the end-users whereby maintenance/repair and user fees may be collected and securely held until such time as required and the spares and tools necessary for service/repair must be made readily available at the local level for purchase.

In order to ensure water for all, planners and developers need to be cognisant of these facts. There is for example a much under-utilised potential for the supply of clean water from the sediment of silted rivers. Simple, cost effective measures such as sand-abstraction, sand filters and infiltration wells at dams also need to be effected. To ensure reliability at a local level, within reasonable proximity to rural homes, it is imperative that basic and sustainable systems are utilised which rural women are able to operate, maintain and repair themselves – and ideally to install themselves. Small-scale, sustainable pumps and appropriate maintenance/repair systems are required to ensure that people are able to operate and manage water supplies themselves and will ensure both responsibility and effectiveness of water supplies.

Dabane Trust has proved that with appropriate training women are able to install, service and maintain their own water sources. With the large numbers of inoperative hand pumps and boreholes and silted dams in Zimbabwe and other countries the authors believe that it is high time that planners and development agents exploited the potential of basic, sustainable low-technology water supply initiatives.

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