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Towards more effective projects

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ABSTRACT

Rural Water Supply projects are not always as well used as anticipated. Some of the non-technical reasons for this, including choice of sites, financial aspects, and political influences are discussed, with particular reference to Senegal.

INTRODUCTION

Water supplies are a vital element of rural infrastructure, and are an important area for government action. Construction of new rural water supplies is an essential activity in all developing countries and is one which commands the support of many donor countries and aid organisations. While NGO's have a very useful role to play in rural water supply, it is the large-scale programmes financed by inter-national agencies in agreement with governments which tend to dominate the water sector of a country's infrastructure. The effectiveness of government sponsored programmes is thus very important to the population of the country concerned.

One of the criteria employed to assess the effectiveness of a water supply project is to compare actual use being made of a new supply with the assumed use. It has often been recorded that new water supplies are not used to the extent to which their designers expected. This may be due to technical problems, but with continuing improvements in design these problems are becoming fewer. More often, however, a project's success depends on the level of understanding which exists between the four main parties involved - the donor or lender, the designers, the government (or local authority), and the rural community which will use the supply.

BACKGROUND

This paper draws on the author's experience since 1981 of working with government water departments as an ODA Technical Cooperation Officer. The last three years have been with the Ministry of Rural Development and Water Affairs in Senegal where an ODA funded project was completed in 1987. This project

saw the construction of 18 village water supply schemes, all similar in principle (ref. 1). A diesel driven pump abstracts water from a large borehole and delivers it to an adjacent elevated storage reservoir. From there it flows by gravity to a number of nearby villages, generally within 5km of the water tower. During the last ten years some 450 similar schemes have been built in Senegal under government programmes, and over 600 more are planned for the 1990's, bringing the total to around 1200.

Senegal is a sahelian country which was severely affected by droughts in the 1970's and early 1980's. Average year rainfall varies from less than 250 mm/yr in the north to over 1200 mm/yr in the south. All areas experience at least a 6 or 7 month dry season, extending to 9 or 10 months in much of the country. The land is very flat and groundwater is the only possible source of water in most rural areas. During the drought years, many wells dried up causing great hardship in these rural areas, and it was at this time that the government policy decision to develop a large number of deep boreholes equipped with motor-driven pumps, drawing on ancient reserves of water, was taken. The intention was to provide reliable water supply which would make rural life less precarious, and, by providing opportunities for further development, help to reduce the rural exodus.

BOREHOLE USAGE

Borehole schemes in Senegal are managed by a committee, which collects money from the villages served in order to buy fuel. Typical charges are 250 CFA (500 CFA = £1) per household/ month and 150 CFA per head of cattle/month. A small amount of fuel is provided by the government each year, and maintenance and repairs are carried out by a department of the Ministry. It is intended to withdraw such government support gradually in the near future, but details of exactly how this will be done without causing difficulties to the users are still under discussion.

Usage of boreholes varies seasonally, with a minimum once the rainy season is well established, and a maximum generally two

months before the rains start. These reflect use of water for animal watering (which may account for 2/3 of use at some villages) and other uses such as small scale irrigation of vegetable gardens (which also uses large amounts at certain times of year). Figure 1 shows a typical annual cycle of use.

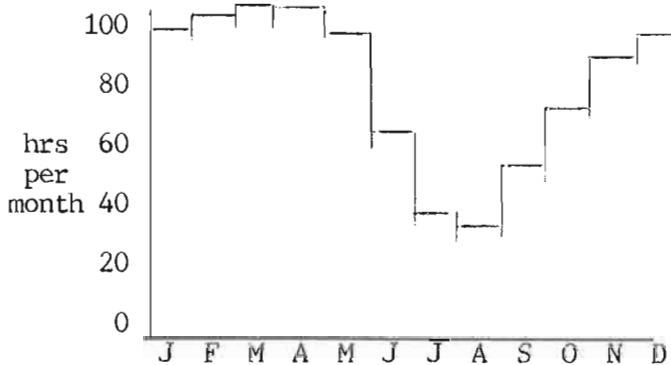


Fig. 1 Annual cycle

BOREHOLE UNDERUSAGE

During the author's regular visits to village water supply schemes in Senegal it was noted that many of them are used much less than was anticipated. Although details refer particularly to the British project, similar observations apply generally. By comparison with design capacity, most are working at load factors of less than 50%, many at only 25%, as shown in figure 2. The data exclude breakdowns, and are an indication of the decisions made at village level about how much borehole water to use. Since unused capacity represents a wasted investment, the large difference observed between design and actual use is a matter of some concern.

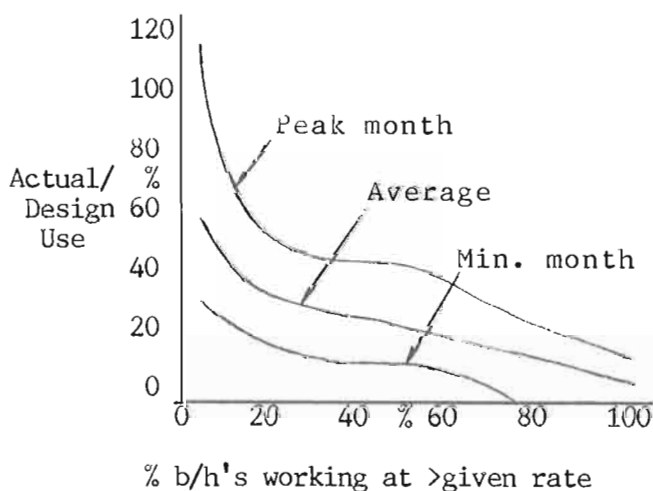


fig. 2 Load Factor

POLITICAL INFLUENCES

The completion of a large number of new boreholes is a national target against which government success is measured. Internal policies such as security considerations or regional programmes can affect choice of site. In Senegal, infrastructure developments are favoured close to the borders, as a help to stability in these areas. At a local level, community leaders may use the construction of a borehole in 'their' area as an indicator of their personal authority and ability to serve their area. Religious leaders have a particularly strong influence in Muslim countries, and villages in Senegal close to religious centres are more likely to have a borehole than others. Equally, donors often provide aid to make a statement about their relationship with the recipient country, and are not always very concerned about exactly how their aid is used. Water supply projects are thus subject to many political pressures, and the tendency of governments and donors is often to measure success by numbers of new works rather than by a continuing ability of these works to meet their design criteria.

The choice of villages at which such schemes are to be built is a sensitive issue. There are thousands of officially recognised villages to choose from, and considerable benefits are perceived to being a 'chosen' village where a borehole scheme is to be based. However, villages or areas which have an influential champion who can ensure their selection are not necessarily those with the greatest need, or which will be able to make best use of the scheme. There is a need for rational assessment of priorities to take precedence over political considerations if schemes are to be built where most needed.

CHANGED CIRCUMSTANCES

During recent years, many African countries have adopted policies of structural re-adjustment to their economies. These usually have as two of their main themes a reduction in numbers of government employees, and a removal of government subsidies from operational activities. Both of these can have a considerable effect on rural water supply arrangements. By limiting employment at a time of rapid expansion in numbers of rural water installations, the government agency becomes unable to provide the level of maintenance required. By removal of subsidies, the ground rules which were valid when a project was set up are no longer true. Rural communities may find themselves financially responsible for equipment that they cannot afford.

The overall effect of these two changes is that types of equipment which villagers could afford to run and were able to maintain with government help become non-viable in the changed situation. Villagers who were happy to be given a relatively hi-tech system while it was supported by government are unable to afford the additional costs. The amount of fuel purchased and the frequency of maintenance reduces, and the amount of use decreases. Despite the 500% increase in motorised boreholes, the numbers of maintenance personnel have dropped by over 30% in the last ten years. Shortage of cash to buy fuel is the single most common reason given for restricted use of a borehole. The 'top-down' approach of many governments results in the users being largely excluded from decisions on type of equipment, but it is these users who suffer when policy changes. It is clear that if ordinary people have to pay, they must be involved in projects from the start. They must be consulted about the choice of equipment and be aware of all the financial implications of their choice. Unfortunately, the structural framework within which such choices may be expressed is not always well established.

CULTURAL DIFFERENCES

A frequent problem is a lack of appreciation of the attitudes of rural populations towards clean water. It is assumed that they share the sense of values of the design engineer or donor institution. It is assumed that they want lots of clean water and value it highly, but this is frequently not so. Wherever a community exists, there must already be a water supply. New supplies are essentially an improvement to that supply, by improved quality and/or easier access and/or increased quantity. If the 'improvements' are not perceived as such or not socially acceptable to the rural community, they will not be used as much as expected. There will certainly be resistance to paying for something which is not seen as an improvement and is not valued. Difficulties in social acceptance of new sources of water are common, and have many origins including gender roles, witchcraft, illiteracy, resistance to change, and financial aspects (ref. 2). Again community involvement is important if a new well is to be a well used well. Changing the long-held beliefs and attitudes of people cannot be achieved overnight, and will only come about with a long term programme of general education.

FINANCES

Figures which are usually quoted in connection with projects refer only to the initial capital cost. The problem of how to raise the additional cash required to meet operating and maintenance costs is not given the attention which it needs. Additional cash must be provided by the users, which means they have to be earning money and be prepared to spend that money on clean water. Shortage of ready cash is a common cause of the motors being out of action. The observed under-usage of the borehole schemes is an indication that considerable use is still made of traditional sources of water which are free in cash terms.

IMPLICATIONS FOR PROJECTS

There is a need to improve the general level of effectiveness of large government programmes for rural water supply. Progress toward this objective can be made by accepting that the problem exists, and tackling some of the symptoms outlined above.

These are not technical problems, and greater involvement of non-technical personnel in government water departments would be a good starting point. It is important that those responsible for selecting equipment should also be sensitive to the real needs of the rural populations to be served and to their ability to manage it in the long term.

Greater emphasis also needs to be put on the involvement of users from the start of a project, and better structures need to be in place for users to make their choice known. An open approach to the result of studies needs to be made so that the results are less liable to be distorted by outside influences.

Continued long term efforts to raise the general level of education of rural communities are required so that their attitudes towards water quality will change. Short term health components of projects have little lasting effect. Once clean water is valued more highly, demand will increase. There is also evidence that factors such as illiteracy contribute to mistrust over use of funds by management committees, making people reluctant to contribute their money.

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