

# The cost of rural water supply: A case study in South Africa

MA Schur

London House, Mecklenburgh Square, WC 1N 2AB London

## Summary

This paper critically reviews the progress in the water sector in South Africa over the past 2 decades. Particular attention is paid to the institutional setting, and it is noted that no **single** agency is responsible for supplying water to unserved communities, which has resulted not only in haphazard and unco-ordinated policy in the sector, but, more importantly, in a situation in which less than 53% of the rural population has access to adequate potable water supplies. Cost Figures must continue to be regarded with a degree of scepticism as long as estimates are based on extrapolations from existing data rather than on detailed cost estimates for different regions and varying schemes and technologies. This paper provides an example of a detailed cost estimate for one particular project, and suggests that there are potentially considerable cost savings associated with small-scale schemes, which emphasise community participation and the use of community labour.

## Introduction

In a draft policy on water supply and sanitation for developing communities, the Department of Water Affairs and Forestry (1991) has acknowledged that cost estimates for basic water supply provision "will continue to be a considerable task as long as information on water sector demand remains at its present low level". It is not surprising, therefore, that rural water supply cost estimates by the Development Bank of Southern Africa (DBSA) (see e.g. Hollingworth, 1990; Jackson, 1991) and the CSIR (see e.g. Pearson, 1991) have tended to rely on extrapolations from existing data, rather than on detailed empirical projections.

This paper begins with a brief history of water supply development in South Africa since the 1970s, focusing on the institutional constraints in the sector. This is followed by the core of the paper, in which a detailed cost analysis of a rural water project is provided. The project was initiated by the Rural Advice Centre (RAC), a non-government organisation working in the field of rural development. It is hoped that an assessment of the particular approach followed by the RAC (community participation, the use of local labour in construction, etc.) will contribute to a re-evaluation of the global estimates on which policy conclusions in the sector have been unduly influenced.

## Institutional issues in the water sector

The emphasis in water supply development in a South African context has been on large-scale regional schemes, involving conventional engineering designs of dams and storage reservoirs which aim to supply water to a number of communities via long pipelines. Not only have such schemes been costly to implement and operate, but the long time-period required for construction has meant that regional systems have been unable to respond to immediate needs brought about by severe water shortages, such as the drought in the mid-1980s. As a result, most authorities have been forced to switch to emergency relief supplies, usually in the form of small borehole schemes (Pearson, 1991). As financial constraints worsen, regional plans have slowed and cost recovery has been introduced (at a low level) in many areas.

Moreover, the institutional setting in which water supply development has taken place is instructive as to why only 53% of

the population living in rural areas of South Africa had access to adequate drinking water supplies at the end of the decade (Pearson, 1991). In real terms, the United Nations' International Drinking Water Supply and Sanitation Decade (IDWSSD) appears to have made very little impression in a South African context, "where no single agency at national level is charged with the responsibility of ensuring that all households are served with adequate water supply and sanitation" (Muller, 1991a). The Department of Water Affairs and Forestry, for example, which is responsible for controlling and encouraging effective water resource development, has no direct responsibility to supply potable water.

Sound policies and strategies for rural water supply development are meaningless in an institutional framework which is fragmented and unco-ordinated. Responsibility for water supply to communities "within" the Republic has been delegated to a variety of Government agencies at national, regional and local levels. At the national level, the Departments of Water Affairs, Planning and Provincial Affairs, National Health and Development Aid (now defunct) all have some responsibility for promoting service provision in rural areas; none, however, has a direct mandate to supply water to communities which remain unserved.

At the regional level, Water Boards are restricted in their operations by the requirements that their tariffs cover costs and that they supply local authorities rather than individual consumers (Muller, 1991). Both restrictions invariably result in the poorest communities missing out, perhaps with the exception of Umgeni Water in Natal, which has a substantial water and sanitation programme to rural and peri-urban areas. Regional Services Councils, structured on racial lines, have proved unsuccessful on legitimacy grounds. Many black local authorities have failed for the same reasons.

Furthermore, apartheid social engineering and the subsequent emergence of so-called national states and self-governing territories has placed the majority of South Africa's rural population outside the jurisdiction of the above-mentioned government departments. The water supply needs of these communities have thus become the responsibility of financially hamstrung, inept and often corrupt homeland governments. At local level, many tribal authorities lack legitimacy and/or the resources to provide services.

By the 1980s, a number of non-government organisations (NGOs) began to operate in the water sector. Recognising the importance of appropriate technology, these NGOs opted for small-scale schemes, preferring spring protection, groundwater extraction and local water systems (reticulation to a few communal

---

Received 16 September 1993; accepted in revised form 18 March 1994.