Technical note

A résumé of WASH, UNDP, and World Bank water and sanitation experience

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Abstract

The paper describes findings of UNDP, World Bank and the USAID-sponsored Water and Sanitation for Health Project (WASH), that are of value to water and sanitation provision for the developing urban and peri-urban areas of South Africa.

It is the view of these agencies that the challenges in water and sanitation provision in developing countries can conceptually be viewed as two closely related agendas, viz:

- to complete the "old agenda" of providing domestic services, and
- to make progress with the "new agenda" of environmentally sustainable development.

The paper abstracts many important findings of the agencies' work, and describes their shift in emphasis from single-focus projects to more integrated approaches to the provision of infrastructure and the improvement of health. It is noted that much evidence is available from case studies about what works in given sets of circumstances and what does not, and why projects and programmes must evolve from, and be tailored to, diverse individual and dynamic circumstances.

Introduction

The author spent a sabbatical year in the USA, courtesy of the Fulbright Programme. He researched urban growth management and water and sanitation in developing countries.

Findings are presented in this paper that are of value to water and sanitation provision for the developing urban and peri-urban areas of South Africa. The emphasis is on studies documented by and current thinking in the USAID-sponsored Environmental Health Project (until 1994 the Water and Sanitation for Health Project), the UNDP - World Bank Water and Sanitation Programme, and the World Bank.

Two agendas

The infrastructure challenges facing developing countries, particularly in the water and sanitation sector, are formidable. Rapid population growth and urbanisation are stretching the physical capacities of infrastructure and the limits of natural ecosystems. Government budgets cannot accommodate competing demands for investment resources. Many public institutions in the sector suffer from weak management and a lack of an incentive structure to motivate genuine reform. Many initiatives in the sector fall short because they are inflexible, non-participatory and unsustainable for a variety of reasons.

The challenges in water and sanitation provision can conceptually be viewed as two closely related agendas, as follows (Serageldin, 1994; Briscoe, 1995):

The first challenge is to complete the "old agenda" of providing domestic services. Although considerable progress has been made, much remains to be done. A thousand million people still lack access to an adequate supply of water, and 1 700 million do not have adequate sanitation facilities.

Despite the number of urban people with adequate facilities increasing by about 50% between 1980 and 1990, because of growth in urban population, the number without access to adequate sanitation actually increased by about 70 million!

The quality and reliability of existing services are often unacceptable. Furthermore, the costs of providing services are rising substantially because of rapid urbanisation, mismanagement of water resources, and the low efficiency of many water and sanitation supply institutions.

Developing countries have over the past 30 years allocated an increasing share of their GDP to public spending on local domestic water and sanitation services. It would appear that the proportion of public spending on these services has not been appropriate for three reasons: Firstly, the low contributions of domestic users have meant that supply agencies have not felt obliged to provide an adequate service, and to provide it to all consumers; in a sense, they have felt that they are not accountable to consumers. Secondly, this spending has been used primarily to provide subsidised domestic services to the middle and upper classes. Thirdly, spending on domestic services has left few public resources available for waste-water treatment and management on the wider urban or metropolitan scale.

The second challenge is the "new agenda" of environmentally sustainable development. In some respects, viz. high costs and limited resources, the situation confronting developing countries is similar to that faced by industrialised countries. But in other respects the task for developing countries is considerably more difficult. Water in developing countries is generally much more seriously degraded and is deteriorating rapidly; far fewer financial resources are available for environmental protection; and institutional capacity is weaker.

Changing emphasis

A changing emphasis of the international agencies involved in water and sanitation provision is noticeable as follows:

- from single-focus projects (e.g. focus on technology, or on preventive health, or on hygiene education); to
- more integrated approaches to the provision of infrastructure and the improvement of individual and community health.

This is accompanied by other shifts in emphasis, particularly:

- from primary attention on rural areas, to primary attention on

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the cities;
- from top-down approaches, to approaches that are a judicious mixture of top-down and bottom-up;
- from focus on construction costs of facilities, to focus on lifetime costs of facilities (i.e. including operation and maintenance); and
- recognition of the need to ensure the financial and environmental sustainability of projects (UNCHS et al., 1994 and 1996; World Bank, 1993a, 1993b and 1994; UNDP et al., 1995 and 1996).

Findings

Key findings of the international agencies include:

- Appropriate choice of level of service and of the technology type is vital if the needs of a particular community are to be met. Many of the technologies described in the agencies' publications can be used to provide effective and efficient services even for the poor, and are at the same time more affordable.
- Moreover, if the scale of the technology is reduced, there is a greater potential for community-based water and sanitation systems and for private sector involvement in these systems. Small-scale, low-cost technologies are needed in the developing world. If the technology does not have major capital requirements, community groups and small private enterprises will usually be able to provide the services (Briscoe, 1995).
- Adequate institutional provision for water and sanitation involves diverse skills and capabilities, many public and private actors, and a range of tools for capacity building - some of these may have to be innovative. Promising directions include partnerships in which non-formal institutions (such as neighbourhood associations) manage the feeder infrastructure, while formal institutions (such as governments or utility companies) manage the bulk and link infrastructure. Finance must be appropriate - for example, microloans for household-scale sanitation improvements (Briscoe, 1994 and 1995; Jagannathan, 1994; Bakalian, 1994; Watson, 1995).
- At the project level, the economic benefits of improved water and sanitation can be substantial. Reductions in time (especially of women) spent every day to fetch water, and reductions in household expenditures on purchasing water or on fuel with which to boil contaminated water, are some obvious benefits (Brookshire and Whittington, 1993; Whittington, 1994; World Bank, 1993b).

  Accompanying declines in incidence of water-related illnesses and diseases (more than 4 million deaths occur each year from diarrhoea alone) can free scarce public resources for alternative uses. Improving the physical environment in and around the home could also motivate residents to clean, beautify and upgrade their immediate neighbourhoods (Satterthwaite, 1993).
- In most urban centres, poorest groups face the most serious environmental hazards and the least possibility of avoiding them or receiving treatment to limit their health impact (Leitmann, 1995a and 1995b).
- There is a need for integration of water and sanitation with other efforts to reach the same project objectives. Thus water and sanitation must be integrated with the provision of solid waste disposal, roads, stormwater drainage, flood prevention, education in water and sanitation use, primary health care, education in general health care, shelter upgrading, nutrition improvements and opportunities for earning income (this list is not exhaustive) (Bartone et al., 1994).
- People demand, and are willing to pay for, a progression of environmental services as they move up the socio-economic ladder. For example, in respect of water and sanitation services and services complementary thereto:
  - The first environmental priority of a dweller in an informal settlement is to secure an adequate water supply at reasonable cost. The demand is for **quantity** of water, as in assurance of supply, and not having to walk too far to fetch it. This is soon followed by the demand to secure a private, convenient, and sanitary place for defacation.
  - Success in meeting these primary needs gives rise to a second generation of demands. One example is for removal of wastewater from the household, then from the neighbourhood, and finally from the city. Another example is that, the **quantity** of water supplied being satisfactory, the demand grows for improved **quality**.
  - Success in this gives rise to yet a third generation of demands: for the protection of the green environment, *inter alia* from the degrading effects of large amounts of waterborne waste (Briscoe, 1994; Leitmann, 1994).
- Governments tend to base their expenditure on water and sanitation on political and social considerations rather than on purely economic criteria. In many countries, this has led to heavy dependence on centralised command and control. The result has often (but by no means always) been unreliable projects that produce services that do not meet consumers' needs and for which they are unwilling to pay. The absence of financial discipline and accountability for performance, along with political interference in decisions about allocations and pricing, are reflected in a litany of problems that often include: inefficient operations, inadequate maintenance, financial losses, and unreliable service delivery (World Bank, 1993b; Serageldin, 1994; Garn, 1994; Leitmann, 1994).
- Disparity in access is generally aggravated by subsidies being applied in an insufficiently discriminating manner. As a result, many subsidies on water or sanitation do not reach the lower-income groups for which they are intended.

  Moreover, where such subsidies take the shape of water and sanitation provision at price levels that are below provision costs, the financial sustainability of the system is placed at risk. This adversely affects network extension into areas presently unserved or not adequately served, as well as the operation and maintenance of the existing network (Cairncross, 1992; Serageldin, 1994; Jagannathan, 1994).
- While not denying the importance of equity and the need to provide all people with basic water and sanitation, the international agencies emphasise closer consideration of cost and price issues, of affordability and willingness to pay, and of incentives both for performance by providers and for efficiency by users (Jagannathan, 1994).
- Essential elements in the above are efficient billing and revenue collection, the regular uprating of tariffs, and the penalising of defaulters - together with an efficient and equitable welfare support system for the very poor (Davey, 1993; Fox, 1994).

Objectives of a programme, and means of implementing the programme

On the evidence of the international agency experience, it is vital that the objectives of a water and sanitation programme, and

means of implementing this programme, are considered with care.

The objectives are invariably to obtain, primarily through the built environment, health benefits, security and social requirement benefits, and convenience and status benefits. The means must be considered in the light of circumstances - these circumstances include (examples only): other complementary projects that are under way affecting the same communities, the income of the communities, and the technological difficulties.

Levels of service for housing and infrastructure reflect differing costs, risks and benefits, and the various roleplayers' assessment of these. However, there is confusion between objectives and means. Whilst health benefits are often used to justify investments, there is seldom evidence to suggest "what benefit" accrues from "what investment". As time passes and governments and development professionals learn (sometimes by successes, but mostly by failures), there is a tendency for levels of service to be raised. This does not necessarily mean that previous "lower" levels are "wrong", but simply that they carry a higher risk in health and safety terms, or maybe only that they are less convenient to users. Even high levels of service, for all their high cost, do not free communities from all risk.

The means of infrastructure provision should be more consistently related to the weighting given to each of the diverse objectives (e.g. health benefits as opposed to convenience benefits). The resources to address all objectives are seldom sufficient, and it will invariably be found that there must be trade-offs between objectives. Meeting the objectives can only be optimised - it is highly unlikely that they can all be satisfied.

Conclusions

Thus, while the performance of the water and sanitation sector in many developing countries remains less than satisfactory, cumulative experience has led to the following broad consensus, among most international agencies active in the sector, concerning key aspects of water and sanitation development:

- The vast majority of the fundamental environmental problems facing poor communities in both urban and rural areas are directly related to water and sanitation.
- Responsiveness to peoples' needs must be the basic determinant in programme and project design.
- Water must be treated as a commodity with an economic value, not as a free resource.
- Institutional reform, including decentralising management to the lowest appropriate level, is usually a prerequisite to tangible sectoral progress.

Much has been learned, from case studies, about what works in given sets of circumstances and what does not, and why. Clearly, projects and programmes must evolve from, and be tailored to, diverse individual and dynamic circumstances. And there is a broad recognition that the existing knowledge gap relating to "best practices" and an "enabling environment" must be addressed more rigorously to move from rhetoric to reality, and from policies to practice.

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