

MANAGEMENT OPTIONS

1.1 Community participation in decentralised wastewater management

The starting point for improvements in sanitation often occur at the community level where community initiatives arise from the disenfranchisement of local residents and their expectation that government service providers will not respond to their needs. This has resulted in increasing participation of civil society and community groups in the implementation of infrastructure and service delivery.

At an operational level, the primary benefits of community participation include:

Financial Benefits : community participation can enable a number of financial benefits as a result of increased community contribution towards capital investment as well as operational and maintenance costs. This may involve a financial contribution, but in some instances this may involve the community paying for all costs associated with the infrastructure. Community financing of tertiary facilities may therefore reduce the need for government finances. This has obvious benefits from the perspective of the municipal service provider and the funding agency, and can provide a powerful incentive for community participation in decentralised wastewater management

Improved operational sustainability: In principle, community-planned and managed schemes are more responsive to local demands, delivering the services that people want and for which they are prepared to pay. Community participation results in a greater sense of 'ownership' amongst the community which may result in operational benefits as local residents take greater care for maintaining the infrastructure. Therefore, they are less likely to suffer from the problems related to a lack of sense of ownership and responsibility for operation and maintenance which are common in externally initiated projects.

Empowerment : Effective community participation in service delivery can result in a shift in the existing power relations between the poor community and 'external' actors including municipality, service operators, donors, and NGOs (Swyngedouw, 1995). In particular, this may encourage women and marginalised groups to become more involved in the decision-making process (Plummer, 1999).

Box 1.1 describes a pilot project in Baldia, Pakistan that involved the promotion of on-plot sanitation through the motivation of the local community. This provides an example of the importance of gender issues in the development process and the role of women in community-based sanitation.

Box 1.1 Baldia soakpit pilot project, Pakistan

The Baldia soakpit pilot project was a community-based sanitation project carried out in a low-income urban area in Karachi, Pakistan between 1979 and 1986. During the discussions on sanitation, it became clear that most women were illiterate and particular emphasis was placed upon hygiene education and sanitation promotion directed towards women and also towards children via a home schooling programme. Emphasis was then placed upon the role of women in the local communities and to promote their involvement and motivation for sanitation. Once the demand for improved sanitation had been stimulated, the soakpit technology used in the project was developed during experiments with the different designs, which were developed jointly by the sanitation committees, the masons and the technical advisor. However, within Baldia and elsewhere, people expressed their dissatisfaction with the open drainage system and, as result, other projects using a similar community-based approach towards sanitation have subsequently used sewerage for excreta and wastewater disposal.

(Bakhteari and Wegelin-Schuringa, 1992)

Box 1.2 describes a conventional project-based approach towards community participation from Indonesia. The example illustrates the benefits of consultation and community involvement in the planning process for improved operational sustainability.

Box 1.2 Community planning for wastewater management in Indonesia

Due to a deterioration of water quality in Lake Toba in Indonesia caused by discharge of untreated wastewater, combined with a lack of social understanding and acceptance of the existing wastewater treatment system, a project was designed to promote the importance of households connecting to the centralised infrastructure and to mobilise the community to participate in dealing with pollution from untreated waste water. A program of social marketing was proposed which included hiring and training of local environmental NGO staff members to implement the program. Learning from past failures of projects aimed at changing people's habits through external public awareness campaigns, this project is geared towards utilising experiences learned within another community in Malang, Indonesia who were motivated to install a simple inexpensive collection and treatment system. The approach towards community consensus and participatory decision-making has proved to improve the cost effectiveness and sustainability of the infrastructure and facilities. Successful completion of this project will allow it to serve as a model for future similar projects in the Lake Toba area and throughout Indonesia.

(Haryatiningsih, 1999)

Box 1.3 describes an example from Vietnam describing the awareness of the problems of the poor wastewater management and the willingness to take action to reduce the problems. However, constraints to local collective action were identified relating to the time required to participate in decision-making and the deficiencies in legislation relating to ownership of community infrastructure.

Box 1.3 Collective action and sanitation cooperatives in Hanoi, Vietnam

A household survey in Hanoi found that most people were concerned about pollution in their area created from the poor management of wastewater and septage. However, there is little awareness of how a septic system should be emptied and residents are not aware of the environmental impacts of disposal of untreated septage. As a cheaper alternative to emptying the septic tanks, a bio-powder is being used by householders to reduce the biomass accumulation in the septic tanks. The survey indicated that there is a general feeling that it is not within the power of individuals to change the situation and that concerted, collective action is necessary. The most important finding from the research was that it is possible to improve the sanitation infrastructure in Hanoi by utilising the social infrastructure already in place. However, this needs to be supported by the promotion of sanitation cooperatives accompanied by an awareness programme to promote the need to improve the sanitation situation and improve knowledge about the benefits of collective action.

(Fink, 2001)

1.2 Community management in decentralised wastewater management

Lammerink and Bolt (2002) provide a comprehensive overview of the role of community based groups and organisations in the planning, delivery, in particular the management of water supply and sanitation services which they argue from various field studies and experiences, that a number of key lessons have emerged, which show that community management (IRC, 1997) goes beyond community participation, and equips communities to take charge of their own water supply improvements. The shift from community participation to community management is indicative of an important and challenging transformation of perspective in the water sector. Rather than simply being a form of 'super-participation', community management may instead be seen as a major vehicle for transforming the basis of basic service provision from a top-down to a partnership approach.

The functions to be performed by local management organisations can vary considerably, depending upon the agreed division of responsibility between the support organisation and the community. Building the capacity of communities to undertake these responsibilities is seen as a major support task for organisations. Apart from an adequate skills base, local management organisations also require proper recognition and legitimate authority to perform their functions. A community management approach implies that far greater responsibility for operation and maintenance will fall on the shoulders of the users.

Women, as well as men, can play an important role in keeping systems in good working order, and often play decisive and indispensable roles in ensuring the success of water improvement programmes. Women are capable of taking responsibility for complex technologies, finances and basic care of water resources. The relationship between management authority and control over resources may help to further strengthen the role of women. However, in many societies, positions of authority are reserved for men. If greater recognition is given to communities as managers, men may be more inclined to keep such positions for themselves. As community involvement grows, a gender perspective is even more essential to prevent men from securing a dominant, managerial role and women a dependent role in an area where they formerly enjoyed considerable independence and responsibility.

Lammerink and Bolt (2002) cite McCommon et al. (1990) who previously define the three basic components of community management as follows:

- *Responsibility:* The community takes on the ownership and attendant obligations of the system.
- *Authority:* The community has the legitimate right to make decisions regarding the system on behalf of the users.
- *Control:* The community is able to determine the outcome and to carry out its decisions.

However, this involves long-term and changing partnerships between communities and support agencies, and strengthening the capacity of each partner and enabling their combined resources to be used more effectively. This may require a substantial shift in the perceived and actual roles of different stakeholders and a process of negotiation

and mediation to ensure that each group is fully conversant with the agreements that have been made.

This process can involve a considerable amount of time it cannot be assumed will be successful unless carefully monitored and often the assistance of a specialist to facilitate the process will be necessary and also to provide technical assistance to stakeholders when responsibilities are transferred. For instance, this may mean a new role for support organisations as facilitators rather than providers, demanding new skills and offering greater opportunities and also that agencies have to adapt their pace of work to that of the community and make an effort to understand communities.

At the same time, communities need to develop an interest to collaborate with government agencies, and develop new skills for operation and maintenance tasks, as well as managerial responsibility for cost recovery. Where there is a new manager of financial resources there is always a possibility that the participatory process will be overrun with those more powerful members of the community who have a vested interest to run the service with a profit orientated objective.

Unlike in water supply, there are relatively few examples of formally planned and implemented community-managed wastewater schemes, except where these are the focus of pilot initiatives, but in many instances there are informal systems in operation especially where there is a demand for wastewater reuse. Formal government institutions generally overlook this within the design of wastewater systems and, as a result, infrastructure is not designed in a way in which the community can easily provide farmers with the wastewater that they reuse without causing interference to the structural design which may cause operation problems.

1.3 Role of non-governmental organisations

The involvement of non-governmental organisations (NGOs) has been important in promoting a demand responsive and participatory approach and the role of NGOs is particularly important in this process of engaging with communities. According to UNCHS/CityNet (1997), NGOs in many cities have successfully involved themselves in people's development processes and developed an expertise in this field. In relation to infrastructure provision, local and international NGOs play a key role in assisting communities develop their basic services (Choguill, 1997). The successes of NGOs in this process have been widely acknowledged and have had considerable influence upon government policy and upon the design of development projects, notably those funded by international assistance.

NGOs may act as intermediaries to improve the flow of communication and broker agreements between communities and local government authorities. The initiation of a dialogue between communities and local authorities may be sufficient to initiate the process of development and translate government policy to communities. NGOs may also offer technical assistance and/or micro-credit lending to households for investments in improved sanitation. An example of an initiative, which involves NGOs in the development and promotion of decentralised wastewater and faecal sludge collection system, is provided by the communal toilet facilities in Pune which is described in Box 1.5

Box 1.5 NGO and community management of communal sanitation facilities - Pune

A survey carried out in Pune, India in the mid 1990s, at the request of the then Municipal Commissioner, revealed a requirement for 9700 toilet 'seats' in the slum areas of the city. Although 6500 'seats' already existed, most had fallen into disrepair and were in poor condition. In 1999, the Municipal Corporation embarked on an ambitious scheme to construct 271 new toilet blocks, providing a total of 5000 new 'seats'. The scheme is designed to provide one 'seat' for 50 people. Responsibility for implementing and managing toilet blocks has been subcontracted to various NGOs. In the first phase, the only contractor was Sulabh International. Seven NGOs have been contracted to work on the second phase of the programme. The Municipal Corporation bears the cost of construction work while the NGOs are required to implement schemes and manage the facilities, carrying out all maintenance work and charging users on a 'pay for use' basis, for a period of 30 years. The designs adopted vary, depending on local conditions. Where possible, toilet blocks are connected to the city sewers. In most cases, each family pays Rs. 10 per month for using the toilet facilities and a further Rs. 5 per month for using the adjacent washing facilities.

(GHK International, 2001)

One example is provided by an initiative in the village of Yoff, on the outskirts of Dakar in Senegal, where the village association APECSY is working, in cooperation with the NGO CRESP Senegal, to create promote a sustainable strategy for environmental sanitation focussing on the capacity of the local community to manage the systems (see Box 1.6)

Box 1.6 Training in Yoff, Senegal

The sanitation system developed for as part of its programme, involves a pilot Cite Ecologique to house about 1000 people which involves separate disposal of faecal wastes and sullage water. The sullage water is treated using reedbeds, and excreta is managed using either dry toilets with urine diversion or septic tanks. These facilities have been provided at the household level or alternatively as communal facilities to be managed by groups of residents. Capacity building for decentralised wastewater management in Yoff, involved training a core group to carry out the project and training residents in maintenance and operations of wastewater collection and disposal infrastructure. The activities also involved liaison with community groups and leaders with the objective to promote a core group of people with a broad foundation in an integrated approach to sustainable sanitation to expand a network of community-based and operated small-scale wastewater treatment systems. The training involved awareness-raising, management development and transfer of technological skills. All participants were Yoffois, and several were active members of the CBO that has been supporting the project overall. The residents' training consisted of on-site, hands-on training for maintenance, and several meetings on management. Although the construction of the infrastructure was seen to be important, it was the training of the core group that generated the most widespread enthusiasm for improving the environmental health conditions related to wastewater collection, treatment and disposal.

Weisburd 2002 (personal communication)

1.4 Private sector management of decentralised wastewater systems

Private sector participation in the provision of infrastructure and services can involve a wide range of options associated with construction, management, and operation and maintenance (Franceys, 1997). A number of reasons for involving the private sector in infrastructure provision are introduced and briefly discussed below.

Private sector participation is likely to bring about efficiency gains when political pressures to reduce unemployment result in unnecessarily high staffing levels within government departments. Private sector organisations may be more efficient than those in the public sector as they are not bound by bureaucratic systems and rigid rules and regulations.

Private sector organisations may also have access to specialist skills that are not available within government. The private sector may be particularly effective in responding to the needs of institutions and households in providing services for cleaning on-site sanitation. However, it should be noted that much informal private sector activity often leaves much to be desired in terms of both reliability and public health.

Therefore, private sector organisations have more flexibility to respond to problems as they arise and to adjust their operations to a changing situation. It is argued that locally-based private sector entrepreneurs are well-positioned to respond to local demand and provide services that the poor can afford (Brook-Cowen and Tynan, 1999).

One of the most common forms of private sector involvement in tertiary infrastructure provision is for construction. Contracts between a government department or agency and a private contractor follow standard government norms and procedures. Civil society groups and organisations also engage contractors, which are often local for-profit micro-enterprises, usually with rather less formal contract documentation. This suggests that there is scope for increased involvement of small local contractors and micro-entrepreneurs in decentralised wastewater management.

Solo (1999) describes the involvement of small-scale entrepreneurs in the urban water and sanitation market in Cotonou in West Africa which illustrates how a private company can manage to provide a valuable service in latrine emptying whilst maintaining a profit. There is considerable potential for similar arrangements throughout Asia provided that the institutional and policy frameworks are developed to promote these services in a way that avoids the problems of unregulated private sector operations as described in Box 1.7.

Box 1.7 Private sector operations in faecal sludge management in Vietnam

The key issues of human excreta management in Hanoi are poor maintenance of toilets; no standards for installation of toilets, an unregulated private sector for management and inadequate disposal facilities. The typical sanitation facilities are on-site and consist of double-vault toilets, septic tanks, or bucket toilets depending on the economic conditions of the households. The collection work is manual for bucket and double-vault toilets and by vehicles with vacuum pumps for septic tanks.

The responsibility for faecal sludge management is divided between the City Authority, the Urban Environmental Company (URENCO) and private entrepreneurs, but due to inadequate human resources for the sector and bureaucratic planning, the private sector involvement is unregulated. The uncontrolled discharge of faecal sludge has a negative impact on the environment and reuse of excreta as a soil conditioner plus fertiliser without adequate treatment constitutes a high risk for public health. (Kim Thai, N.T., 2001)

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