Decentralized Wastewater Management E-conference

This e-conference, which took place in June 2004, formed part of a research project entitled 'Capacity Building for Effective Decentralized Wastewater Management', funded by the DFID as part of its Knowledge and Research Programme. The project aims to promote effective strategies for managing wastewater and faecal sludges, with a particular emphasis on the needs of poor urban and peri-urban communities.

The first week of the conference consisted of a review of the existing situation regarding the management of wastewater. Although, there are successful examples of conventional wastewater systems, a number of participants highlighted that large-scale wastewater treatment plants (many of which are generously sponsored by international donor agencies) are not always operated and maintained effectively. In peri-urban areas outside of the boundaries of the areas of service delivery by government agencies, large-scale interventions are unlikely and individual households build their own systems and are responsible for maintenance. In addition, participants pointed out that centralized systems are not necessarily compatible with local demands for reuse because of high salinity, low nutrient value and high pathogen concentrations in the effluents.

Decentralized technologies are often more flexible: they can be introduced in areas that have already been developed but that lack infrastructure for collection and disposal of wastewater. This is particularly important in developing countries where residents have often already invested household resources into local systems for collection, drainage and disposal of wastewater, but this infrastructure is not working effectively. This has implications for moving from household-level systems, which may not be appropriate in urban areas, to systems requiring co-operation between a number of households.

Various management options were explored in the second week, and a number of contributors pointed to the greater flexibility possible with decentralized approaches in assigning roles and responsibilities for various activities. This can be mutually beneficial for local-level organizations involved in service provision as well as the centralized sector agencies. Advantages include greater householder ownership and control over decision-making processes and, when the demand for improvements is mobilized and articulated, this may enable easier access to support from external agencies and possibly funding through banks or government grants.

The role of the water-user committee as the organization responsible for implementing and managing a decentralized wastewater system was discussed. One of the most important responsibilities of the users' committee is to collect the funds for the operation and maintenance of the scheme and this can promote greater local accountability. However, it is important that the responsibilities and obligations of members of local co-operatives are clearly defined as membership rests with the community and not individuals. Decentralization can also offer potential for private sector participation, but at present there are few indications that the private sector is interested in wastewater management opportunities, because of the difficulties of making these profitable at present.

The focus of week three was on issues of sustainability, replication and capacity building. A number of participants referred to technologies for the collection and treatment of wastewater and faecal sludge that are compatible with decentralized wastewater systems using local contractors and indigenous skills. However, poor design and construction, with no monitoring of operational performance, result in varying levels of efficiency in the majority of cases.

The lack of understanding of such technologies was probably due to the fact that most engineers have been educated either in western universities or in local universities with curricula duplicated from western universities. Therefore, engineers in government agencies are generally reluctant to promote (or even accept) technologies that are appropriate to their situation and this both affects the replicability of appropriate technologies and highlights the importance of capacity building initiatives to overcome this barrier.

Although decentralized technologies generally require less routine maintenance, the operational efficiency tends to deteriorate over a period of time. Therefore, a local organization is needed to manage the system. Ultimately, the quality of operation and maintenance depends upon who is responsible for managing the facility and what their interest is in the proper operation of the system. Good operation and maintenance is directly linked to perceived benefits, which can be related to the improvements in the local environment or to economic gains related to wastewater reuse.

Responding to the discussions in week four relating to the development of an effective policy framework, a number of contributors referred either to a lack of appropriate policies or to weak policy frameworks. In many countries sanitation and wastewater management are not high priorities for government officials. This may be due to the fact that politicians and government officials are ignoring calls for improvements, or that constituents are not lobbying them. Therefore, there is a need for greater advocacy to promote the importance of improved practices and investments in the sector.

Complementary to this is the need for the development of an appropriate set of policies and a centralized regulatory framework to regulate and co-ordinate decentralized activities in the sector. An important point was raised: regulators' perceptions of system requirements may be different from users. This point suggests a need for greater consultation and participation of stakeholders in the setting of priorities, objectives and the level of improvement that is required.

Dr Jonathan Parkinson is a visiting researcher at the Federal University of Goiás, Goiânia in Brazil (parkinsonj@bigfoot.com), and is working with GHK (www.ghkint.com) as a consultant on this DFID-funded research project.

A more detailed report and a full archive of all the submissions are available from the internet at www.jiscmail.ac.uk/lists/wastewater-management.html.