



Institutional incentives and urban sanitation

Barbara Evans, India

DURING THE WATER and Sanitation Decade (1980 - 1990), many lessons were learnt about the benefits of user involvement in sustainable projects, and the importance of correct incentives in positive behavioural change. Two key principles emerged at the end of the decade, and were endorsed at international fora, such as Dublin and Nordwijk. The principles are firstly, that water, and its corollary sanitation, are an economic, as well as a social good and should be managed as such; secondly, that water and sanitation should be managed at the lowest appropriate level, with users involved in the planning and implementation of projects.

In response to this many donors, NGOs and to some extent governments are currently reviewing the experiences of community involvement. They are attempting to design programmes that build on the strengths of the community and focus on recovering at least part of the costs of production of infrastructure from the community who benefits from it.

The purpose of this paper is to briefly review some experiences of the process of joint government and community finance and operation of urban sanitation in low income urban communities; to consider what potential it has for reducing the costs of sanitation provision (thus increasing the chances of sustainable outcomes); and discuss the potential constraints to the establishment of a new institutional framework, integrating the community further into the process of sanitation administration and production.

For the purposes of this paper urban sanitation, and specifically piped sewerage has been considered. While much of the conceptual framework is independent of technology choice, a consideration of a piped sewerage network, is useful because it is, by implication, a consideration of a situation where an Executive Agency of Government—for example as a municipal corporation or water board, has a clear role to play in external (or primary) investments, such as main sewers and sewage treatment plants.

The paper builds on the concept of Internal (household and lane) and External (trunk and treatment) development first established by the Orangi Pilot Project in Pakistan, where the community takes responsibility for the Internal development—including planning, design, construction, operation and maintenance—and arrange for the financing themselves. External development remains the responsibility of the Executive Agency of Government (Akhter Hameed Khan: 1994: 12).

Community participation, collective action

First, let us assume that Internal development can take place independent of External development. If the community can significantly lower the costs of administration and production of sanitation internally then the chances of achieving a net flow of benefits must rise. This depends on the potential for collective action within the community.

Robert Wade, among others, has done valuable work identifying the conditions under which joint management of resources can be successful (Wade: 1987). Wade convincingly argues that the success of *rural* common property regimes depends on five factors associated with the resource and the user group: a small and clearly defined resource; a close physical proximity between the resource and users and a high level of dependence on the resource; a small and defined group of users, having established “arrangements for discussing common problems” and with the relative balance of power in the hands of sub-groups favouring communal action; high “noticeability” of cheating on arrangements; and high costs of “exclusion technology” (Wade: 1987: 231-2). What relevance do these factors have to urban sanitation and on balance do they mitigate in favour of successful collective action?

The “resource” which we are considering is the stream of benefits which arise from the capital stock of infrastructure (Ostrom *et al.*: 1993: 85). The stream of benefits from sanitation may not be well defined and externalities may blur the boundary of benefits. Concerns surrounding employment, housing and debt may far outweigh perceptions about the need for sanitation.

The group of users *will* be geographically well defined, but the existence of power structures and mechanisms for consultation cannot be guaranteed. In the general case the most useful conclusion to be drawn is that the more homogeneous the community, the greater are the chances of a successful common property regime developing.

“Noticeability” is related to the characteristics of both the resource and the user group. It will vary at different stages of production. It may, for example, be easier to shirk on a monthly cleaning rota than it would be to avoid contributing prearranged labour or time to initial construction when the whole group may be more aware of the actions of each individual.

“Exclusion technology” in Wade’s analysis, is important where individuals can gain control over a “privatised” stream of benefits by excluding other users. In

exceptional cases, where power is highly concentrated, the issue of exploitative privatisation within the community may become important but generally, in view of the poorly defined public benefits of sanitation and the need for all users to be involved in order to realise the full benefit stream, individuals would have few incentives to gain control of a scheme.

In summary then, the nature of the resource and problems of low noticeability in operation and maintenance will generally mitigate against successful collective action in the community. The potential for successful collective action will then rest on the extent to which existing and potential structures within the community can override these factors.

Administration and production

Lowering the costs

Let us assume, for the moment, that conditions for collective action do exist, and that a group of householders formed a user group to provide a sanitation service for themselves. What advantages would such a group have?

On the administration side both transformation and transaction costs should fall. The key features of such a user group should be accountability and adaptability. The group must be small enough to ensure good communication and low cost monitoring, bringing down coordination costs.

One of the strengths of the Orangi Pilot Project is its use of the "lane" as the organisational unit in the community, thus guaranteeing a geographically defined group, and increasing the potential for self monitoring. Good time and place information will be more readily available to the group than it would be, for example, to officials from the Executive Agency of the Government.

The group may be prepared to experiment with low cost solutions because they are not limited by technical preconceptions. However, there will almost certainly be a shortfall of scientific knowledge. It is important not to underestimate the costs of providing necessary technical assistance. OPP, for example, invested twelve months in Research and Extension work in Orangi prior to the implementation of any community sanitation. The cost of this was carried not by the community but by external commercial institutions (Akhter Hameed Khan: 1995: 1,7). Even then maintenance and supervision problems persisted (Abbott: 1985: 84).

The extent to which community financing is an adequate mechanism for establishing citizen preferences and willingness to pay is disputable and requires a great deal of further study. In particular, post project reviews are needed, to establish to what extent pre-project willingness to pay, established through whatever mechanism, is reflected in post-project payment for services. Intuitively, it seems that the community itself would be the most effective agent for establishing demand, but effective mechanisms for achieving this are yet to be rigorously proved.

Finally, we turn to production. In Orangi, innovative designs and the elimination of contractors is estimated to have brought down the transformation costs of production to around one third of the cost of a conventional system (*ibid*: 69) excluding External development. Savings of around Rs 100 per metre of sewerage have been achieved (Rs 100 = £2 (1995 prices)) . However, both transformation and transaction costs will be much higher to the community than under the centralised system. The impact of cash payments on the community is hard to establish.

Under the OPP programme in Orangi it was estimated that the average investment of each household in the sanitation system was Rs 1,000 compared with an average investment of Rs 20 -25,000 in the house itself (i.e. investment in sanitation is worth between 4 and 5 percent of the value of the house). OPP estimate this to be equal to the average monthly income per household (Akhter Hameed Khan: 1995: 7-8). While these figures suggest that the investment in sanitation is manageable, they fail to capture the costs of contributions in kind and the opportunity costs of time devoted to the programme. When these are included the real costs of community provision are likely to be significantly higher.

The use of community members in operation and maintenance may also be expected to bring down costs and increase effectiveness. However, community involvement in operation and maintenance may be harder to mobilise, principally because the benefits of good maintenance are even less tangible to the community than the benefits of the original installation. Regular maintenance, carried out periodically by selected group members, is harder to monitor than contributions to construction— less visible and harder to physically check.

Evidence from Orangi during the early years of the programme suggests that maintenance was often "crisis management" rather than good routine preventative maintenance. The fact that a minority of groups manage effective organisation of maintenance only serves to highlight that in many other cases the institutional foundations for a sustainable system have not been adequately laid (Abbott: 1985: 99).

Internal and external development

So far we have been looking at the potential for Internal development which is independent of External development. However, in many urban situations one is dependant upon the other to function satisfactorily. What are the incentives for the actors currently involved in sanitation provision to coordinate with the community, and what would the cost be?

The use of community financing will bring down the transformation costs of production for the Government. This is one of the principal theoretical underpinnings of such policy. However, it is important to recognise that a corresponding rise in transaction costs is likely to occur, both on the administration and production sides.

There are few examples of successful attempts to coordinate Internal community financed development with publicly financed External development. Nonetheless some lessons can be drawn from the available evidence. In the Urban Basic Services Project in Sukkur, Pakistan, the OPP model has been adopted under a programme funded by UNICEF. This programme commenced in 1988 and involves three Executive Agencies of the government, one international donor organisation, one consultant, the community and two new organisational entities, a site office and a steering committee, which were set up as part of the coordination effort (Arif Hasan: 1994: 16).

UNICEF provided the majority of the funds for External development and funded training for government staff, both for existing postholders and for new posts that were created as part of the project.

Reports from the UBS project highlight the lengthy procedures required to establish working relationships between the various actors. It was two years before an agreement was signed on the methods to be adopted in the project. Poor coordination between Executive Agencies proved a major stumbling block even before the project commenced.

OPP, who acted as consultant to the project through the OPP Research and Training Institution, note that "various government organisations are not aware of each others plans and responsibilities [nor] of the funds that are available to their sister organisations" (*ibid.*: 33).

Lengthy negotiations between Executive Agencies have delayed External development after commencement of the project, jeopardising the development of community groups for Internal development. In some cases money collected for Internal works was returned to residents because of delays on the Government side (*ibid.*: 26-9).

Conclusion

In the short term we have seen that the transaction costs, and therefore the total costs, of sanitation provision jointly with the community may be high. Nonetheless the presence of external funding may be catalytic in overcoming this. In the longer term these transaction costs could be brought down if the concept of coordinated development became part of mainstream government policy. Institutional arrangements could then be established, staff trained and many of the one-off costs of a project such as the Sukkur UBS would disappear.

The coordination of investments from the community and the government is often proposed, with the twin objectives of increasing the resources available for sanitation provision and increasing the chances of achieving sustainable infrastructure. The success of such an approach is predicated on the assumption that the community contains the potential for collective action.

Proponents of these policies often fail to analyse the high costs of coordinating such investments. Most importantly of all they may underestimate the structures that exist in society, in Executive Agencies and within the

Community, which will resist institutional changes based on the coordinated provision of services.

Critically, what is required is that programmes designed within the concept of partnership between community and government should be carefully monitored—to allow for a clear evaluation when things appear to go wrong. The concepts behind the approach are sound; what is needed now is to develop a clear understanding of the constraints to successful implementation—so that programme design can be steadily improved based on growing experience in real project situations.

Based on the above analysis it will be important in future programmes to develop systems to monitor total costs to all stakeholders and to acknowledge constraints. Indicators to be monitored might include: the nature of the community (degree of homogeneity, power structures) and its relationship to the Executive Agency of Government; administration (transactions and coordination) costs of intra community negotiations; administration costs of negotiations between community and the External Agency of Government; manner in which willingness to pay for services (demand) is established, and how this relates to post programme performance; costs of production of services both to the community and to the government; and evidence of systemic resistance to the partnership arrangement.

Notes

Here Administration refers to "decisions made through public choice mechanisms" about: the levels, quantity and quality of services; the degree of regulation; the production and financing arrangements; and monitoring performance. Administration cost includes both Transactions and Coordination costs. Production refers to "the more technical process of transforming inputs into outputs—making a product or in many cases rendering a service." (Ostrom *et al.*: 1993: 74).

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