

4 Subsidy and sustainability in urban sanitation: The case of Quetta Katchi Abadis Environment Management Programme 1997 - 2003

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Abstract

Urbanisation and inadequate institutional capacities have hindered the development of an adequate sanitation system in Quetta, Pakistan's 12th largest city. This can cause chronic problems in the city's 47 Katchi Abadis (informal settlements).

Between 1997 and 2003, the Netherlands Government funded a local environmental management programme which involved a partnership between city governments, community and non-governmental organisations.

This paper offers more details about the programme, specifically:

- *Institutional framework*

- *Technology options*
- *Implementation arrangements*
- *Hygiene promotion activities*
- *Cost and tenure issues.*

A survey conducted in December 2007, after the project had finished, details the outcomes of the programme. Across the range of indicators adopted the outcomes are generally positive. This document also outlines factors in the success of the programme as well as some of the constraints faced, challenges that need to be confronted and issues for future scaling up.

Context

Quetta *Katchi Abadis* Environment Management Programme (QKAEMP) was based on the principles of self-help environmental management by communities. Residents of low-income settlements were mobilized by a number of support organisations that shared a common methodology for lane sanitation. They worked independently in 47 different *Katchi Abadis* (informal settlements) across Quetta city.

What were the effects and impacts of the programme?

The monitoring and evaluation unit of PIEDAR designed and supervised the second post-project evaluation of QKAEMP, four years after its completion. The primary objective was to find out whether the sanitation and health benefits of the project were being sustained on a household and community scale. Another was to investigate what other effects could be attributed to the programme.

To evaluate the programme, a sample survey was undertaken. It comprised interviews of randomly selected beneficiary households. Physical observations in the intervention areas were also made.

Background

Quetta, the capital of Balochistan Province, is the twelfth most populous city of Pakistan (according to the 1998 Census, it had a population of 639,000). Owing to rapid population growth and inadequate institutional capacities to plan and provide services, nearly half the city's inhabitants live in informal settlements, locally known as *Katchi Abadis* (KAs). The settlements have grown organically, making the provision of infrastructure a challenge for Local Government and communities.

Most of the KAs have been officially incorporated within the jurisdiction of City District Government (CDG) Quetta, and many now have piped water. However CDG has not been able to provide sanitation infrastructure to these KAs. Because of the increase in population and the use of water per capita, effluents have also increased without any provision for their disposal. This poses severe health hazards from faecal - and water - borne diseases.

Governance, especially the law and order situation, in Quetta was unsatisfactory at the start and became more adverse over the duration of the project. In 1994, the Netherlands Government abandoned a previous water supply and sanitation project because of corruption in the government agency it was working with.

Quetta was and remains a frontier city in the international war on terror. An elected Local Government with enhanced responsibilities emerged as a result of Local Government Ordinance in 2001. But it lacked experience and capacity for enabling community-based development.

A coalition Provincial Government, formed in alliance with religious parties, came into power in 2002, the penultimate year of the project. The Minister for Local Government was strongly opposed to the involvement of women in civic life or in any activity beyond their own homes.

Implementation

Introduction to actors

The Royal Netherlands Embassy (RNE) in Islamabad executed the Quetta *Katchi Abadis* Environmental Management Programme (QKAEMP) from November 1997 to December 2003. It had two contracts with PIEDAR, who acted as a technical

advisor (TA) and M/s Ferguson Associates (Pvt) Limited, who were fund managers (FM).

Subsidiary memorandums of understanding established the working arrangements between TA, FM, City District Government Quetta (CDGQ), and six Quetta-based NGOs as Implementing Partners (IPs). Community Participation Agreements (CPA) between the IPs and communities living in *Katchi Abadis* governed the on-ground construction and management.

Approach

A document entitled *Quetta Katchi Abadis Environmental Management Programme* (QKAEMP, May 1997) was put together after two years of consultations in Quetta and orientation and exposure of local stakeholders to best practices for community-based sanitation across the country. It envisaged that management of the intervention would be at a community level, mobilized by a number of catalytic organisations who would share a common programme approach.

A system of matching grants was adopted to support the effort. The IPs felt that a pure self-help approach would be too great a departure from the institutional climate in Balochistan, where government and NGOs had been heavily subsidising capital and running costs.

After processing and approval of the document, QKAEMP was launched on 20 November 1997 with the following development objectives:

- To contribute towards a process of sustainable urbanisation in Quetta by creating an enabling institutional framework for promoting local organisations in low-income areas to undertake internal development.
- To institutionalise a partnership between Local Government, local NGOs, CBOs and Lane Organisations for better environmental management by promoting technical capacities and democratic decision-making among stakeholders for carrying out development work.

This systematic approach was adopted to implement QKAEMP.

A four-tier governance system was set up:

1. Annual Stakeholders Conventions were open forums for critique, suggestions and feedback from all stakeholders.
2. The Implementing Partners' Forum served as a platform for the sharing of information, mutual support and coordination at Quetta.
3. The Project Management Committee (PMC) at Quetta acted as a supervisory body for making major operational decisions as well as monitoring and reviewing physical progress.
4. A Policy Steering Committee (PSC) at Islamabad worked, during the initial years, on policy and strategic decision-making. That's until some of the functions were devolved to the PMC, while others, such as management of external monitoring, reverted to the RNE.

Social mobilisation

Social mobilisation played a key role in the programme. Guidelines were developed to streamline the process. A manual that became known as the *Seven Steps for Social Mobilisation*, was shared with all IPs and their staff members, who were often reminded of its contents.

Social organisers initially mobilized communities around hygiene and environmental issues and

assessed the willingness of each community to undertake investment in common infrastructure. Following a positive response, a survey was undertaken jointly with lane residents.

Other key steps were:

- The formation of a Lane Organisation (LO) and Women Lane Organisation (WLO).
- The signing of CPA between IP and each LO.
- A technical survey to prepare the area and ground profiles.
- Detailed designs and cost estimates.
- The opening of the LO's Bank Account.

Based on estimates, the LO was asked to raise 50% of the cost of the lane sewer. The cheque for the matching grant was released through the IP to the LO account. Six hardware items were given to each household for the construction of a pour flush latrine. The household was entirely responsible for its superstructure. LOs executed the works with the technical assistance of the IP's engineer.

Hygiene promotion

The promotion of better hygiene was an integral part of the project. Indicators for widespread awareness of the germ theory of disease and of the best hygiene practices were included among the key measures of success. The project aimed to get 85% of children aged five and over to wash their hands with soap after defecation.

Female social mobilizers demonstrated how to wash their hands with soap during visits to households in every community during the LO/WLO formation and fund raising stages.

Pro-poor provisions

City government provided an overall list of officially declared KAs. They are mostly located on private land, and comprise a range of habitation types and standards.

The TA developed indicators for categorising the KAs. The IPs identified their working areas on the basis of past outreach experiences and/or community interest from within the KA list. The TA team at Quetta checked the proposed working areas against the indicators to ensure that poor settlements (categories C and D) were selected along with a few that were marginally in Category B.

Five settlements in Category A that solicited project services were provided only with technical assistance and were required to pay the full cost of the sanitary infrastructure. Within the KAs, the poorest households contributed by providing labour for excavation and pipe laying.

QKAEMP modified its approach to working with "bottom of the pyramid poor", such as Christian and Hindu minority communities living in the slum of Shantinagar, Quetta. In this congested area, the project promoted locally managed boreholes for water supply and communal toilets. It also modified its work schedule to suit transient residents, who leave the city in winter months for livelihoods in the plains. However, after a negative initial response, QKAEMP did not persist with the attempt to promote sanitation and hygiene among the colonies of migrant tent dwellers at the fringes of the city.

TABLE 1 Housing tenure in urban Pakistan and urban Quetta (%)

Type	Urban Pakistan	Urban Quetta
Owned	67.6	54.4
Rented	23.2	35.0
Rent Free	9.2	10.6

Sources: Population and Housing Census, 1998, District Census Report, Quetta

Land tenure issues

Table 1 shows that relatively more accommodation is rented in Quetta than the national urban average. However, tenure did not emerge as a major issue in the social mobilisation process for lane sanitation in its informal settlements. Ethnicity and ethnic diversity were the key determinants. Social mobilisation was relatively easy in progressive communities, such as the Hazara. It was difficult in KAs, where conservative tribes, such as the Baloch, lived. It was most difficult in lanes where people from many ethnic groups lived together.

Project management

During QKAEMP, four Annual Stakeholders Conventions (ASCs) were held in the main auditorium and lawns of the CDGQ, traditionally in the second week of March before the start of the construction season. On each occasion, 150 to 400 men and women lane managers and committee members took part and shared their sanitation experiences with provincial health, Local Government and environment ministers.

The IP Forum met 22 times to make arrangements for common events, share ideas and experiences, and where possible, support each other's field activities in different KAs.

The PMC met 28 times to discuss technical and social issues facing the IPs in their work. It also became a forum for organisational and project policy issues. A designated IP recorded the minutes and progress was monitored every subsequent meeting.

The PSC met 16 times at Islamabad and Quetta to address policy and financial matters and issues arising from external monitoring. That's until it was wound up after August 2001.

Before the start of field activities, the technical advisor, fund manager and implementing partners jointly developed the Plan of Operation. It specified administrative arrangements, physical targets, and the schedule of activities. An Annual Work Plan (AWP) was prepared for each subsequent year in the same manner. The AWP's were submitted to RNE before October 15, so that RNE could respond to the proposed plans and release allocated budgets.

Technology/technology choices

The choice of a sanitation system for a locality depends on cultural, social, economic and technical variables. At Quetta, a hard non-porous soil, relatively high population densities and availability of nearby ravines for disposal of the effluent, led, in most cases, to the selection of a system in which solids are retained on site while the liquid is transported off-site through a small-bore sewer.

A manual, *Seven Technical Steps*, was shared with each IP. It laid out the steps for planning, designing, estimating the costs of a sewerage scheme, and constructing and maintaining it. In this, a small

diameter pipe is laid at shallow depth and low gradient. The system has the following components:

- Connection from the house to Tee-hodi (grit interceptor).
- Interceptor tank or Tee-hodi where floatable and settleable materials are temporarily stored while foul gases are emitted by a vent pipe installed at the entrance of the interceptor.
- A service line, normally a four-inch in diameter RCC or PVC pipe, connecting the interceptor to the manhole for the drainage of liquids.
- Circular manholes provided at major junctions for maintenance. These are connected to a collector main - normally a six to 15 inch diameter RCC pipe - which takes the effluent, by gravity, to the nearest ravine, open drain or trunk sewer. The depth at which the main is laid varies as a function of external street loads and environmental conditions.

The system has worked largely as it was designed. When it is needed, the Tee-hodis are opened and their contents are stirred with a stick and flushed. Stones and plastic are removed physically. The effluent is disposed off to municipal sewers, open drains and natural ravines. There is no wastewater treatment facility in any locality of Quetta.

The residents had a choice of technology. In Marriabad and Mominabad KAs, located on hillsides, they opted to cover their open drains with slabs. In congested Shantinagar, residents chose to install communal latrines.

Innovations

Communities were eager to know in advance exactly how much money they would need to spend on

the scheme since they needed to spend their households' savings on it. Accurate cost estimates became important as households were generally suspicious of and resented a second round of fundraising.

A simple, user-friendly computer programme was developed by PIEDAR to optimise the design of lane sewers and generate transparent quantities and costs. It was tested and handed over to partner organisations for their use. Any computer-literate person can easily operate the software, based on a simple Excel spreadsheet. All the IPs used this software throughout the programme period.

Given that most women were excluded from decision-making outside their houses, Women Lane Organisations were a major innovation for Quetta. The idea was introduced alongside health and hygiene training. Under QKAEMP, 181 WLOs were formed in 42 KAs. The WLOs played an effective role in raising money to pay for the scheme and in motivating the men to supervise the laying of lane sewers and installing of latrines.

QKAEMP succeeded because of its dedicated team of female social organisers, and because women

TABLE 2 Unit costs of sewers and pour flush latrines (Pakistan Rupees)

Items	Unit of Measure	Average	Range
Lane sewers (9" - 12")	Running feet	36	30 - 44
Pour flush latrines	Six items provided per latrine	854	612 - 1074

Note: Exchange rates ranged between PRs.21.4 to 26.9 per NLG and PRs.43.2 to 58.7 per US\$ during 1997-2003. Source: Economic Survey, Government of Pakistan, 2002-03, Table 8.14

worked at all levels in QKAEMP, some as team leaders, others as supervisors, trainers, finance managers, accountants, or extension workers.

Costs (hardware, software, programme overheads)

The unit costs of the lane sewer and six hardware items (pan, p-trap, connecting pipe, vent pipe, t-joint, and a bag of cement provided to each household for its latrine) during 1998 to 2003 are reproduced in Table 2. Not included are costs of the trunk sewers and the (eventual) treatment before end-disposal.

Households were required to contribute 50% of the estimated cost of the lane sewer. In most cases, the LOs divided the burden equally among the dwelling units in the lane. They decided whether to make any exceptions for the poorest households, who provided labour for the project. The share ranged from Rs.600 to Rs.2000 per household depending on how big the front of the "housing lot" was and the length and depth of the sewer. Many women said that raising the required amount had been difficult.

TABLE 3 Recall of household share paid for the sewer (December 2007)

Rupees	Frequency	%	Cumulative %
100 to 599	4	8	8
600 to 1099	11	22	30
1100 to 1599	4	8	38
1600 to 2099	1	2	40
Paid, but don't know amount	27	54	94
No response	3	6	100
Total	50	100	

In this context, it is interesting to document, after a period of four to 10 years, how much people can

remember paying for the project. Table 3 provides the results. At least 8% of respondents benefited from an internal community cross-subsidy. Some of them paid in the form of labour.

External support

The components of actual expenditure over the six years of the programme are displayed in Table 4.

TABLE 4 Financial highlights

S. No	Components	Amount	
		(PRs. Million)	%
1.	Netherlands programme costs* @ Rs.23.5/NLG	76.6	61.0
1.1	Technical Advisor (TA)	13.3	10.6
1.2	Fund Manager (FM)	18.8	15.0
1.3	Implementing Partners (IPs)	33.1	26.3
1.4	Direct Assistance (Subsidy) to Lane Organisations (Transfer Funds)	11.4	9.1
2.	Investments by Beneficiaries	23.0	18.3
3.	Investment by City Government (on street pavements)**	26.0	20.7
4.	Grand total	125.6	100.0

* Excludes payment to external monitor, WASTE Consult

** Excludes other investments by City Government related to the programme.

The Royal Netherlands Government was the sole external supporter of the project making an investment of NLG 3.2 million. The Pakistan Rupee declined from Rs.21.4 per NLG to Rs.26.9 per NLG over the duration of the project. To simplify the computation, the median year exchange rate has been used to compute the shares of RNE, City District Government, Quetta and the ultimate beneficiaries.

An important point to note is that most of the external support went into software costs. These

included technical advisory services, such as the training of staff of the IPs, fund management, social mobilisation by the IPs, supervision of procurement and construction by the LOs, and monitoring and evaluation of the programme. In fact, direct assistance to the communities amounted to only 9% of the total investment by all parties (and 15% of that by the Royal Netherlands Government).

Outcomes

The direct results of the project have been impressive. Over six years, 49 kilometres of lane sewers were laid in 315 streets located in 42 low-income wards and informal settlements across Quetta. This has helped create a more clean and healthy environment. A total of 5,273 households directly benefited from the project with an external input of around US\$1.4 million.

The average household size in urban Quetta is 8.3 people (Census, 1998) owing to joint and extended families. It is around 10.5 people (various surveys, 1998-2007) in the city's KAs. QKAEMP records show that 54,593 people or around 8% of the 1998 population of Quetta (or an estimated 16% of that residing in KAs) benefited from its interventions.

If QWSEIP, the current implementer, succeeds in meeting its targets, almost all of the population in the informal settlements of Quetta could be covered with basic sanitary services. City government has paved many of the streets, and this is an additional

TABLE 5 Pour flush latrines installed

	Frequency	%	Cumulative %
Yes	45	90	90
No	3	6	96
No response	2	4	100
Total	50	100	

benefit. Cost-effectiveness and institutional synergy are other key elements in the success.

Access and usage of toilets by and within households

TABLE 6 Condition of the pour flush latrines

	Frequency	%	Cumulative %
Clean	47	94	94
No response	3	6	100
Total	50	100	

A post-project survey was conducted during 12 to 18 December 2007. The survey team visited 50 random households in 25 lanes, where sewers had been installed under QKAEMP.¹ Staff associated with QKAEMP and others based in Quetta conducted the surveys. In addition, Local Government officials were interviewed and concerned staffs of partner NGOs were asked to recall and reflect on their experiences.

Three respondents said they had toilets from before the project, but 45 stated that their latrine had indeed been installed under the scheme (Table 5). Most agreed to show the team their latrine. Almost all the inspected latrines were in use, and were found to be “clean”, (as opposed to “filthy” or “choked”) (Table 6).

Hygiene practice by and within households

A post-project evaluation survey conducted in May 2004 found that nearly half of mothers in the intervention areas said their children washed hands with soap after using the toilet. This was significantly higher than the situation in the comparison lanes. But claims do not necessarily reflect the actual

¹ Given the objectives of the survey, a target level of error in the estimates of +/-7.5% was set, and sample size fixed accordingly.

level of practice and could be biased by training exposure.

The responses made it obvious that QKAEMP, at its closure, did not achieve its target of getting 85 % of people to regularly wash their hands at appropriate times.

It is rather surprising that 90% of respondents in December 2007 claimed they regularly washed their hands with soap. This could be validated by probing respondents, observing their behaviour and looking at whether soap is actually available. The result may be attributed to subsequent health and hygiene promotion efforts of Government, NGOs or soap companies in the private sector.

Open Defecation Free status and its validation

TABLE 7 Open faeces / 100 ft of lane

	Frequency	%	Cumulative %
Some	2	8	8
Nil	23	92	100
Total	25	100	

Researchers studied 100 feet areas in the 25 randomly selected intervention lanes and found faeces there in only two instances (Table 7). This is a most encouraging result. However, the survey was undertaken in December (2007), when open defecation is least likely in the bitter winter of Quetta.

User-reported benefits

Men and women lane managers and committee members reported nine major benefits of lane sanitation at the Annual Stakeholders Conventions:

1. Sewage disposal

2. Less smelly environment
3. Improved pedestrian access especially in winter when the frozen slush becomes slippery
4. Vehicle and goods access
5. Easier to move sick people
6. Creation of a space for social events
7. Building foundations protected from seepage
8. Protection of groundwater
9. Increase in property and rental values

Beyond toilets: sustaining paving, sewers and solid waste management

Tables 8 to 13 provide an assessment of the current state of sanitary infrastructure installed under the project. It is encouraging to note that most sewers are running some four to ten years after they were installed (Table 8).

BOX 1 Cases of community ownership

At STN Colony on Sabzal Road, residents have replaced half the manholes and tee-hodis that had broken or been displaced, and repaired the sewerage system with their own funds.

At Syed Talib Street in Marriabad and at Haji Bangul Street in Kharotabad, the residents are most happy with the process and results of QKAEMP and would like to see more community-based programmes in other sectors.

At closure in December 2003, Local Government had paved 140 streets, that is about 44 % of the 315 lanes, after sewers were laid there. Interestingly 88% of the sampled lanes are now paved (Table 9). The on-going lane paving programme can be seen as an indication of both the effective voice of

TABLE 8 Are the sewers running?

	Frequency	%	Cumulative %
Yes	22	88	88
No	3	12	100
Total	25	100	

TABLE 9 Street pavement

	Frequency	%	Cumulative %
Paved	22	88	88
Unpaved	3	12	100
Total	25	100	

TABLE 10 Are street man-hole covers intact?

	Frequency	%	Cumulative %
Intact	14	56	56
Broken	7	28	84
Not Visible	4	16	100
Total	25	100	

TABLE 11 Streets with tee-hodis intact

	Frequency	%	Cumulative %
Intact	18	72	72
Broken	6	24	96
Not Visible	1	4	100
Total	25	100	

TABLE 12 Dustbins used

	Frequency	%	Cumulative %
Yes	4	16	16
No	21	84	100
Total	25	100	

TABLE 13 Litter/100 ft of lane

	Frequency	%	Cumulative %
Few	15	60	60
Nil	10	40	100
Total	25	100	

organised citizens and the sustained level of Local Government responsiveness.

On the other hand, it is a matter of concern that in a quarter or more of the streets, some manhole covers and grit interceptors are broken (Tables 10, 11). Community rehabilitation, however, has occurred (Box 1) but unless they are replaced, sewers will be blocked, especially in view of the poor solid waste management.

It is also disappointing to note that dustbins are in place and in use in only four of the sampled streets (Table 12). So, it is not surprising that litter was found on 60% of the streets (Table 13).

Evidence of institutional and financial sustainability

Institutional sustainability is the most challenging feature for any local development programme. In the case of QKAEMP too, most of the local organisations have become dormant (Table 14) and bank accounts established for the project have closed (Table 15). The maintenance of the installed infrastructure is undertaken on a needs basis or not at all (Table 16).

Evidence of impact (hygiene, health and gender)

In May 2004, PIEDAR conducted a survey of 158 mothers who had at least one child less than two years of age. Around 80% of the mothers were from households in the QKAEMP intervention areas and were selected randomly, with strata for the IPs. A further 20% of the comprised mothers were from randomly selected households in controlled areas.

TABLE 14 Current status of Women Lane Organisation

	Frequency	%	Cumulative %
Linked	2	4	4
Isolated	48	96	100
Total	50	100	

TABLE 15 Status of bank accounts

	Frequency	%	Cumulative %
Functional	1	4	4
Closed	24	96	100
Total	25	100	

TABLE 16 Co-operation for operations and maintenance

	Frequency	%	Cumulative %
According to need	1	4	4
Non functional	13	52	56
No response	11	44	100
Total	25	100	

Mothers in the intervention areas were interviewed in their homes, as were the mothers in the unimproved KAs. Both sets of mothers took part in a survey, a common Knowledge, Attitude and Practice (KAP) one. The survey was started and completed in May 2004 when temperatures were high and diarrhoea was widespread.

The difference was clear. Nearly 59% of children in the controlled areas had suffered from diarrhoea in the previous three months compared to 32% of children in the intervention areas. The difference is statistically significant with a chi-square value of 7.34, significant at the < 0.01 level.

Results showed that hand washing with soap reduced incidences of diarrhoea. When mothers regularly washed their children's hands with soap, diarrhoea dropped to 23% (chi-square 11.01; significant <0.004), and to 24%, when children regularly washed their own hands with soap (chi-square 6.7; sig. <0.01).

The involvement of women of the KAs of Quetta in the process of sanitation implementation was a notable feature of QKAEMP. The WLO formed under QKAEMP provided a new social space for women to negotiate and make the programme more responsive to their needs.

Many WLOs played an effective role in raising savings and motivating the men of the community to supervise the laying of lane sewers and installation of pour flush latrines. Women were also actively involved in the solid waste management (SWM) component of QKAEMP. They proudly spoke about their achievements at the Annual Stakeholder Conventions.

Some of this success may be attributed to a gender-sensitive project design. Women worked at all levels in QKAEMP - as team leaders, supervisors, trainers, finance managers, accountants, and as extension workers. The project proactively sought women-led NGOs as IPs and women team leaders. It reserved posts for female social organisers and ensured their mobility. The selected entry point, sensitisation and training in health and personal hygiene, enhanced the role of women and increased the acceptability of the intervention among men. It is regrettable that the overall situation of women's rights has not improved in Quetta. Rather, it regressed during the tenure of coalition provincial government that has just completed its term of office in December 2007.

Current scale and possibilities of increasing scale

Balochistan Water and Sanitation Agency (B-WASA) has replicated key elements of QKAEMP procedures in the design of Quetta Water Supply and Environmental Improvement Programme (QWSEIP).

This aims to reach five times as many low-income households. PIEDAR has also demonstrated the approach to communities and NGOs in Punjab and North West Frontier Province.

A pool of trained engineers, social organisers, masons and skilled labourers is available in the Quetta city for providing assistance in self-help sanitation. Partner IPs retained around 30% of staff after the project, but most have joined other organisations on better salaries.

Factors of success

A two-year period of preparation (1995-97) was crucial to the success of QKAEMP. Workshops in Quetta and visits to Orangi Pilot Project, Karachi and other model sanitation interventions across the country enabled the transfer of basic knowledge and skills to city-based organisations. Their inputs into its design created a sense of ownership that was crucial.

The collaborative-competitive framework that was set up for QKAEMP's implementation enabled the six city-based IPs to learn from each others good practice. It established benchmarks for the measurement of quality, unit costs, and progress. None of the IPs had a monopoly on the project, but collectively, they could speak with a strong voice to the TA, FM and RNE. The progressive transfer of responsibilities to IPs and communities was another key factor for the success of the programme.

Under QKAEMP, residents of low-income wards and squatter settlements were mobilized to raise half the amount required for a common lane sewer. Communities made internal arrangements to

subsidise the poorest households, who provided labour in place of monetary contributions. When the savings target was accomplished, the project directly transferred the balance to a community held and operated account. The process and results were intensively monitored by national and international assessors. This transparency is a key factor in the success of QKAEMP.

Main constraints faced

Before the World Summit on Sustainable Development in 2002, it was novel to have public, private and NGO sector partnerships. QKAEMP was a partnership between Local Government, a chartered accountancy consulting firm, a number of NGOs and civil society in Quetta.

In the 1990s, it was an innovation for low-cost sanitation programmes anywhere in Pakistan to establish Women Lane Organisations. Owing to these and other novel features, the six-year experience of QKAEMP has provided many lessons to all stakeholders. Some of the most important lessons that have implications for policy and programme design are:

- QKAEMP was based on an input budgeting system. It focused attention on the quality of staff and other resources assembled by the IPs to undertake the activities to implement the programme. This was felt to be an intrusion by the IPs in their internal affairs. It also diverted attention from the real issues of quality in social mobilisation and physical implementation. The programme should have been based on an output budgeting system (OBS). A focus on measurable social and physical achievements would have resulted in more cooperative partnerships. It is possible

that an OBS may have facilitated supervisory arrangements that were more light and cost-effective.

- Direct assistance to target communities provides tangible results in a defined time frame. This leads many development support agencies to repeat a common error - a one-sided focus on project objectives. It means that not enough attention is given to the requirements of the implementing organisations and to their operational context. The risk of project results not being sustained is high (Kiggundu, 1989).
- QKAEMP largely avoided this common error, yet it could not entirely escape the dynamics of a physical programme. For some stakeholders, the achievements, in terms of running feet of sewers, became the leading indicator. The primary focus should have been on institutional development and organisational strengthening (ID/OS). This focuses more on building the capacities of involved organisations, on the relations between organisations, and the embedding of specific project activities within these organisations (Uphoff, 1986).
- Intermediate organisations would have been the primary focus of an ID/OS approach but this does not mean the target community would be distanced from the programme (Carroll, 1992). Rather ID/OS promotes a chain that builds replication capacities down to the grassroots. In the case of QKAEMP, this implies that the IPs, for example, would have been required to share with local CBOs, not just skills for solid waste management, but also techniques for social mobilisation and computer-based modelling for the design of lane sewers.

- The Government of Balochistan took two years (1997 to 1999) before allowing the Local Government in Quetta to participate in the programme. The Planning and Development Department claimed it had misplaced the 1995 to 96 files relating to its own role and its permission to the Urban Basic Services (UBS) Cell of CDGO to participate in the programme. With Government, it is important to confirm every agreement whenever a key official moves on.

The project was an experiment in a public-private and civil society partnership for a pro-poor intervention. Among the various types of public-private partnerships (PPP), it fell in the category of Management Contract, where the whole service is contracted out to a company and a NGO on fixed prices.

There are other types of PPPs, such as Concession, Joint Venture, and Build-Operate-Transfer, where the profits and risks are shared in different, perhaps more equitable and/or efficiency enhancing, ways (Lovei and Gentry, 2002; Weizsacker et al, 2006). If the needs of the 40 million plus poor people in Pakistan are to be addressed effectively and efficiently, these other models should be tested and their successes disseminated.

Challenges that could not be addressed

Heterogeneity of population and interests. Three sewers (out of the sample of 25 surveyed) are blocked. There is a problem of downstream disposal in a fourth sewer. They indicate challenges that could not be properly addressed. Masjid e Kausar Lane on Kirrani Road is ethnically very diverse. Kawish Welfare Society in Essa Nagri is a

multi-religious community. The lack of proper negotiations with the downstream landowner is hindering disposal from the sewer at Lashari Street in Karimabad. More effective negotiations and consensus building among neighbours is needed in situations of such diversity of interests and values.

Reliable water supply. QKAEMP avoided addressing the crucial issue of water supply in Quetta except at a pilot scale in a minority community. The provision of water was felt to be a human right and a responsibility that Government could not delegate. The success with the pilot project in the slum at Shantinagar indicates that a more assertive approach could have yielded positive results for more low-income communities in Quetta.

Total sanitation. Research by various agencies including the Water Supply and Sanitation Collaborative Council (WSSCC) based in Geneva, International Science Federation for Home Hygiene (IFH) and London School of Hygiene and Tropical Medicine (LSHTM), has established the relative benefits of investments in safe water, improved sanitation, and better home hygiene practices. The results were not available to QKAEMP proponents in 1997. It is now known that hygienic cleaning at home can most effectively reduce the incidence of infectious diseases.

Future projects should promote the total sanitation and home hygiene concepts. They should focus on mothers and children to best communicate behaviour change communication in sanitation and hygiene practices.

Safe end-disposal of sewage. At present the sewage is disposed in dry ravines and drains at a

considerable distance from human settlement. Quetta has a dry climate with strong sunlight, which mitigates the health and environmental impacts of sewage discharged away from populated areas. However, long-term, safe and environmentally sustainable end-disposal is an objective and a challenge.

Challenges for scaling up the approach

Policy issues. Despite repeated advocacy over its closing years, QKAEMP failed to convince the leadership at CDGQ that substantial improvements had been achieved and that it was the appropriate time to reduce and in perhaps even eliminate the direct subsidy. The City District Nazim (Mayor), in fact, continued to argue that the subsidy should be increased from 50 to 75%. The massive Federally funded QWSEIP has strengthened his line of argument.

Until clarity and consistency is achieved in Federal and provincial policies on sanitation, the sector will continue to need improvement in Pakistan. The issues of procedural clarity, system-wide responsibility, and of equity are particularly important to resolve, as noted below.

Procedural complexity. QWSEIP has adopted the institutional arrangements of QKAEMP, with NESPAC (a large national engineering firm) as TA, Office of Accountant General as Fund Manager; UBS and five city-based NGOs as IPs.

QWSEIP has also adopted its social mobilisation procedures, forming LOs and WLOs, and its technology for shallow small bore sewers. However, subsidy has been increased to 80% of the cost of the lane sewer. IPs are reimbursed the costs of

accomplished sanitation infrastructure. A deduction of up to 25% is made for sub-standard works.

Progress has been slow so far because of the cumbersome procedure of drawing money from the AG Office (Interview with Mr. Ghulam Qadir Lehri, Coordinator, UBS, CDG Quetta on 26 December 26 2007).

Socio-economic equity. QWSEIP also installs deep, large diameter sewers along the main roads of the city under departmental and contractor modes without any direct charge from the residents along the main road. Many people living in the side lanes perceive the requirement for any contributions for condominium sewer as inequitable and unfair (Interview with Mr. Safi Wasiuddin, CEO, Society for Environmental Awareness, an IP of QKAEMP and QWSEIP, 27 December 27 2007).

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