Swiss Centre for Development Cooperation in
Technology and Management

Urban Sanitation

The Challenge to Communities, Private Sector Actors, Local Governments and External Support Agencies

Proceedings of the 11th Aguasan Workshop, Gersau, Switzerland, 26-30 June, 1995

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1. Introduction to the Workshop Theme

1.1 AGUASAN and Urban Development

AGUASAN is an interdisciplinary work group for water and sanitation development. Since its commencement in 1984, AGUASAN has held annual workshops in Gersau, Switzerland, which bring together project field staff, desk officers, experts and consultants for a week of exchange and reflection on selected development issues. Beyond the learning experience of participants, the workshops aim to produce conceptual tools which will be of practical use in development cooperation A listing of available tool documents from previous Workshops is provided in Annex 6.

To date, AGUASAN workshops have been concerned only with rural development. While this focus resulted, in part, from the limited energies available, it also reflected the prevailing attitude that urban growth should be counteracted rather than encouraged. This "rural bias" has hardly affected the pace of urbanisation in the developing countries, of course, and urban poverty, public health and environmental conditions have continued to deteriorate. Moreover —as recognised in the recently formulated "Urban Development Policy" of Swiss Development Cooperation (SDC)— urban development is not really an *alternative* to rural development, but a necessary condition for advance in both settings. The moment had thus arrived for AGUASAN to broaden its scope to include urban as well as rural settings, and to look for synergies between the two.

The subject of the 11th Gersau Workshop was limited to selected aspects of urban development. Questions of water supply were left aside, for example, to concentrate on "dirty" portions of the cycle. Within the field of urban sanitation, technical questions were deferred in favour of strategic and organisational concerns. While the primary responsibility for urban sanitation lies with local governments, municipal authorities are seldom able to satisfy mounting needs on their own. The Workshop was thus attentive to the contributions of various stakeholders, including user communities, private enterprises, municipal institutions, non-governmental organisations (NGO) and external support agencies (ESA). A central issue concerned the ways in which these stakeholders could be mobilised and coordinated in the interest of more effective and equitable urban sanitation.

The content of the Workshop was built upon four case examples drawn from different cities and regions of the developing world. The cases were represented by four resource persons, each a key initiator and motivator of their respective project. In addition to their formal case studies, the resource persons contributed a wealth of information and practical experience to the discussions. The case examples and the respective resource persons were:

Table 1: Case Studies and Resource People

Project	Location	Resource Person
Orangi Pilot Project (OPP): Low-Cost Sanitation Programme	Karachi, Pakistan	Perween Rahman, Director of OPP
Yayasan Dian Desa (YDD): Self-Help Family Toilets	Yogyakarta, Indonesia	Anton Soedjarwo, Director of YDD
Micro-Enterprise Solid Waste Management	Cucuta & Los Patios, Columbia	Ricardo Giesecke, consultant, Lima, Peru
Kumasi Sanitation Project. Strategic Sanitation Planning	Kumasi, Ghana	Ato Brown, Project Manager, UNDP-World Bank Water and Sanitation Programme

Workshop participants were all professionals in water and sanitation development cooperation (Annex 2). While most participants work primarily in rural areas, the broad range of available knowledge and experience led to extremely vital and productive discussions.

1.2 Objectives and Organisation of the Workshop

The main objectives of the Workshop were to:

- familiarise participants with the challenges of urban sanitation
- identify key issues
- formulate directions and lessons for more effective approaches, and
- draw consequences for the participants' own work situation.

As in the past, the Workshop was organised by the Swiss Centre for Development Cooperation in Technology and Management (SKAT). The Workshop was opened on Monday afternoon by SKAT's Karl Wehrle, who presented an overview of Aguasan Workshops to date and an explanation of how the present theme was chosen. Following personal introductions by the participants, Walter Meyer, outgoing officer in charge of the Swiss Development Cooperation's Urban Development Section, provided an outline of SDC's urban policy. Peter Schübeler, SDC consultant, followed with an introduction to the Workshop theme, defining the essential concepts and circumscribing the challenge. Finally, just to be sure that we would not spend the week "talking shit" without having named it, Mary Boesveld, IRC consultant, offered an ethnological reflection on cleanliness, filth and our attitudes towards these categories. The Workshop was animated and moderated throughout the week by Tonino Zellweger.

Proceedings moved into full swing on Tuesday morning with a presentation of the four case studies. Work groups were then formed and participants began to explore the cases more intensively, employing the "water and sanitation knowledge system" developed in a previous Aguasan Workshop (see Annex 6). This model facilitated identification of the main actors,

roles and functions. Discussions sought to clarify the particular *challenges* faced by each project, the responses which had been made and the degree to which these were successful. Characteristically, most challenges had to do with the relationships between the actors. The outcome of the work group deliberations was discussed in plenary on Wednesday morning.

On Wednesday afternoon the scene shifted back to Switzerland for a first hand look at Lucerne's solid waste management activities —ranging from high-tech incineration to community-based composting— guided by the city's highly motivated professional team.

A brief mid-term evaluation of the Workshop was undertaken on Thursday morning. Among the diversity of the approaches, there was a search for common themes and a desire to understand the origins of apparent differences. Were these differences due to the context in which each project worked, the goals they pursued or the methods which they employed? Behind these questions lay the issues of sustainability and replicability of the approaches. To pursue these questions further, participants went back to the work groups with the task of identifying the particular strengths and weaknesses of each project. The objective was to discern not only strengths and weaknesses themselves, but also the underlying criteria which led us to consider certain characteristics to be strengths or weaknesses. These discussions lead to a better understanding of the objectives and strategies of the projects. The outcome of the group work was discussed a plenary session which lasted until late Thursday afternoon.

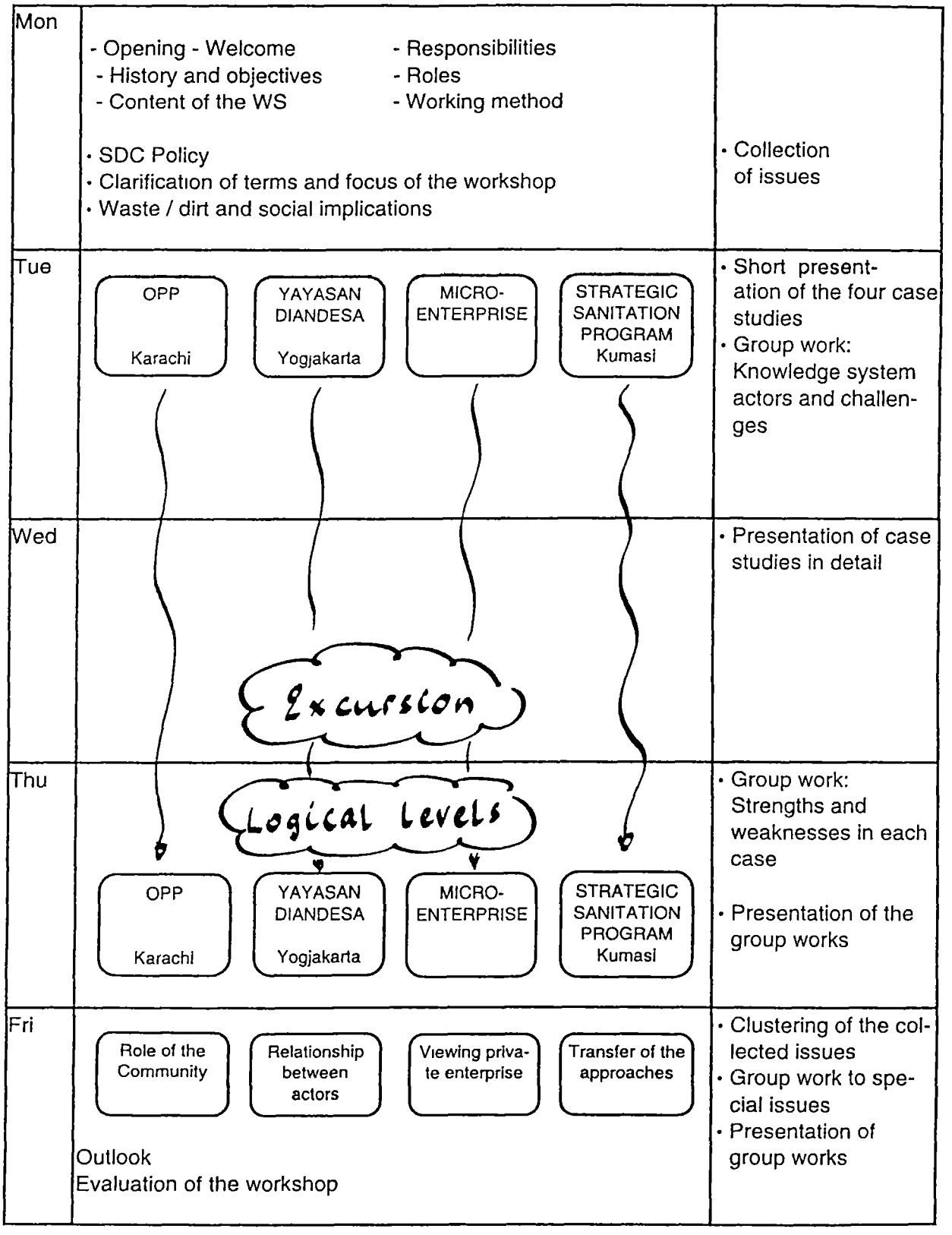
On Friday morning —following a Freudian skit on the obscure relationship between values and human waste, (or was it waste and human values?)— issues which had arisen in the mid-term evaluation were clustered and prioritised. Four key issues were selected as the subject of newly formed work groups. Besides a clarification of the issues, the groups aimed at formulating recommendations based on the projects' as well as their own personal experiences. The results were discussed in plenary. A summary of the remaining outstanding issues and recommendations is provided in Section 4.

In the final session on Friday afternoon, an attempt was made to summarise and interpret the content of Workshop deliberations, employing conceptual tools which had been sketched in the introduction. Project strategies were assessed in terms of their orientation towards particular social groups, types of residential area, functions of service delivery and/or overall processes of infrastructure management. Shifts in orientation related to the up-scaling of project schemes were noted. This discussion is summarised in Chapter 3. In closing, suggestions were collected regarding the theme of the next year's Workshop.

The Workshop process is illustrated in Figure 1. These "Proceedings" make no attempt to describe the entire process. Their purpose is simply to outline the Workshop content and summarise the conclusions and recommendations which emerged:

Chapter 1: Workshop background; introduction to the challenges of urban sanitation
Chapter 2: Review and discussion of the four cases
Chapter 3: Comparative analysis and interpretation of the cases
Chapter 4: Conclusions and recommendations.

Figure 1: Workshop Process



1.3 Challenge of Urban Sanitation

1.3.1 Conditions

An increasing share of the population of developing countries lives in cities. Presently estimated at about 37%, the urban population is expected to account for nearly one half (46%) of the total population of developing countries by 2010. Each year, some 40 to 50 million new urban inhabitants join the struggle for livelihood, shelter, access to basic services and the security of a stable and functional community. This growth is characterised by mounting economic and social disparity. In 1988, some 28% of the urban population in developing countries were considered to be poor. 23% in Asia, 27% in Latin America and 42% in Africa. Furthermore, urban poverty is growing much faster than rural poverty By the end of the century, more than half of the poor in developing countries will be living in cities.

In the face of rapid urban growth and widespread poverty in developing countries, the authorities of most cities of developing counties are unable to provide urgently needed infrastructure services. Sanitary facilities, in particular, are highly unsatisfactory. While more that 25% of the urban population in developing countries lacks access to safe drinking water, according to estimates of the World Health Organisation, more than 40% of the urban population lives without adequate sanitation Only about one-third of the urban population is connected to a sewer system and 90% of the collected wastewater is discharged without treatment. Overall, municipal services collect only about one-third of the total generated solid waste, and only about 5% of the collected waste is disposed in an environmentally sound manner.

Inadequacy of sanitary facilities and services exposes the urban population —in particular the poor— to daily hardships, unacceptable living conditions and critical health risks. WHO estimates that 75% of all illnesses and 80% of all child deaths in cities of developing countries are associated with unsafe excreta disposal, poor hygiene and inadequate drinking water supply.

1.3.2 Provision of Sanitation Services

How do urban residents and other users in the cities of developing countries gain access to sanitation services? To answer to this question comprehensively, three existing approaches should be considered: i) conventional urban sanitation, ii) informal housing development and iii) low-cost sanitation approaches. These are described briefly, below:

Conventional Urban Sanitation

The conventional approach to urban sanitation normally employs a long-term (e.g. 20-year) sectoral master plan, which specifies the phased implementation of the overall infrastructure network —a water-borne sewerage system, for example— according to generally accepted standards of service level and design. In principle, this approach enables the formulation of a technically coherent system for the entire urban region, taking due account of natural parameters and anticipated patterns of urban growth.

In the context of developing countries, the conventional approach has serious shortcomings, however. Long-term plans often incorporate unrealistic assumptions regarding population

growth, economic potential and the final cost of proposed systems. As a technical response to anticipated sanitation needs, conventional sanitation frequently comprise a supply-driven, "blue-print" approach, which takes little account of actual priorities, specific needs or varying ability to pay in different localities of the city.

In many cases, the conventional approach has produced unaffordable proposals which are not implemented as planned. Implemented systems commonly serve only a limited portion of the population while severely taxing the municipality's technical and financial capacity to operate and maintain them. The effectiveness of conventional facilities is often quite low. Furthermore, when conventional facilities are realised in low- and middle-income areas —with donor financing, for example— they are likely to exceed the economic demand for service. Few private connections are implemented and the public investment remains under-utilised and financially unsustainable.

In summary, the main weaknesses of the conventional approach are:

- high-cost solutions which are unaffordable to most low-income households
- lack demand-orientation, unresponsiveness to real priorities and needs
- poor cost recovery
- low operating effectiveness; inadequate operation and maintenance
- lack of incentives, competition and accountability.

Informal Shelter and Service Provision

In most cities of developing countries, neither the public sector nor the formal private sector is capable of providing housing which meets the needs of low-income households at prices which they can afford. In consequence, about 30% to 50% of the housing in most cities of developing countries is produced informally by low-income households through an incremental process of owner-managed development.

Informal housing production is not limited to the dwelling unit alone, but encompasses a wide range of infrastructure and service needs as well. Roads, footpaths, drains, water supply, sanitary facilities and transport services are often provided, extended and/or improved through the combined efforts of residents, community-based organisations (CBO) and informal private sector actors. While the popular image is one of a "self-help" endeavour, the terms "owner-managed" and "community-based" development are more accurate. Beyond the self-help contributions of individuals and community groups, informal housing and service provision depend private sector enterprises and workers for technical skills, organisational capacity, labour, materials and even credit.

Although informal sanitation, drainage, and waste disposal systems constitute the only available service for large numbers of low-income urban households, the solutions which they provide are hardly satisfactory. In densely settled informal settlements, on-site disposal of human waste is highly problematic from the ecological and public health perspectives. Channelling waste water to the open street drains and dumping solid wastes on open plots are widespread but environmentally unacceptable informal practices. In most cases, informal sanitation facili-

ties constitute poorly executed, fragmentary solutions to pressing sanitation problems. They are implemented without a coherent plan and their linkage to the municipal network is poor or non-existent.

The main weaknesses of informal approaches, in summary, are:

- poor technical quality
- uncoordinated, locally isolated solutions with no effective links to municipal systems
- low-level of activities, ineffective protection of environmental and public health conditions.

Low-Cost Sanitation Approaches

Governments in developing countries have not always responded positively to their own incapacity —and that of the formal private sector— to provide adequate housing and services for the low-income urban population, nor have they looked kindly upon the explosive growth of informally built facilities. Up to the 1970's, many governments actively combated informal housing formation while attempting to provide low-cost housing solutions of their own. By the mid-1970s, however, it had become apparent to most authorities in developing countries that low-income residents do, in fact, make important contributions to housing and service provision. Government-based development efforts —often supported and financed by external support agencies (ESA)— have sought increasingly to mobilise self-help potentials through site and service schemes and up-grading programmes.

The outcome of low-cost sanitation strategies has been generally positive. Technical solutions have been implemented which meet the needs and ability to pay of low-income households. User communities have been involved to some degree in the planning and implementation of sanitation improvements and the subsequent operation and maintenance of facilities. A major advantage of low-cost approaches lies not just in the mobilisation of users' contributions, but in the more effective use of public resources through a better targeting of investments to the people's real demands.

On the other hand, the application of user participation within government directed projects has often proven problematic. Community mobilisation is a time-consuming activity which calls for specific skills and methods. Wary of rising expectations and time-consuming decision-making processes, authorities tend to limit beneficiary involvement to a brief planning consultation. The pressure to implement the projects on schedule —particularly strong when foreign donors are involved— often gives a "supply-driven" character to the approach. Conditions for effective participation are thus inadequate and the potentials of informal development are not engaged. Finally, when the community's "ownership" of the project is not achieved, cost recovery tends to be quite poor.

Aside from some notable exceptions such as Indonesia's Kampung Improvement Programme (KIP), most low-cost sanitation approaches remained isolated local efforts with little linkage to municipal sanitation systems. Only a limited portion of the target population has been reached.

The main weaknesses of low-cost approaches, in summary, are:

- failure to engender effective participation or project "ownership" by beneficiaries
- poor cost recovery
- failure to mobilise the potential of informal private sector development
- isolated local solutions with little linkage to the municipal sanitation systems
- failure to reach the most poorly-served low-income households.

1.3.3 Defining the Challenge

In spite of the particular strengths of each approach, neither conventional urban sanitation, nor informal user-managed development, nor the low-cost sanitation approach has proven capable of meeting the needs of a large majority of low-income urban residents. In this light, the challenge of urban sanitation may be framed as follows:

1. How can the positive aspects of existing processes of urban sanitation be preserved while overcoming the weaknesses and limitations of each?
2. How may the activities and contributions of various stakeholders —including users, informal and formal private sector enterprises, government authorities and external support agencies— be mobilised and linked for a more effective and equitable delivery of sanitation services?
3. What approach would be capable of addressing the sanitation needs of the entire urban population, including low-income groups?

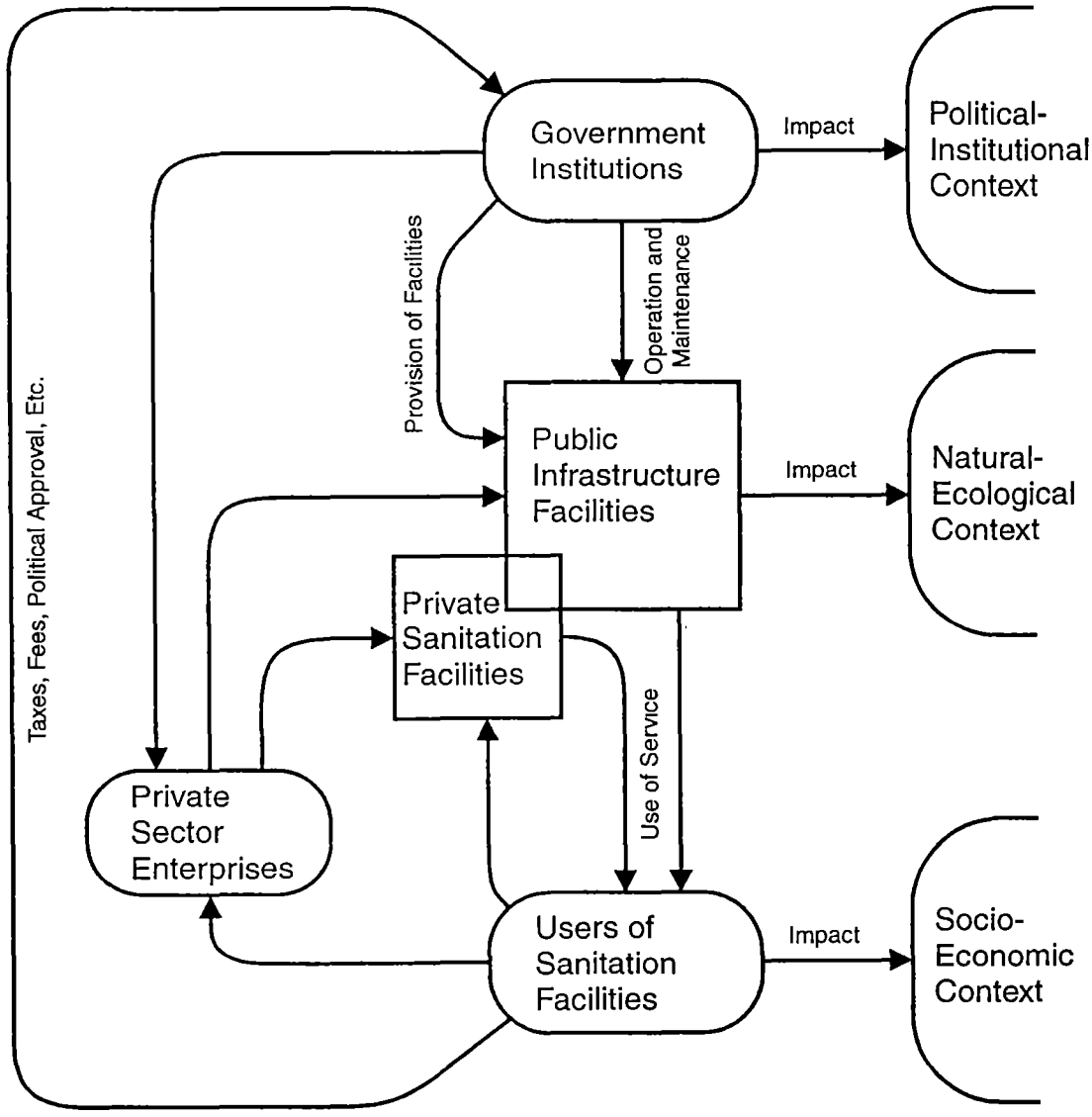
The four cases presented at the Workshop provide the material for tentative answers to these questions. Before turning to the cases, though, this introductory chapter closes with a brief definition of urban sanitation and consideration of its socio-cultural dimensions.

1.4 Components and Processes of Urban Sanitation

Urban sanitation includes the sectors of surface water, waste water, human waste and solid waste. Solid waste is included even though it is often treated as a separate sector; from the user's perspective, though, it is important to deal in a co-ordinated manner with both "wet" and "dry" forms of waste.

Urban sanitation is much more than the "hardware" of facilities and equipment, of course. It is comprised, above all, of service delivery processes, which encompass the functions of waste collection, treatment, recycling and disposal. A sanitation system may thus be defined to include all components (institutions, facilities, users, etc.), processes (operation and maintenance, fee payment, etc.) and factors (organisations, skills, etc.) which are required for a sustained flow of services in the above mentioned sectors. The main components and processes are illustrated in Figure 2. In the following sections, this schema will be employed to describe the features of case examples.

Figure 2: Components and Processes of Urban Sanitation



1.5 Socio-Cultural Dimensions

Technical approaches to urban sanitation deal in quite neutral terms with experiences which can, in fact, be symbolically and emotionally charged. Personal hygiene is an intimate affair, and every society evolves acceptable forms for dealing with questions of sanitation in the public realm. In many cultural traditions, cleanliness and filth delimit a scale of values which may apply to things, activities and people. (See Annex 4, for an identification of value as a "logical level" of experience). Association with filth very often has negative social connotations.

The absence of adequate sanitary facilities usually obliges people to act in ways which they feel to be embarrassing or even anti-social. Personal and social costs arise which hardly figure in the calculations of sanitation planners. When people channel excreta directly into the street or dump garbage into a nearby stream, for example, they are not necessarily indifferent to the consequences. While they may have no practical alternative, they are not likely to feel good about such practices. To preserve self-esteem, people may become indifferent or even defensive regarding environmental sanitation, and the social cohesion of a community may suffer in consequence. Be this as it may, sanitation development is a complex process which implies significant socio-cultural dimensions along with the technical and public health considerations.

In a brief but very pertinent contribution, Mary Boesveld, ethnologist, illustrated some limits of our "modern" Western (and usually masculine) understanding of sanitation. The central message was that we need to become conscious of our own culturally-based attitudes towards sanitation if we want to contribute effectively to improved sanitation in other cultural settings. It was noted, for example, that male and female experiences and needs regarding sanitation are different, and that the differences may vary from culture to culture. It is indicative that sanitation technology almost universally ignores the requirements of menstruation.

The idea that faeces may be dangerous is, in fact, quite recent. In Amsterdam, for example, the bucket system of human waste removal was common until the end of the last century; sewers were only extended after a serious cholera outbreak in 1894. In many parts of the world, children's' faeces are not even considered to be dirty. While there is thus much need for information regarding hygiene and public health, westerners should avoid the moralising tone which often characterises their contributions. Different sanitation practices are not necessarily an sign of ignorance. Human waste can be valuable as fertiliser, for example, and many traditional systems make better use of waste from an ecological viewpoint than modern sanitation systems.

It is above all important that sanitation problems be treated in an integrated manner which considers the particular socio-cultural context in which they arise, and the closely related functions of water supply, drainage and solid waste management. (See *SDC Sector Policy on Water Supply and Sanitation*, Swiss Development Cooperation, May 1994).

2. Four Approaches to Urban Sanitation

This chapter introduces the four cases of urban sanitation development, summarising presentations of the resource persons and the first work group sessions. The case studies themselves may be obtained from SKAT (see References, Annex 6).

2.1 Orangi Pilot Project

2.1.1 Project Description

Orangi is one of the largest "katchi abadi" or squatter areas of Karachi. The Orangi Pilot Project (OPP) was started in 1980 by an eminent social scientist, Dr. Akhtar Hameed Khan, with financial support from a local foundation. Rather than conducting surveys, the OPP initiated extensive discussions with the people of Orangi and their leaders Sanitation emerged as the priority problem.

Noting that the construction of most houses in Orangi was owner-managed, the OPP became convinced that the people would also be capable of constructing a local sewer system. Some households had, indeed, attempted to construct sanitary improvements but lacked the technical know-how, organisation and co-ordination required to build an effective system. The OPP thus undertook research aimed at developing low-cost sanitation solutions and devising an appropriate organisational form for community-managed implementation Through technical simplification and, above all, efficient management of contractors, the cost of sewer construction could be markedly reduced. With the support of local activists, the people were then encouraged to establish lane-level organisations for financing and implementing the local sewer lines. The success of the early lane sewers created a "snow-ball" effect as neighbouring areas followed suit. Related programmes were initiated for low-cost housing improvement, small-scale enterprise credit, health education and schools.

An important feature of the approach was the distinction between the "internal" and "external" components of sanitation infrastructure. The former comprises private sanitary facilities, local or tertiary sewer pipes and, in some cases, secondary sewers. The latter includes trunk sewers and treatment facilities. While the lane-organisations (CBO) assumed responsibility for financing and managing "internal" components of the system, the municipality was expected to assume responsibility for the "external" components.

The low-cost sanitation scheme is being replicated in several other areas of Karachi and other cities of Sindh and Punjab. Besides the Orangi Project itself, discussion also touched upon the "Collaborative Katchi Abadi Improvement Project" (CKAIP) in Hyderabad, which is undertaken in collaboration with the municipal government with overhead support from the SDC. Finally, a more recent programme in Karachi was described, which is being implemented by the Sindh Katchi Adadi Authority (SKAA) together with the OPP.

The main results of these different projects are:

- In Orangi, since 1980, a total of 80'503 houses encompassing about 85% of the population of about 900'000 people have been provided with sewer connections and in-house toilets through self-financed, self-managed efforts.
- In Hyderabad, after two years of collaboration with the local government, the "external" trunk sewer (966 m. long) is finally nearing completion; due to this inordinate delay in "external" works it is not yet possible to begin "internal" development and the people have begun to loose faith in the project.
- In Karachi, after one year's work with SKAA, an energetically directed Provincial agency, external sewers have been completed in six katchi abadi. Internal sewers connections reached 12'789 houses, about 53% of the total, by December 1994.

2.1.2 Actors and Challenges

While the OPP was an essential initiator and facilitator the community-based sanitation project, success has depended upon a self-imposed restriction of the *NGO* role. In the OPP's view, its main functions are research and extension work, including various forms of training. Key contributions are appropriate technical solutions and workable models of community-based management. In providing these inputs, the NGO's relationship to the people is essentially that of consultant. The OPP is very careful not to take the lead in organising lane associations or in managing project financing or implementation. These responsibilities lie clearly with the people, even if it means waiting for some time until the people are willing to assume them.

The central *challenge* of the project was to overcome the "psychological barrier" which prevented the people from attempting to construct a local sanitation system —a responsibility which, in their view, belonged to the government. To overcome this barrier, the people had to be convinced, firstly, that they were capable of the task and, secondly, that the government would not going to do it for them. To enable people to self-finance and manage sewer construction a suitably low-cost technical solution was required. Once developed, the solution had to be demonstrated and "demystified" for the people.

As might be expected, ***local politicians*** resisted self-help efforts which made the people independent of prevailing patronage relationships. Politicians redoubled their promises to obtain service from the government, arguing that the people should not pay for facilities themselves. Overcoming this resistance was a major *challenge* which was met by extensive interaction, information and persuasion. A turning point occurred when a local councillor became convinced of the approach's potential and began to support it.

According to the organisational concept mentioned above, the sanitation system is divided into "internal" and "external" portions. Through ***lane-level organisations*** of 20 to 30 households the people took full responsibility for managing "internal" works. The task of forming and leading the lane CBO was assumed by local ***"activists"***. Supported and trained by the OPP, activists became the main "transmission line" between the NGO and the people.

Informal construction companies and workers implemented the physical works under the management of the lane organisations, often with labour inputs from the residents. The technical and organisational skills of these informal private sector actors were vital to the programme success, and the NGO also invested considerable time in small-scale entrepreneurs, helping them to up-grade their products and improving their technical and organisational skills.

The OPP has had limited success in mobilising the ***local government*** to complete "external" sewers. Only after more than 13 years' work in Orangi did the municipal government, with Asian Development Bank financing, finally initiate a project to build trunk sewer lines to receive effluent from the community-built "internal" sewers. The *challenge* in this situation was to ensure that the municipality's contractors did not install shoddy construction, which would soon become non-functional, as commonly happens in low-income areas. To address this challenge, the government was petitioned to grant the lane organisations some responsibility for construction supervision. The arrangement contributed significantly to the efficiency and quality of the construction; lane organisations managed to force contractors to tear out and reconstruct a considerable number of badly executed manholes.

In contrast to the Orangi setting, the Hyderabad project area is quite flat. "External" trunk sewers are thus a technical precondition for the construction of "internal" lane sewers. The *challenge*, in this case, was to arrange for timely construction of the "external" trunk sewers by the municipal government. In spite of active participation and support of local government officials, it has taken more than two years to implement about 970 m. of sewer line. The reasons for this excessive delay include i) very frequent transfer of government officials, ii) lack of inter-departmental coordination, iii) ineffective contract management, iv) lack of accountability, v) poor technical capacity, and vi) failure to integrate monitoring into project management in a way that promotes the development process. This discouraging experience contrasts with the successful katchi abadi upgrading programme which SKAA is implementing in Karachi with OPP support. The crucial distinction is that these external sewer works are financed directly by SKAA out of residents' lease payments and constructed by SKAA; municipal government participation was not required.

This experience suggests that municipal governments in Sindh are presently not able to promote or collaborate with community-based sanitation development. In these circumstances, an alternative strategy would shift the *challenge* to the technical level. Indeed, the OPP is seeking to develop decentralised technical solutions for the "external" functions of sewage collection and treatment. In this way, the scope of community-based sanitation development may be expanded in spite of ineffective public sector collaboration.

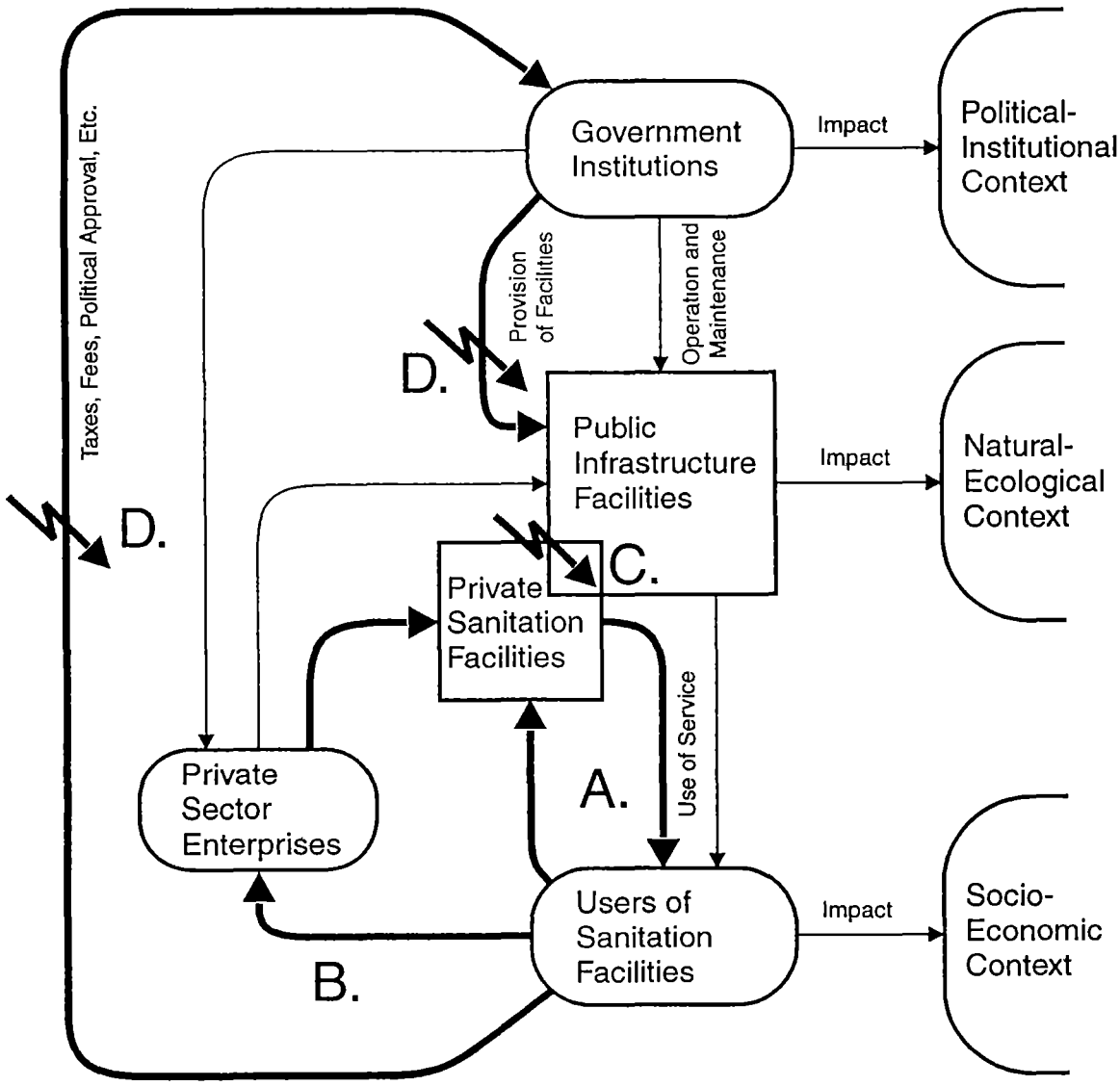
The final *challenge* which was highlighted by the work group concerned replication of the approach in other areas. Instead of attempting to expand its own operations to meet the potential demand, the OPP has established a Research and Training Institute (OPP-RTI) for the purpose of training members of other NGO, CBO leaders, community "activists" and government staff.

2.1.3 Organisational Setting and Limits

Figure 3 illustrates the organisational setting of the OPP model. Activities begin with the existing private circuit by which residents and informal construction enterprises provide sanitation facilities and services (A). Improvement of the technical quality and organisation of the community-based solution is sought through improved collaboration with strengthened private enterprises (B).

The logic of the approach calls for better integration between the private ("internal") and public ("external") segments of the system (C). To accomplish coordinated development, an organisational link is required between user communities and municipal authorities (D). After more than a decade of successful community-based development, municipal governments have, in principle, accepted the approach. In practice, though, government agencies —with the important exception of SKAA— have not managed to significantly alter the prevailing, ineffective procedures of service provision, or to promote and complement the potential of the community-based approach.

Figure 3: Components and Processes of Urban Sanitation: Orangi Pilot Project, Karachi



2.2 Self-Help Provision of Family Toilets in Yogyakarta

2.2.1 Project Description

The Yayasan Dian Desa (YDD) is an NGO based in Yogyakarta, Indonesia, with many years of experience in rural and urban development projects in the Yogakarta area and elsewhere in Indonesia. In the framework of the Yogyakarta Urban Development Project (YUDP) —an SDC supported project for municipal management support— the YDD has assumed responsibility for specific tasks of community-based and community-oriented development. As a first step, the YDD completed an extensive survey of urban households, the "Real Demand Study" (RDS), in 1991. The objective of the RDS was to provide detailed data on the people's needs and economic demands for infrastructure services in different parts of the city, including information on their attitudes and aspiration with regard to infrastructure services. The RDS was expected to enable more effective programming of infrastructure development, leading to activities, strategies or "social packages" for increased community involvement in service provision.

The case presented at the Workshop —a relatively modest project for "Self-Help Provision of Family Toilets"— was an initial step towards operationalisation of RDS findings. Besides the immediate aim of improving sanitation conditions of poorly served households, the project's objective —within the YUDP— was to introduce municipal authorities to community-based infrastructure development approaches.

The Pilot Scheme, which began January 1993, provided technical support and credit facilities for the construction of private toilets and privately managed public toilets in areas where the space for private toilets was lacking. Two types of approaches were implemented: Type I, implemented with government collaboration and Type II, implemented by the NGO alone. Different conditions and features were applied in each type:

Type I
- Administered by YDD under the YUDP umbrella with direct government involvement
- No collateral required of borrowers
- Borrowers were selected by local government officials
- Interest-free loan were provided
- Credit limit of SFr. 160.

Type II
- Administered directly by YDD with no government involvement
- Private or social collateral were required
- Borrowers were selected by borrower groups; local officials were informed
- Interest rate of 12%, compared with commercial rate of 15.5%
- Credit limit of SFr. 200.

While both Programme types have produced functional on-site sanitary solutions, a comparison between them is quite instructive. Type I has distributed 123 loans since December 1992. The recovery rate is 65%, meaning that 35% of the loans are "bad". Type II, the private

(NGO) version, has distributed 153 loans since August 1993. It has avoided the "Santa Claus syndrome" which plagues the public sector version and the loan recovery rate is 100%.

2.2.2 Actors and Challenges

The pilot project was planned and implemented by an ***NGO***, as in the previous case. Here, however, the role of the NGO was not only that of technical and organisational consultant to user communities, but also that of development agent with responsibilities for planning, providing and servicing the credit programme.

Standard on-site sanitation technology was employed and no technical research or development work was required. The *challenge* at the technical level was merely to ensure satisfactory design and quality of the underground construction —which is too often compromised by uninformed users and cost-cutting contractors— while leaving the user households free to elaborate above-ground construction according to their budget, taste and desired level of comfort.

The general YUDP aim of improving the municipal government's capacity to support community-based development meant that the ***municipal government*** was also a central actor. The main *challenges* in this regard were to i) win the government's political cooperation, ii) demonstrate the superiority of the community-based approach and iii) build government capacity to implement community-based development schemes.

The municipal government had a somewhat ambiguous role, figuring as implementing agent as well as "beneficiary" of the institutional development programme. For YDD association with the government in a community-based project complicated the task considerably. As project planner, the NGO had a "high profile"; if the programme failed for some reason, YDD and not the government would be blamed. Difficulties arose because the interests of government officials —and their way of relating to the people— were quite different from those of the NGO. While the NGO was primarily interested in empowering ***people*** by assisting them to gain independence and self-sufficiency, government officials were also interested in winning public support. As politicians, officials sometimes consider *dependence* to be a more reliable guarantee of support than *independence*.

Government cooperation could be harnessed through the methodology of the scheme itself. Through the detailed analytical mapping of physical and socio-economic conditions (RDS), the community-based approach acquired logical status in a city-wide development strategy, avoiding the "one-off" character of many NGO efforts. At the same time, division of the project into two different types —with and without government participation— made it possible for the YDD to collaborate with the government while maintaining its identity as a representative of community interests

Splitting the project into two types made it possible to test different approaches under similar conditions. Judging by the initial results, the greater effectiveness of the NGO's community-based approach —which relates to people as partners rather than beneficiaries— has been amply demonstrated.

The third *challenge* —building government capacity to implement community-based approaches—involves policy changes as well as training and institutional development. While it may be too early to reach a conclusion, the challenge does not appear to have been met. However, the NGO does envision several steps which would promote the replicability and sustainability of the approach. The first would increase ***private sector*** provision of in technical and financial inputs. This implies that government involvement may be limited to facilitating, enabling and/or controlling private sector actors rather than implementing the scheme itself.

A second step would involve human resource development and training of community workers and staff in the approach and methods of community-based development. The main *challenge* in this regard is to attract qualified people to engage in a rather "non-glamorous" undertaking. Finally, replication of the scheme would be promoted through adequate documentation of the pilot experience, clear measurement of its effectiveness and widespread dissemination of the results. For this, simple but significant indicators need to be devised

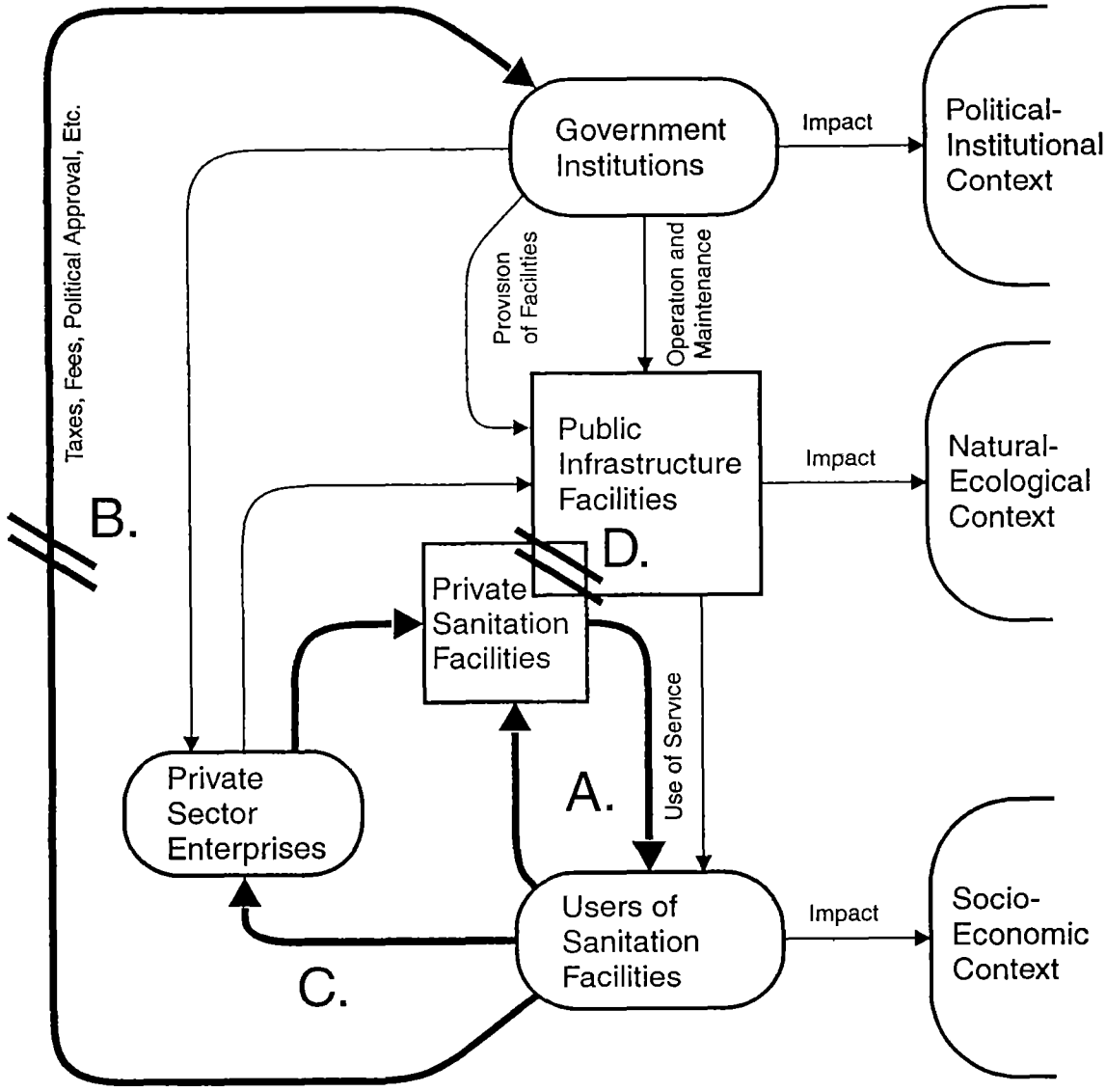
2.2.3 Organisational Setting and Limits

The organisational setting of the project is illustrated in Figure 4. As in the case of the OPP, the management circuit is quite local, involving only individual users, user-groups and private enterprises in the construction of private sanitation facilities (A). It is not apparent what role the government could or should play at this level. An important part of government interest is directed towards winning political approval (B).

The NGO does not feature in the diagram; its intermediary role is temporary, flexible and difficult to localise. In this case, though, the NGO assumed the characteristics of a private sector enterprise which managed credit facilities on a near-commercial basis (C). There is a limit to the potential expansion of the NGO in this role, however. Project up-scaling would call for increased private sector involvement.

Finally, the absence of functional interface between private and public infrastructure facilities (D) is an important limit. Dealing only with on-site facilities, the scheme manages to avoid this issue. However, it does not provide any solution for densely settled residential areas where off-site solutions (e.g. sewers) would be required.

Figure 4: Components and Processes of Urban Sanitation: Self-help Provision of Family Toilets, Yogyakarta



2.3 Micro-Enterprise Solid Waste Management in Columbia

2.3.1 Project Description

The project commenced in 1989 in the cities of Cucuta and Los Patios, Columbia, as part of a Primary Health Care Programme which was being implemented by the Ministry of Health with technical assistance from the German development agency, GTZ. The idea of establishing micro-enterprises for solid waste collection evolved as a response to the urgent need for improved environmental sanitation in the Project area.

Micro-enterprises were composed of members of the user community; any local group or small-scale firm was eligible to bid for the job of waste collection. The successful micro-enterprise was contracted by the municipality to provide solid waste service in a designated area. The micro-enterprise was paid by the municipality, which retained responsibility for cost recovery and for the final disposal of collected waste at the city's dump site.

A project "promoting team" furnished technical planning studies, engineering designs, financial planning and technical support to the micro-enterprises. Credit was provided on commercial terms to enable the enterprise to procure equipment and start-up operations. Once the loan was repaid the micro-enterprises could earn a profit. Supervision of operations was the joint responsibility of the municipality, representatives of the community and the micro-enterprise itself.

The first micro-enterprise, which started in 1991, was composed of 13 associates and provided twice weekly solid waste collection service to 43'000 inhabitants. By 1995, it had expanded to 15 associates and served over 50'000 inhabitants (10'000 households). Over 15 tons of waste were collected daily. The scheme has been implemented in five other urban communities of Columbia and is presently being replicated elsewhere in Latin America.

2.3.2 Actors and Challenges

This project was initiated and planned by a ***consultant***, not an NGO as in the previous two cases. The initiator remained a catalyst and advisor to the participants rather than a partner in the project itself.

The basic project goal was to improve waste collection through privatisation of services. Responsibility for collection was, in effect, decentralised to private sector actors at the community level. The ***municipal government*** maintains overall responsibility for solid waste, however. Micro-enterprises operate under contract to the municipality and without the backing and collaboration of the municipality the scheme cannot even begin. The first *challenge* was thus to win municipal involvement through negotiation, seminars and illustrative material. Key arguments in favour of the scheme included cost savings, increased user-satisfaction, employment generation and environmental protection.

The second main *challenge* was to establish ***micro-enterprises*** capable of operating waste collection functions in a satisfactory and sustainable manner. The alternative of contracting ex-

isting small enterprises was not followed because of their tendency to underpay workers and the difficulty of regulating them ensure service quality. In this regard, the community-based micro-enterprise promised several advantages. Because the enterprise was composed of community members, social control was effective means of ensuring service quality. Conversely, members of the micro-enterprise were interested not only in earning their wages; as community members they were also motivated to provide a social service which improved the quality of their neighbourhood. Organisation of micro-enterprises as owner-operated associations strengthened workers' pride and incentive.

On the other hand, the community-based enterprises faced the problem of weak and uncertain management capacity. The response was simply to start small and learn by doing through a step-by-step expansion of activities.

A third important *challenge* encountered by the programme concerned vested interests, in particular those of the union representing the municipal workers who were likely to lose their job as a result of privatisation. The approach followed was simply to win the mayor's support based on his political interest in better, lower-cost solid waste services. Further responses which need further development would include public information compaigns and social plans for the redundant waste workers.

Privatisation required financing for equipment and operating capital. Capital was secured from private investors at commercial rates of interest. The project's association with social objectives and the backing of project sponsors may have reduced apparent risks and facilitated financing by large ***local enterprises***.

Finally, the *challenge* of ensuring the scheme's sustainability was addressed, in general terms, by mobilising and respecting the particular interests of each stakeholder: households, micro-enterprise associates and government institution. The scheme employed low-cost technology and aimed for 100% cost recovery; a subsidised solution was deemed to be unsustainable.

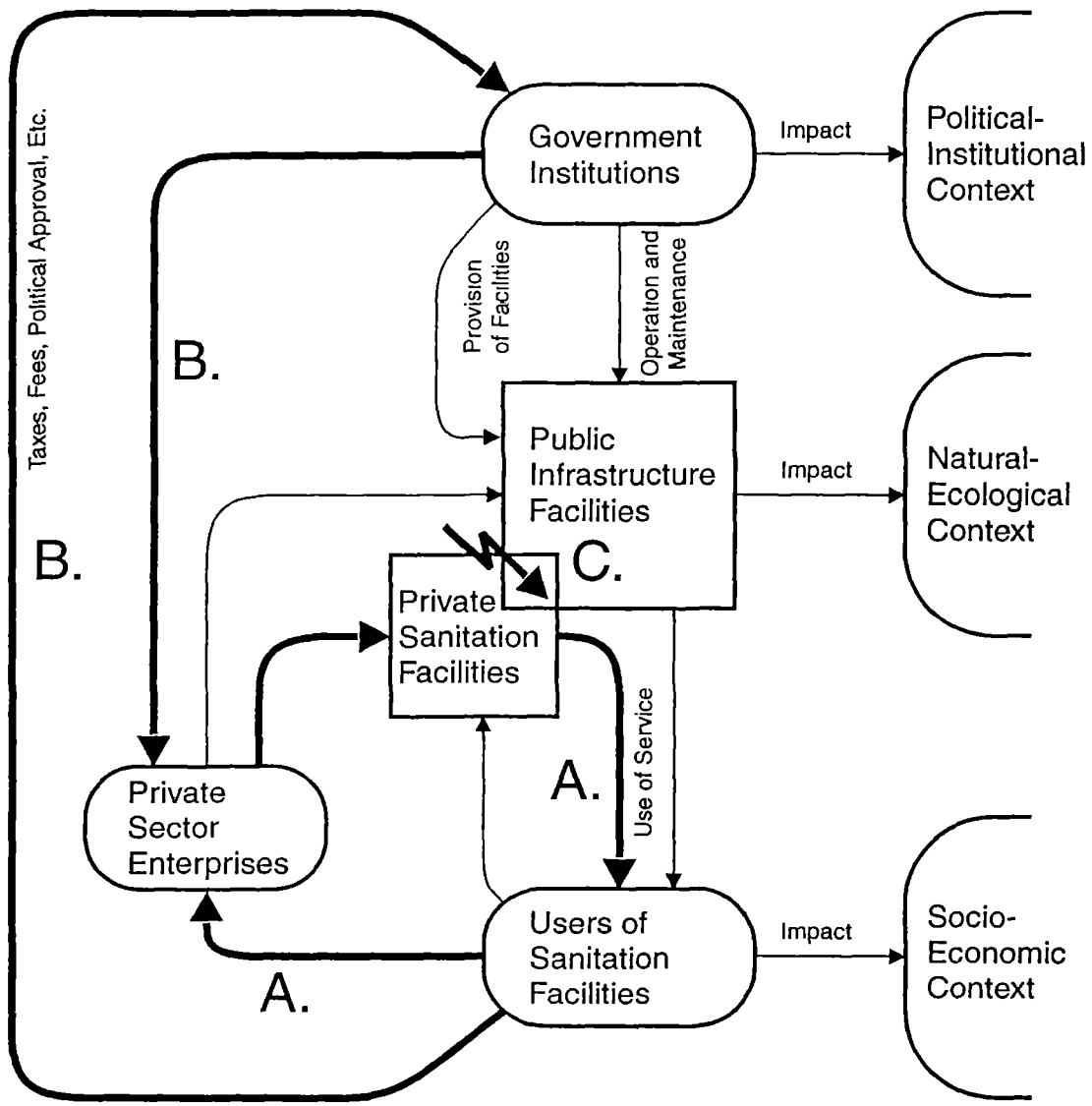
2.3.3 Organisational Setting and Limits

The organisational diagram of this project (Figure 5) is characterised by a double circuit. At the community level, (A) privatised service provision involves close cooperation between user groups, private enterprises and the available private facilities for waste collection. At the same time, the local government is involved in contracting the private micro-enterprises, regulating their performance and recovering costs (B).

The public sector is responsible for the environmentally sound disposal of the collected waste. Final waste disposal is not yet satisfactory, however, and the technical link between community-based collection and public transfer functions (C) still needs improvement.

Finally, irregular payment by some households still poses a *challenge*. It is not yet clear whether this problem is a result of poverty —the inability to pay of certain households— or whether service inadequacy or attitudinal problems are involved.

Figure 5: Components and Processes of Urban Sanitation: Micro-Enterprise Solid Waste Management, Columbia



2.4 Strategic Sanitation Programme, Kumasi, Ghana

2.4.1 Project Description

The Strategic Sanitation Planning (SSP) approach was developed by the UNDP-World Bank Water and Sanitation Division and pioneered in the Kumasi Sanitation Project. The basic idea of SSP is to provide demand-oriented sanitation services by tailoring technical options to the particular housing types and conditions in each area of the city, taking careful account of user preference and willingness to pay. A flexible approach is employed with a relatively short-term planning horizon; implementation follows an incremental, project by project procedure.

The Kumasi project grew out of an initiative of the Kumasi Municipal Authority (KMA), which was dismayed, among other things, by the high mortality of sanitation workers. Project goals were to provide sanitation service to all households, eliminate human waste from the living environment and protect the health of sanitation workers. By promoting the involvement of private enterprises and communities, the KMA sought to withdraw from service provision functions in favour of a planning, facilitating and regulating role The components which were implemented in appropriate areas included home latrines, simplified sewer networks, institutional (school and government office) sanitary facilities and rehabilitated, privately operated public toilets.

The main results of the Project, after five years work, include:

- Completion of a Strategic Sanitation Plan to provide service to the entire city (1991-2000)
- Establishment of a Municipal Waste Management Department with trained and experienced personnel
- Implementation of the first phase of SSP, including the testing of technical, financial and institutional aspects, completion of 250 home latrines, construction of simplified sewers serving 20'000 people, rehabilitation of public latrines in the CBD and franchising their operation to private enterprises
- Support to health care and solid waste management projects
- Initial replication of the approach in other cities of Ghana and other West African countries.

2.4.2 Actors and Challenges

The initiator and main actor in this project was the ***municipal government***. While the approach is community-oriented, decentralisation and privatisation efforts were planned and directed by the municipal government.

The first *challenge* for the government was to deal effectively with the increasing complexity of planning processes which the project implied. Complexity was due, firstly, to the restructuring process which involved new functions, tasks and relationships for several public and private sector actors. Secondly, complexity grew out of the expanded range of technical systems which needed to be planned and implemented in response to the multi-dimensional assessment of demand in each area of the city. To address this problem, the project brought in external professionals to support the government staff and local consultants. In addition, the project

sought to deal with planning complexity through its pilot approach, open time-frame and a step-by-step learning process. To implement this approach, the project required practical methods for capturing lessons and channelling them back to the project management process; monitoring methods and procedures need further improvement.

Another *challenge* related to the transformation from a public to a private system. Potentially profitable undertakings were created such as the public toilet concession. This opportunity drew the attention of vested interests, including local politicians. The project responded at the political and regulatory levels. The Municipal Assembly ruled that no Assembly member would be eligible to operate a privatised facility, for example, and sanitation by-laws were revised to provide an clear basis for regulating privatised operations.

The reform and privatisation programme —which eliminated about four hundred public sector jobs— encountered considerable resistance from existing institutions. The project sought to overcome this resistance by gradually reducing public sector jobs while progressively generating new private sector jobs in the areas of infrastructure construction and operation and maintenance. To manage the system, a new department was established with specialised capacities in contract management, strategic planning, finance and administration and pollution control. Training and human resource development were an integral part of institutional reform.

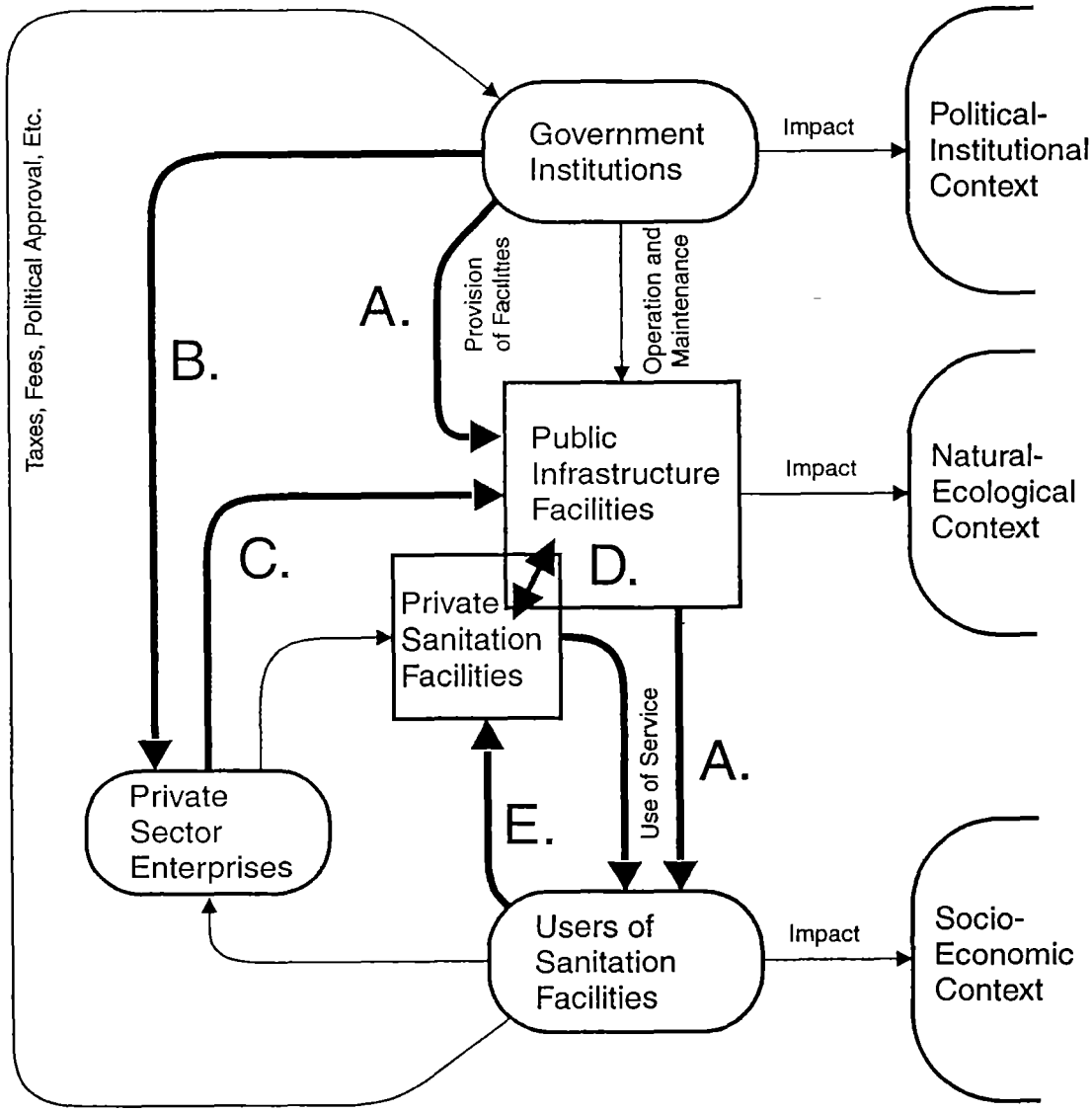
Ensuring the financial sustainability of the new system was the final major *challenge.* Through public information, "social marketing" and negotiations with user groups, the government sought to expand the demand for services, promote the efficient use of facilities and improve the payment discipline of users. A credit system was introduced to facilitate access to sanitation facilities by low-income households. Loan recovery was quite poor, however, and it was deemed more efficient to revert to a subsidised grant system in which the government covered 40% of investment costs for beneficiaries who financed the first 60% up-front. Financial sustainability is not yet ensured, however. In this connection, progress is still required regarding the reduction of investment and operating costs.

2.4.3 Organisational Setting and Limits

The key organisational characteristic of this case is the central role of municipal government. Starting with the conventional system of infrastructure provision and operation (A) the project aims to strengthen private sector management of service delivery. The municipal government maintains responsibility for regulation (B), while responsibility for cost-recovery functions is devolved to private enterprises.

New relationships are introduced where publicly owned facilities (such as public toilets) are operated under concession by private enterprises (C). Strategic Sanitation Planning introduces a good potential for coordination and integration of public and private facilities (D). Mechanisms for increasing the participation of users in the management of local sanitation facilities (E) are less well developed, however.

Figure 6: Components and Processes of Urban Sanitation: Strategic Sanitation Planning, Kumasi



3. Comparative Review of the Cases

What lessons could be drawn from the four cases discussed in the Workshop? To what extent do the cases respond to the challenges of urban sanitation? What do they tell us about potential forms of partnership between the various actors — government authorities, communities, private enterprises, NGOs and ESAs? Tentative answers to these questions which emerged in the closing sessions of the Workshop are summarised below.

3.1 Assessment of the Approaches

Employing the three prevailing approaches to sanitation service —conventional, informal and low-cost sanitation— as a frame of reference, each case may be described as a mix of characteristics which incorporate, in varying degrees, the strengths and weaknesses of these three approaches. For reference, the existing approaches are summarised below:

Table 2: Strengths and Weaknesses of Existing Sanitation Approaches

Approach	Strengths	Weaknesses
Conventional Sanitation	• Technically coherent, city-wide plan • Regional overview enables consideration of ecological and natural constraints • Long-term plan allows consideration of future urban development objectives	• High-cost, unaffordable to most low-income households • Lack demand-orientation, unresponsive to real needs and priorities • Poor cost recovery • Insufficient provision for operating and maintenance, low operating effectiveness • Lack of incentive and competition.
Informal Sanitation	• Development is adapted to the immediate needs and priorities of the people • Affordable, low-cost services • Self-managed and self-maintained systems	• Poor technical quality • Isolated solutions with poor links to municipal systems • Limited positive impact on environmental and public health conditions
Low-Cost Sanitation	• Moderate costs, generally affordable solutions • Allows people a certain "voice" in the use of public resources • Mobilises some of people's resources in the improvements • Should facilitate coordination between area-wide and municipal networks.	• Implementation pressure leads to limited participation, "supply-driven" approach and limited user "ownership" of the project • Poor cost recovery due to limited project ownership • Inadequate to mobilisation of informal private sector processes • Isolated solutions with poor links to municipal systems • Failure to reach the majority of low-income households

3.1.1 Orangi Pilot Project

The OPP model of low-cost sanitation is rooted in the ***informal approach*** to service provision; it follows a user-managed process which relies upon collaboration between user-groups and informal private enterprises. The principal efforts of the NGO aim at correcting the main weaknesses of prevailing informal processes: poor technical quality and fragmented individual solutions.

While the model incorporates certain aspects of the ***low-cost sanitation approach***, it strives, at the same time, to avoid the weaknesses of government-directed low-cost approaches, which include superficial user participation, supply-driven implementation, limited project "ownership" and poor cost recovery. This is accomplished through full reliance on self-financed and self-managed development.

At the same time, the OPP model attempts to counteract a critical weakness common to both informal and low-cost approaches: the tendency to produce localised solutions which are isolated from the municipal network The key element in the response was the choice of a technical solution —water-borne sewerage— which is compatible with the municipal network. The OPP firmly resisted the advice of UN experts to implement on-site soak-pit latrines rather than the supposedly more expensive sewer system.

To permit "bottom-up" implementation of a technology which is normally planned and implemented in a "top-down" hierarchical manner, it was necessary to divide the system into "internal" and "external" portions and to arrange for the coordinated implementation of the two. The model thus strives for a new synthesis between informal and conventional approaches. The case example demonstrated practical limits of this approach in the present political and administrative context of Pakistan.

3.1.2 Self-Help Family Toilets, Yogykarta

The model of supported self-help provision of household sanitary facilities presented by Dian Desa (YDD) also comprises a mix of features from existing sanitation approaches. As in the case of the OPP, the model contains aspects of the ***informal sanitation approach,*** including owner-managed implementation in collaboration with small-scale construction enterprises. The scheme aims to alleviate weaknesses of the informal system through technical support and credit.

Links to the ***conventional sanitation approach*** occur at the level of strategic planning. In particular, the programme of supported self-help development is conceived as a component in an improved, demand-oriented planning approach which is being introduced by the YUDP project. In the absence of a functional integration at the technical and/or management levels, this link remains somewhat tenuous, however.

The scheme also exhibits some characteristics of the standard ***low-cost sanitation approach*** such as low-cost, on-site technology and government-directed support (e.g. credit). In the "Type I" project (with government participation), the model fails to overcome typical weaknesses of the low-cost approach, however. Project beneficiaries experience no change in their

traditional relationship to the government; there is limited sense of project "ownership" to replace the "Santa Clause syndrome", and cost recovery is accordingly poor Finally, the solutions remain locally isolated, with no functional linkage to the municipal system.

The "Type II" scheme with no government participation scores much better regarding project ownership. In effect, the NGO operates much as a private enterprise, as in the informal approach. Credit is provided on a commercial basis, beneficiaries act on independent terms, and cost recovery functions very well. As in Type I, however, the project implements relatively isolated solutions which are not linked to the municipal system.

3.1.3 Micro-Enterprise Solid Waste Management, Columbia

The micro-enterprise model of solid waste management is not simply an improved informal sanitation approach, nor can it be seen as a reformed conventional approach. The contribution of this model lies precisely in its synthesis of specific aspects of both informal and conventional approaches. By devolving waste collection functions to community-based micro-enterprises, the municipality effectively counters the high service costs, poor demand-orientation, low cost recovery and lack of incentive important weaknesses which normally characterise the ***conventional approach***. At the same time, through municipal control and regulation of service delivery, it is possible to overcome important weaknesses of the ***informal approach,*** such as poor technical quality, isolated solutions and limited scope of service delivery.

At the technical level, the model incorporates some aspects of the ***low-cost approach***. Thanks to privatisation, however, typical problems of unresponsive, supply-driven services are avoided. Cost recovery, which remains a public sector responsibility, still presents problems.

One weakness of the approach which needs further attention concerns the provision of environmentally sound waste disposal. In contrast to waste collection —a service for which people are willing to pay— waste disposal is a "public good" which generates no market demand. In order to mobilise public resources for improved waste disposal, a constituency must be formed which supports and is willing to pay for environmental protection. This is a political task which exceeds the goals of the present case.

3.1.4 Strategic Sanitation Planning, Kumasi

The fourth case study, SSP, arises within the ***conventional sanitation approach.*** It is, in effect, a reform programme which aims at correcting the main weaknesses of the conventional approach while retaining such its characteristic strengths. A key feature of the Kumasi SSP is the far-reaching privatisation of service delivery functions and the corresponding shift in the government's role from service provision to planning and regulation.

SSP aims to improve demand-orientation and responsiveness to user needs —characteristic weakness of the conventional santation approach. The approach resembles a ***low-cost sanitation approach*** in the implementation of adapted technical and organisational strategies in selected areas of the city. In this case, however, an integrated, city-wide network of solutions is sought which would avoid the fragmentation which normally characterises low-cost sanitation approaches.

While users do participate in the implementation of individual sanitation improvements, users do not assume a significant role in planning or implementing local improvements. The project has not explicitly promoted community groups as partners in local sanitation development. In this sense, the SSP approach has not build very extensively on the strengths of ***informal sanitation approaches***.

3.2 Forms of Participation and Partnership

3.2.1 Typology of Participation

Each case project introduces certain changes in the roles and functions of private and public sector actors and, in doing so, redefines the relationship between these stakeholders. Each case thus represents a particular approach towards participation. Effective participation depends upon a clear division of responsibilities and tasks between stakeholders; a partnership must be formed which establishes who is responsible for what, how the activities will be co-ordinated and how the costs and benefits will be distributed. Many different forms of participation are possible, of course. To facilitate a comparison of the cases, a simple typology of participatory approaches is proposed (see Figure 7).

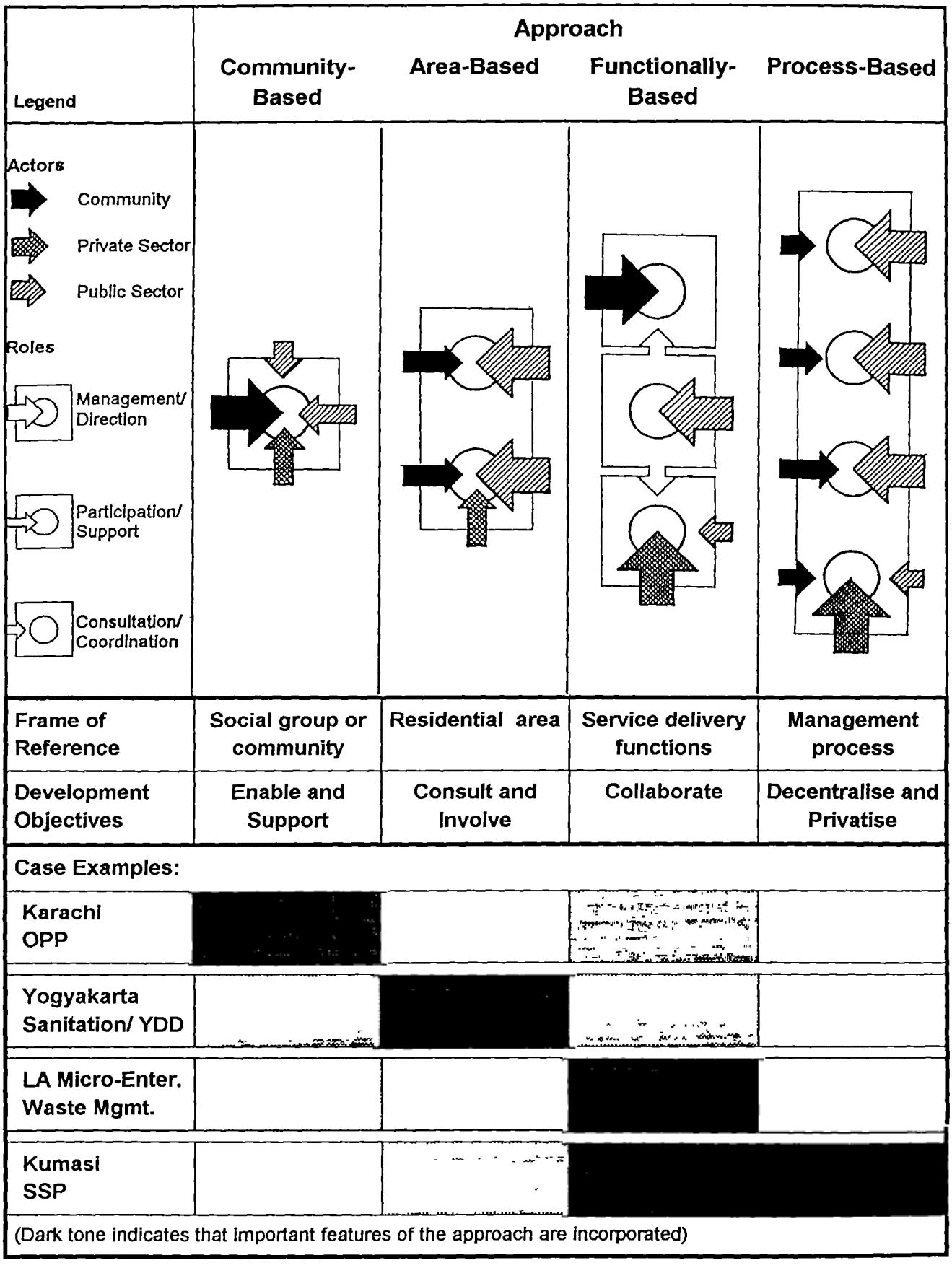
On the one hand, where self-help activities predominate, it is not actually the people who "participate" but rather the government or other development agent, who seeks to support and, in this sense, participate in community-based development processes. On the other hand, the municipal government is responsible for a wide range of sanitation planning and management functions. To manage service provision in an effective and accountable manner, however, governments require appropriate feed-back from the users. In this elementary sense, people — as service users and as citizens— have an essential role to play in each phase of government-based infrastructure management.

Between these extremes —government participation in community-based processes and people's participation in government-based processes— other forms of user involvement and/or collaboration may be identified. A typology of participatory strategies would thus include at least four approaches:

- ***Community-based approaches*** which aim to ***support*** user-managed development
- ***Area-based approaches*** which aim to ***involve*** people in a government-managed development process
- ***Functionally-based approaches*** which aim at ***collaboration*** between actors, where each actor manages a particular functional domain, and
- ***Process-based approaches*** which aim at ***decentralisation*** of management functions.

The strategic approaches are not mutually exclusive, of course. In practice they are applied quite flexibly and it is common that one approach will evolve into the next.

Figure 7: Participatory Approaches to Urban Sanitation



Community-Based Approaches

The most elementary case of participatory management focuses on ***community-based*** activities for developing and improving local sanitation services and conditions. The essential frame of reference for development inputs and partnership is the social group itself. Development objectives, in this case, aim to ***support*** community-based activities by providing needed inputs, ***enable*** them by improving relevant conditions in the legal, regulatory, economic and/or political contexts and, in various ways, ***enhance*** the capacity of user groups to manage local infrastructure services.

Area-Based Approaches

In most government-sponsored programmes of participatory development, it is not a social group but rather a particular residential area —selected according to relevant criteria— which serves as the basic ***frame of reference*** for organising and managing sanitation development. Residents are commonly mobilised to participate in various phases of the development process such as planning, implementation, operation and maintenance, etc., but the development agent normally initiates, plans and directs development activities

The primary objective of beneficiary involvement in the development process is to improve the targeting of measures, win beneficiary support and cooperation, mobilise financial and/or material inputs and promote user support for the operation and maintenance of services.

Functionally-Based Approaches

The functionally-based approach is somewhat more differentiated and, at the same time, more balanced, than the previous two. The essential ***frame of reference*** for participation is not the social group or geographic area, but particular ***functions*** of infrastructure management.

Instead of arranging for the participation of one stakeholder in activities which are directed by another, this approach aims to establish clearly defined functional domains, so that each stakeholder may manage his own domain in a relatively independent manner. The functional domains must be structured so that each stakeholder brings his particular interests and capacities to bear. Most importantly, channels of communication and procedures for ***collaboration*** must be established to ensure an efficient functional integration between the respective domains.

Process-based Approaches

Programmes which aim to decentralise infrastructure management and render service delivery more responsive to user needs take, as their ***frame of reference,*** the entire range of management processes. Management, in this context, includes such functions as the formulation of policies, goals and strategies, long-term planning, investment programming, implementation, operation and maintenance, monitoring and evaluation. While the form and intensity of citizen and/or user participation varies considerably, participation is relevant to every function.

Goals and strategies of sanitation development should, for example, express the aspirations of the population. Public information, consultation and democratic decision-making processes are relevant forms of participation in this regard. Similarly, infrastructure investment programming

should respond to people's demands and priorities. Flexible methods of investment programming are required which encorporate up-to-date inputs from service users.

Decentralisation implies a double movement in which the locus of management and decision-making functions is shifted towards local bodies (city, ward, community, neighbourhood, etc.), while decision-making functions themselves are opened to input from "below". Privatisation — the devolution of management functions from local government to private sector enterprises— is an important measure within the decentralisation approach.

3.2.2 Four Approaches to Partnership

The strategies of partnership followed by the Workshop cases are illustrated in the lower section of Figure 7 and described briefly below.

Orangi Pilot Project

The OPP model has, from the outset, followed a ***community-based approach*** towards participation; the social group with its internal dynamics of decision-making and self-managed development activities is the main frame of reference for project implementation. However, to overcome the technical and organisational limits of a purely community-based approach, the OPP devised the concept of dividing the sanitation system into "internal" and "external" portions and basing private-public collaboration for sanitation development on these two more or less autonomous domains. The ideal of the OPP model is clearly a ***functionally-based approach*** which, at the same time, incorporates essential features of the ***community-based approach***.

Implemented in collaboration with SKAA, the approach has been very successful. An important factor in this success is SKAA's capacity to finance external sewer investments. Municipal agencies which employ conventional sanitation planning and programming approaches have not been capable of providing external investments in a timely manner. In practice, then, the OPP tends to operate at the level of a ***community-based approach***. Evolution towards a more extensive ***functionally-based approach*** requires more flexible and responsive planning and programming on the part of the local government. In general, this would need decentralised sanitation management in the sense of a ***process-based approach***.

Self-help Family Toilet Scheme

While the Self-help Family Toilet scheme in Yogyakarta does not fit very clearly into any of the types of participatory approaches, characteristics of the ***area-based approach*** predominate. A geographically-based analysis was conducted of sanitation conditions and related socio-economic criteria throughout the city, and this was employed to determine appropriate technical and organisational solution for each locality. Development activities were initiated by the development agent and implemented, for the most part, at the individual household level.

Project beneficiaries are mobilised to form borrower groups, at least in the NGO-operated "Type II" version. User-groups do not manage development activities, however, as would be the case in a ***community-based approach***. On the other hand, there is some degree of functionally-based division of tasks, particularly as regards the privately operated public toilet solu-

tion. However, collaborative links to the municipal system —which would be a characteristic of the ***functionally-based approach***— are not elaborated.

Micro-enterprise Waste Management

The micro-enterprise model of waste management embodies essential characteristics of the ***functionally-based approach***. Community groups and municipal agencies each assume exclusive responsibility for particular functions of waste management, while clear operational procedures are defined —and contractually concluded— to ensure effective collaboration between them.

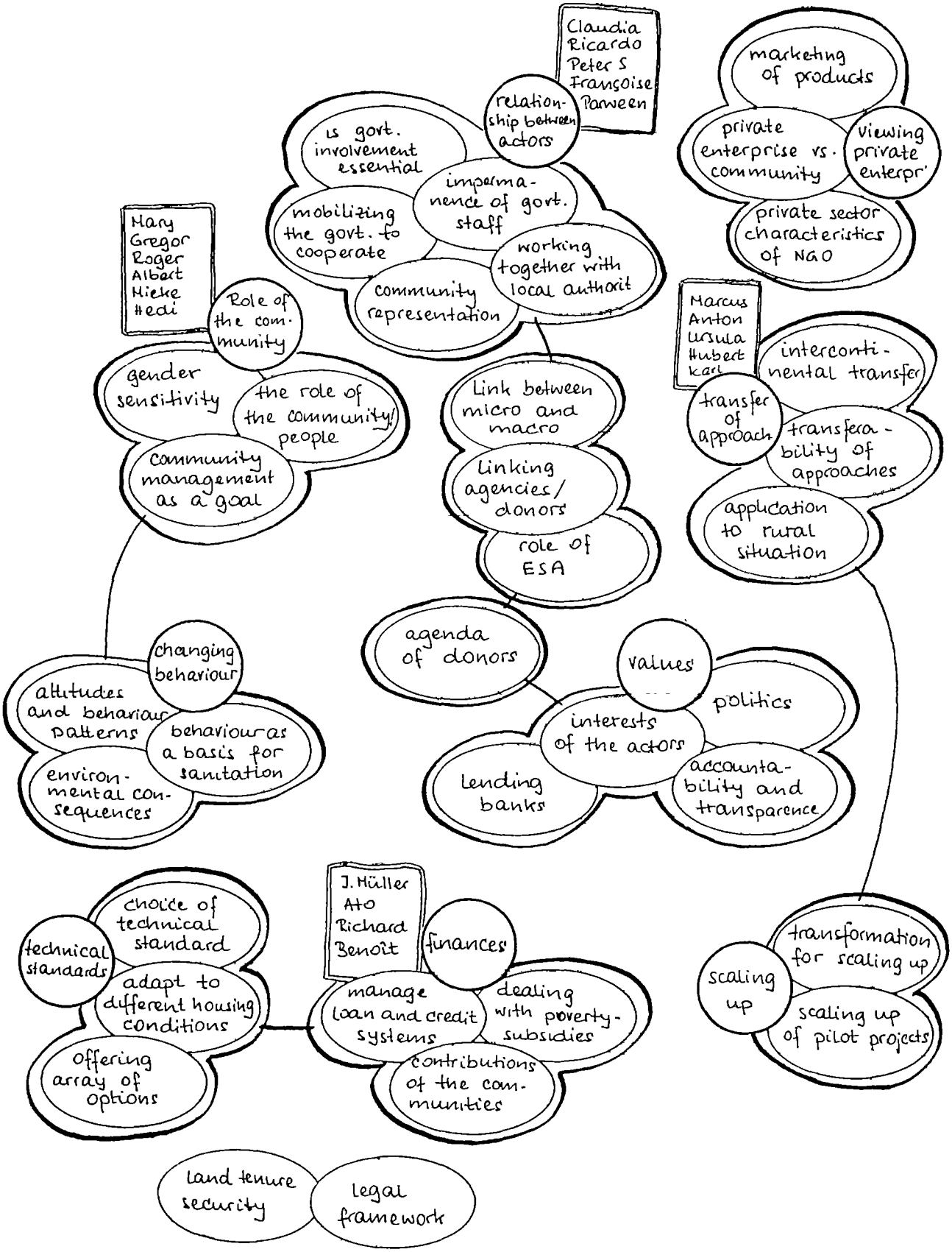
As may be expected, the model incorporates many aspects of the ***community-based approach***; community-based micro-enterprises receive technical and organisational support from the project to build their capacity for independent activity. As noted above, this combination is quite inherent. The determining characteristic of the model, however, is the ordered linkage of two self-managed functional domains —as in the ***functionally-based approach.***

Strategic Sanitation Planning

The SSP model in Kumasi is concerned with the full range of sanitation management processes and may be accurately described as a ***process-based approach***. City-wide sanitation services are broken down into differentiated, area-specific systems and the management of each system is devolved as far as possible to appropriate private sector actors. Mechanisms are introduced to enable the expression of specific local conditions and demands in the development planning process.

As in the other cases, a mix of approaches is apparent. Devolution of public toilet to private operators resembles a ***functionally-based approach***. Other components —such as government-directed implementation of simplified sewers in selected areas— correspond to the ***area-based approach***. In general, though, these activities may be seen as components aspects of a decentralisation and reform strategy which applies to the entire process of sanitation management.

Figure 8: Overview of Issues



4. Issues and Recommendations

4.1 Outstanding Issues

The main issues of urban sanitation as seen by Workshop participants were assembled at the outset, mid-term, and closing sessions of the Workshop (see Figure 8):

Role of the community:	Is community-management a goal in itself?
	What is the appropriate role of communities in sanitation development?
Relationship between actors:	Is government involvement really essential?
	How to deal with the high turn-over of government staff?
	How can the NGO or the ESA mobilise government authorities to cooperate with community-based development?
Views of the private sector:	Is there a negative attitude towards profit-seeking private actors, as opposed to the community?
	To what extent does and should the NGO resemble a private sector actor?
Replication and scaling-up:	Under what conditions can a model or approach be transferred to another situation?
	To what extent are these urban examples applicable to the rural context?
Technical standards:	What standards should be employed?
	How can technical solutions be adapted to different conditions?
Financing:	How should savings and credit systems be managed?
	What is the role of the community in ensuring financial sustainability of sanitation systems?
	How to deal with the problem of poverty, and the need for subsidies?
Changing behaviour:	To what extent does successful sanitation development depend upon people's attitudes?
	How can attitudes and behaviour be changed?
Political context:	To what extent does the political context determine the possible solution to sanitation problems?
	What is the agenda of the international banks?

How do the banks and other ESA influence institutional interests and affect the potential for alternative approaches?

4.2 Recommendations

These issues were clustered into four issue groups or themes, elaborated by work groups and discussed in plenary. The conclusions which emerged are summarised below:

4.2.1 Role of User Communities in Urban Sanitation

The case studies demonstrate that low-income user communities play an important role in the provision of local sanitation services. This contribution can be rendered significantly more effective through appropriate organisational and technical support. In most cases, mediation is required which links community-based activities with those of government authorities and other actors. NGOs play a vital role in such mediation.

The cases of the OPP and the YDD's self-help family toilet scheme illustrate that community engagement arises not only from needs, but equally importantly from people's aspirations and goals. Minimal affordable sanitation solutions seldom constitute an adequate basis for mobilising sustainable community efforts.

4.2.2 Relationships Between Users, Governments and Private Sector Actors

Sanitation services which meet the demands of low-income communities may be promoted in many different ways These aim, to varying degrees, at a) ***improving the capacity of user groups*** to manage of local sanitation development, or b) ***adapting service supply processes*** to the specific demand characteristics of each locality. The former "bottom-up" approach is represented by the OPP and the Micro-Enterprise waste management scheme; the latter, "top-down" approach is illustrated by the Strategic Sanitation Planning (SPP) approach and, to a lesser degree, the Self-Help Family Toilet scheme.

While both directions may be effective, each has specific limitations:

a. the "bottom-up" approach for ***improving self-management capacity*** encounters technical constraints regarding the onward transfer and disposal of waste as well as organisational limitations regarding the up-scaling and expansion of schemes.

b. the latter approach for ***improving demand-orientation*** and responsiveness of supply processes often fail to provide affordable local facilities, ensure user "ownership" or attain sustainable levels of cost recovery.

To overcome these limitations, more effective co-operation is needed between government authorities and communities. The case studies demonstrate that such co-operation is often very difficult to achieve. The cases indicate, at the same time, that co-operation may be most effectively promoted through the ***involvement of private sector*** actors, including formal and informal enterprises, community-based micro-enterprises and NGOs with private sector character-

istics. While it is often neglected, the linkage between communities and private sector actors is of crucial importance.

The role of the final stakeholder, external support agencies (ESA), was only touched upon during the Workshop. It was apparent, at any rate, that this role cannot be central. Overhead support, sharing of programme development risks, policy promotion and certain forms of technical assistance are promising forms for ESA contributions. The cases of OPP and YDD indicated that it is not easy for ESA to provide development inputs without disrupting the balance of responsibilities between local actors —communities, informal private sector actors and authorities— upon which effective low-cost sanitation depends.

4.2.3 Appropriate Technology and the Access to Credit

Whatever the organisational set-up, sanitation development depends upon appropriate and affordable technical solutions. The options available to sanitation users must be affordable, upgradable and amenable to community involvement in the phases of planning, implementation, operation and maintenance.

Furthermore, appropriate sanitation solutions often require innovative credit systems to mobilise the needed investment capital. Important characteristics include: i) linkage between the informal and formal financial systems, ii) use of risk-sharing social collateral arrangements, and iii) employment of informal local organisations to lower loan servicing costs.

4.2.4 Scaling-Up and Replication of the Approaches

There are apparently a large number of positive experiences and successful models of sanitation development. To establish a more solid basis for up-scaling and replicating successful approaches, better ways are needed for measuring success. Operational definitions of effectiveness and sustainability should be clarified, for example, and applied to the cross-analysis and assessment of available experiences.

The measurement of success is rendered more difficult by the fact that up-scaling commonly implies significant transformations in the model, as activities evolve from one "shell" or context to another. Criteria or measures which are relevant at one level may not be adequate to the next. Understanding of the process thus requires more effective ***tools for learning*** which comprise efficient methods of monitoring the essential indicators and describing essential organisational and functional features through successive phases of development.

Finally, the available lessons are often drawn from relatively short-term experiences. More consistant and long-term application of learning tools is required.

Annex 1: AGUASAN Workshop 11/95: Programme

	Morning	Afternoon
Mon. 26.6.	**Arrival** - First informal contacts - Welcome - drink	**Opening** Programme and objectives personal presentation of participants **Introduction** - SDC policy - Clarification of terms in the context of urban sanitation - Influence of ethnological and social inhibitions and constraints related to waste - Collection of questions
Tue. 27.6.	**Case studies** - Presentation of case studies - Feedback to ressource person - Collection and identification of key issues - Forming of working groups and organization of group work	**Case studies** - Group work on the presented case studies - Necessary framework conditions for the presented cases - Discussion of the identified issues - Visualization of the results
Wed. 28.6.	**Presentation of group work** - Discussion and collection of answers - Comparison of the different approaches - Definition of issues for in depth discussion **Introduction to the excursion** - General information	**Excursion** - Visit to several sites related to sanitation and waste disposal in the canton Lucerne - Discussion with the responsible people of the plants and within the administration - Exchange of experiences
Thu. 29.6.	**Case studies** - Discussion of the defined issues in groups	**Exchange** - Mutual presentation of the findings with feedback and discussion of the feedback
Fri. 30.6.	**Conclusions** - Reality check - possibilities of application in own working situation - Summary of th findings with a special focus on social implications	**Looking back and forward** - Possible topics for the next AGUASAN Workshop - Evaluation of the workshop - Closing remarks

Annex 2: Participants of the 11th Gersau Workshop

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Annex 3: Summary of Challenges and Responses

	OPP	YDD	ME-SWM	SSP
Challenge: • ***Response***	Psychological barrier perpetuates dependency and prevents people from taking an active role in sanitation/ infrastructure improvement. • *Gov't (SKAA) has accepted the division of tasks between community and government as evolved by the OPP* Appropriate technology for "external works" is still missing: • *SKAA standards have been adapted* • *community contracting and construction supervision* Quality control of external, government sponsored works: • *Communities petitioning for OPP model in their area, demanding a voice in construction supervision.* Building up capacity in other cities to take over the OPP role of support to CBO: • *Identify some existing qualified NGO, provide training at OPP-RTI, work with youth in CBO* Local level (internal) appropriate technology for waste water treatment: • *Try out new design on-site to generate practical experience* Internal resistence from patronage system of local politics: • *NGO interacts with people; information transfer and empowerment.*	Harnessing political cooperation. • *a double programme has been carried out, with and without the government* Convincing the government to follow the new approach: • *Comparative results should demonstrate the superiority of the community-based approach* Sharing the key role on a sustainable basis? • *attracting the private sector* • *involvement of religious organisations* Achieving and enhancing replication of the approach? • *human resource development* • *other?* Increasing private sector involvement? • Improving the engagement of qualified people in a "non-glamorous" subject? • How to limit the functions assumed by the NGO and still remain efficient? • How to measure the success of the approach? • *repayment rate* • *other*	Getting the municipal government involved: • *Participative seminar with local government* • *Selling and demonstrating advantages of the approach* • *Produce data on operational feasibility* Privatisation of service through micro-enterprises: • *Adapt the concept to the requirements of each case* • *Start with a pilot project* Overcoming the resistance of the municipal workers' union: • *Win the mayor's support and "go-ahead"* Cutting off opportunities for corruption: • *Gradually introduce community-managed micro-enterprise* Weak and unclear management capacities. • *Learning by doing* Funding capital investments of the micro-enterprises: • *Promoting the idea; find investors* Defining financial arrangements • *Learning by doing; refer to bank contracts* Ensuring the sustainability of the scheme: • *Use appropriate technology* • *Build on household and community interests* • *Aim at 100% cost recovery.*	Complexity of the planning process: • *Pilot approach* • *open time frame* • *external support based on local consultants* • *appropriate and simple methods for capturing lessions are still needed..* Overcome vested interests of local politicians: • *Limit commercial participation of politicians* • *Sanitation bye-laws need to be adapted...* Overcoming inertia and resistance to institutional reforms; keeping the local government at the center in the face of national government interests • *Retrenchment of public workers* • *Privatisation through the use of contractors* • *Links with other departments in the municipal government must still be established* Sustainability of the financial model, who pays subsidised services?: • *social marketing* • *negotiations with users* • *credit to grand system* • *feasible solution still required* How can the cost of the technology be lowered?: • *Improve the efficiency and quality of public facilities* • *Continued search for affordable solutions*

Annex 4: The Logical Levels

(According to Gregory Bateson and Robert Dilts)

In any context where people communicate and work together, it has proven extremely useful to distinguish what Gregory Bateson and Robert Dilts termed "logical levels". Each of these levels has its own particular characterisics. The distinction is particularly important when dealing with delicate topics such as dirt, waste and human excreta (i.e. shit). Very often the success of a sanitation project depends upon changes of attitudes and/or behaviours of participants and beneficiaries. The logical levels help to explain interdependencies between attitudes, values and beliefs.

Let me first outline the six levels, after which I will explain the specific characteristics of each:

Levels	*Characteristics*
Mission	It defines what a person wants to reach in his or her life, what s/he thinks is the most important to achieve.
Identity	Each person has its specific qualities to form an individual identity To find out, what the components are, it is easier to ask : What is impossible to give up, if I want to remain myself.
Values	You can easily find out what a persons values are if you ask him or her: What is important for you ? (in your work, in your relationships ...) The values are some source of energy or magnet. It helps you understand other people if you know what they are driving at. Examples are: freedom, fun, order, harmony ....)
Beliefs	A belief is a strong feeling of "that's the way it is". Beliefs are orienting our behaviour. They can not be argued about. They are expressed as statements. Politicians are uttering (in public) mostly beliefs and that is the reason why they don't reach agreements. Religions also consist of a special set of beliefs. (Examples in the field of sanitation are. Shit Is dangerous! Shit is a fertilizer! Clear water is clean! Diseases are caused by spirits! ...)
Behaviour	In a given situation there are many different behaviours possible. How you behave depends on your set of beliefs. If diseases are caused by spirits, you cannot prevent them by filtering your water but rather by calming the spirits with offerings.
Situation	Is as it is. It is a given situation, and although the situation is the same for everybody each person behaves differently

A friend once told me about her vacation in the Amazon region:

> *"Did you swim in the river?" I asked her.*
> *"Of course not, the rivers are full of Piranhas; they eat you alive as soon as you step into the water".*
> *"Well, they didn't eat me," I said.*
> *"Maybe there were no Piranhas at your place".*
> *"Look," I said, frowning; "I have lived for four years in the Amazon area and I know what I'm talking about. We even caught them with fishing nets, standing in the water." I tried to convince her, adding more arguments. "If you slide slowly into the water, the Piranhas won't hurt you." But it was of no avail. As long as she maintained her belief that she would be eaten, she would never swim in the river.*

This example illustrates that any behavior is governed by beliefs. If we want to change the behaviour of others, it is indispensable to alter their beliefs first. To do this, it is usually necessary to bring the discussion to the level of values. Successful training programmes and information campaigns need to pay attention to the hierarchy of logical levels.

Annex 5: Topics Proposed for the AGUASAN Workshop 1996

1. Design of garbage disposal sites
2. Application of technical procedures
3. Gender issues in planning and research
4. Water resource management
5. Models of contractual agreements
6. Complexity of governance
7. Waste recycling methods
8. Decentralising waste disposal
9. Government structures and their effects on development
10. Values and their consequences
11. Capacity building in the public and private domains
12. Quality and rrrefinement in planning
13. Social marketing
14. Legal aspects; the legal framework
15. Ecolotical aspects
16. Financial aspects: savings and loan systems
17. Small industries and waste management

Annex 6: References

Brown, Ato, "Strategic Sanitation Planning and Management: the Kumasi Experience", Kumais, 1995

Giesecke, Ricardo, "Solid Waste Micro Enterprise for Collection and Transport for the Lower Income Areas of the Cities of Cucuta and Los Patios", Lima, 1995

Obeng, L. A. and Locussol, A.R , "Sanitation Planning: a Challenge for the 90's", Remarks presented to the Union of African Water Suppliers Congress, Cotonou, Benin; UNDP/World Bank Water and Sanitation Program, February, 1992.

Rahman, Perween and Rashid, Anwar, "Partnership in Ddevelopment- Role of Actors, Constraints, Good Practices and Lessons Learnt; Experience of OPP-RTI's Low-Cost Sanitation Programme", OPP-RTI, Karachi, June 1995

Schübeler, Peter, "Urban Sanitation: the Challenge to Communities, Private Sector Actors, Local Governments and External Support Agencies; Introduction to the Workshop Theme", AGUASAN, Zürich, 1995

Schübeler, Peter, *Participation and Partnership in Urban Infrastructure Management*, UMP Paper No. 19, (expected publication, Dec. 1995)

Soedjarwo, Anton, "Case Study: Self-Help Provision of Family Toilet in Yogyakarta Urban,"Yogyakarta, 1995

Swiss Development Cooperation, *SDC Sector Policy on Water Supply and Sanitation*, Series SDC Sector Policies, May 1994

Swiss Development Cooperation, *Urban Development Policy,* Series SDC Sector Policies, June 1995

UNDP, "Integrated Waste Management and Resorce Recovery Program, 1981-1990", UNDP Termainal Report, August 1994

Previous AGUASAN Workshops

1.	**Appropriate Technology in Water and Sanitation**	**1984**
2.	**Water Decade**	**1985**
3.	**Participation and Animation**	**1986**
4.	**Sanitation and Health**	**1987**
5.	**Operation and Maintenance**	**1988**
6.	**Monitoring and Evaluation**	**1989**
7.	**Sustainability of Drinking Water Supply and Sanitation Projects**	**1990**
8.	**Communication in Development Cooperation**	**1991**
9.	**Water and Sanitation Knowledge System**	**1992**
10.	**Water is Not a Free Resource (anymore): Who Pays?**	**1993**
11.	**Sustainable Water and Sanitation Projects through Fair Negotiations**	**1994**

(German language reports —starting from 1988— are available from SKAT; summaries are available in English and French)