



COMMUNITIES TAKE CHARGE OF LOCAL SANITATION FACILITIES

Chak-7jb, Faisalabad, Pakistan
(October 2001)

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Front Cover: Neighbourhood-C in Chak-7jb: Community members proudly showing-off their sewerage system (See back cover for "before condition")

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FOREWORD



This research is one of a very interesting range of case studies that are currently being undertaken by Faisalabad Area Upgrading Project (FAUP) based upon its seven years of experience of working in four pilot project katchi abadis and slum areas of the City. The context of this study is environmental improvement within low-income areas of Faisalabad City and focuses on the integrated and inclusive approach to development so that sanitation facilities are available for all.

Although, a very large portion of the population of Pakistan resides in rural areas where the sewerage systems tend to have independent outlets and are comparatively cost effective, there are an increasingly large number of people who reside in the urban areas where the sanitation systems require a more holistic and integrated approach to development.

A key partner of FAUP has been the Water and Sanitation Agency (WASA) Faisalabad, and this document clearly shows that one of the key findings of the project is that it is possible to work through a government line department, be responsive to community demand, use government rules, regulations and staff and still work in an equitable and transparent partnership with community members

Furthermore, the study provides valuable insight into a number of strengths and weaknesses of working to improve the sanitation of katchi-abadis and also suggests that the Government of Pakistan's Devolution of power programme provides an opportunity to expand the FAUP model to the rest of Faisalabad and Punjab.

This case study will be extremely beneficial for those private and public organisations and institutions, which are about to conceptualise, plan or implement sanitation programmes in partnership with local community members. I am confident that the document will be a valuable asset to other professionals, researchers and planners.

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October 14th 2001

PREFACE

The ancient civilisation of Pakistan like Harappa and Moenju Daro had developed and maintained one of the best sanitation networks in this part of the world and the ruins of these civilisations are testimonial to these systems. It proves that effective and efficient sanitation systems have always been a priority need of communities since the very beginning. In the 21st Century, the provision of a good sanitation system remains a priority need for many communities and is regarded as one of the most important indicators to measure socio-economic development status of a society

Faisalabad Area Upgrading Project (FAUP) has been working in Faisalabad City since 1994-95 and has focused on devising and testing appropriate government-community driven models for improving the quality of life for the poor, the poorest and the most vulnerable in society.

Improving the sanitation network is one of the most significant components of the model and involves the active participation of organised community groups at the identification, planning and implementation of projects. The involvement of beneficiary communities in the development initiative has been a key to the successful implementation of the numerous sanitation projects undertaken as part of FAUP. A process approach to development has been adopted and has involved organised community groups to be enabled through specific project level interventions and develop their capacity to undertake local level development projects like sanitation.

The case study highlights the relationship between improving environmental sanitation conditions and health improvements in community members as well as transforming the behaviour of people to become more aware so that they can indeed make a difference, if they work collectively.

The report is the result of obtaining information and cooperation from all FAUP team members but a special mention needs to be made of the Chak-7jb team, who have undertaken much of the data gathering exercise. Furthermore, we would like to acknowledge the complete support of Dr. Tariq Sardar, (Additional Project Director for FAUP) who has provided continual encouragement and support for the completion of the case study.

We wish to thank PIEDAR, Pak-CDP and ASB for allowing us to reproduce their cost estimate sheets.

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EXECUTIVE SUMMARY

Pakistan's total population is estimated as being about 140.5 million people and an urban growth rate of about 3%. It is further estimated that about 38% of the urban population live in Katchi Abadis and less than 50% of the population has access to sewerage and sanitation facilities. Over 200,000 children die in Pakistan every year because of the lack of hygienic conditions.

Faisalabad is the third largest City in Pakistan and second largest in Punjab. Despite Faisalabad's relative prosperity, infrastructure provision is below average for urban Punjab, particularly for water supply, sewerage and sanitation facilities. Only a third of the housing units have access to municipal piped water and 45% to 48% are connected to the sewerage system. There is an acute shortage of housing units which has contributed to an increase in the Katchi Abadis and led to a further deterioration in living conditions in these areas.

Faisalabad Area Upgrading Project (FAUP) has supported a variety of interventions to improve the quality of life of four pilot communities in Faisalabad. The upgradation & rehabilitation of environmental infrastructure of these areas in an equitable partnership with the local communities has been a major activity. Under this segment, the improvement of the sewerage systems has had a pivotal role to play.

FAUP has focused on developing sewerage systems based on full and active community participation philosophy. This model has proved to be hugely successful and FAUP has found that community participation has ensured the quality of work, transparency of resources utilisation and its accounting process. Furthermore, involvement of organised communities at the identification, planning and implementation stages created ownership and proper use and sometimes, maintenance, of the facilities. Using appropriate engineering design and specifications (based upon the OPP model) has enabled many community members especially those resident in very low income areas to actively participate in tertiary level sewerage projects. It must be stated here that secondary level sewerage projects have been constructed using the full Water and Sanitation Agency (WASA) standards and specifications.

Nearly all the tertiary level sewerage projects that have been undertaken by FAUP are very much responsive to demand from the local communities i.e. they take into account the knowledge and concerns of the local communities. Furthermore, there are cases where the FAUP team has tried to pass on their lessons from other various projects being /having undertaken in other parts of

Faisalabad and Pakistan and the local communities have not agreed with the team because of being illinformed by a fellow community member e.g. laying a 12 inch diameter pipe when a 9 inch would be more than adequate or requiring many more manholes because communities have demanded that the manholes spacing should be about 30 feet when in fact manhole spacing at 60 feet would have been adequate. Where communities have listened to advice the sub-projects have saved money.

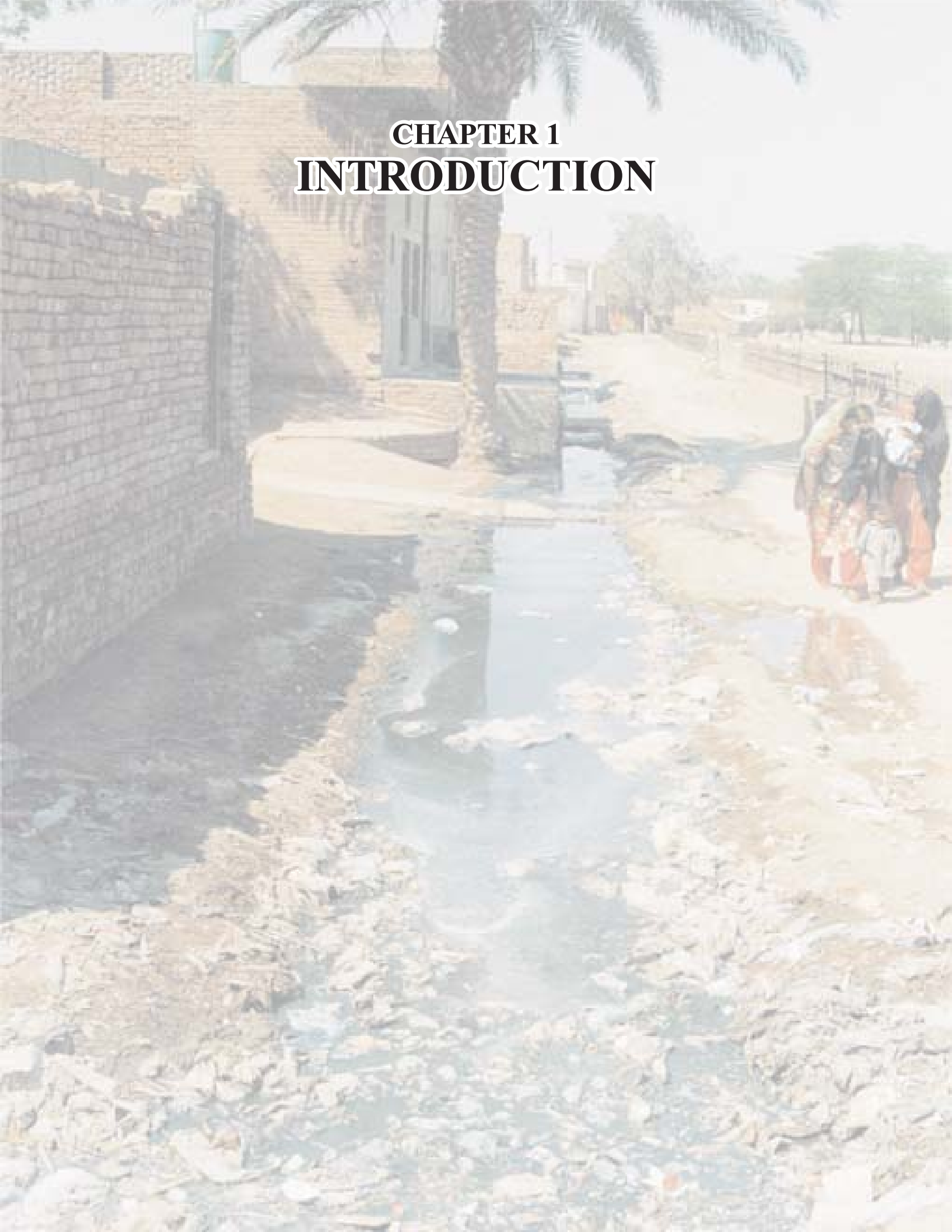
Realising the advantages and benefits of community participation, the government of Punjab has given legal coverage through Punjab Local Government Ordinance, 2001. Infact this means that in the future all Union Councils implementing tertiary level projects are to adhere to very similar principals that FAUP has been implementing over the last seven years. The beneficiaries/ communities are required to raise their share towards the cost of all local developmental projects. To date in Chak-7jb the local communities have contributed about Rs. 500,000 (over a period of 7 years) towards the tertiary level sewerage projects. This amount has been matched by FAUP.

A key innovation of FAUP is that the project has been planned, designed and executed by Government of Punjab officers (on regular government salaries), contract staff (also on government salary structure) in very close partnership with low income communities (monthly income per household between Rs.1500 to Rs.2000).

The case study focuses mainly on how those communities that have been properly organised and trained have turned out to be powerful, equitable partners to Local Government. The active participation of these communities with government staff on projects have most definitely changed the deplorable conditions that were found in the four pilot project katchi abadis and slum areas in 1994 to something that has had huge positive impacts on the improvement of the health conditions of the residents. Just as important has been the improvement of the "feel good" factor that is now quite obvious. There is also evidence to suggest that although these low-income communities have had to contribute towards tertiary level infrastructure, it has in fact reduced their expenses on medical costs and it has increased the cost of the land and property.

It is the belief of the FAUP team and many others that the FAUP model of active participation between local government and communities can and indeed, should be replicated by Union Councils in Faisalabad and all over Pakistan.

CHAPTER 1 INTRODUCTION



1.0 INTRODUCTION

1.1 Faisalabad District and Chak7jb

Faisalabad District consists of six Tehsil Councils and 289 union councils (Table 1-1). Faisalabad is the third largest city of Pakistan. Its population, as per census of 1998, is around 1.97 million. Faisalabad grew rapidly following partition to become an agricultural service and processing center. The city experienced not only rapid but uneven physical growth as a result of industrialization and piece-meal segmented development. The rapid growth in population has led to a proliferation of urban slums with very poor conditions of housing, sanitation and health, lack of basic physical infrastructure and growing environment problems.

Chak-7jb is the largest of the areas of Union Council 191 with a population of about 16,000, the others being Usman Town, Shahzad Town and Farooq Town having populations of about 800, 2,400 and 1,000 respectively. Mostly labourers live in these areas who have very meagre incomes, ranging between Rs. 1,500 to Rs.2,300 per household per month.

Table 1-1: Composition of Faisalabad District

Tehsil	No. of Union Councils	Total Union Councils
Chak Jhumrah	1-15	15
Jaranwala	16-72	57
Tandlianwala	73-100	28
Samundri	101-128	28
Faisalabad Sadar	129-176	48
Faisalabad City	177-289	113
Total:		289

1.2 Faisalabad Area Upgrading Project

Faisalabad Area Upgrading Project (FAUP) is jointly funded by the Government of Pakistan (20%) and the Government of United Kingdom (80%) -the latter being a grant. The project uses the process approach to development and is synonymous with community participation approach. The process signifies an interactive dialogue with local communities and ensures that a diagnostic process is followed in the identification, planning, resources mobilisation and implementation of projects.

The Faisalabad Development Authority is the Government implementing agency.

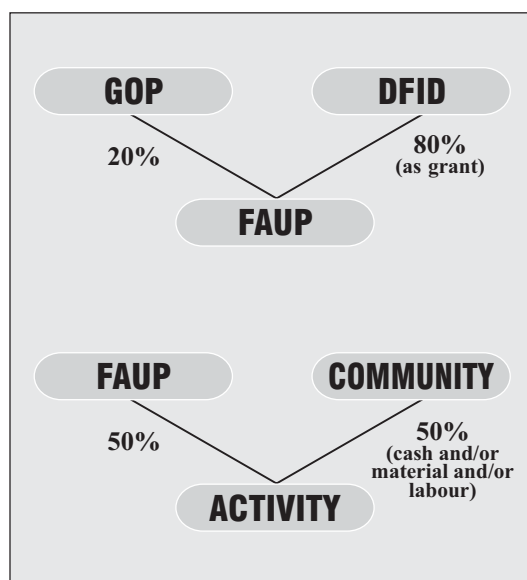
The situation of Faisalabad Area Upgrading Project areas as of May 2001 with respect to sewer facilities can be viewed from the following facts.

Availability of tertiary sewer facilities = 26 %
Households
Availability of secondary sewer facilities = 30 %
Households

Funding

All projects with the communities (i.e. at the tertiary level) are undertaken on a cost-sharing basis (see Figure 1-1). With the exception of education related activities, in all the other sectors i.e. health, environment infrastructure (water, sanitation, paving, solid waste) and small enterprise development the partnership with the communities is on a 50%-50% cost-sharing basis. In the case of education the communities contribute 15% whilst the project contributes 85% of the funds.

Figure 1-1: Flow of funds in the project



1.3 Participatory Approach to Development

As necessary under the FAUP participatory approach, the people residing in the project area form *Multipurpose Community Organisations* (MPCOs). These MPCOs comprise three levels as described below.

a) Lane Level MPCOs

Starting from the grass root, lane level MPCOs are the first tier in the social organisational process.

b) Neighbourhood Level MPCOs

The lane level MPCOs are further developed into intermediate apex level organisations and called

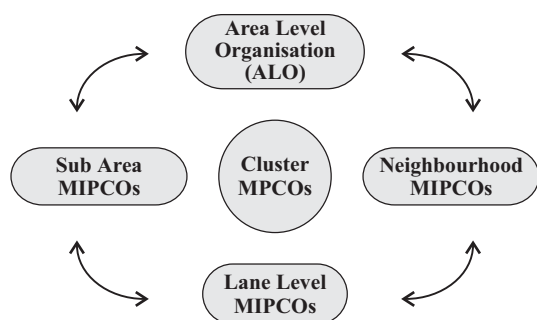
either neighbourhood, cluster or sub area organisation. All these MPCOs are at par with each other and have been named according to the local situation, mostly based on geographic proximity or division of an area.

c) *Apex Level Organisations*

At the field area level, the apex organisation is the area level organisation (ALO), which represents all the cluster and neighbourhood organisations of an area.

The formation process of MPCOs of various levels is shown in Figure 1-2.

Figure 1-2: Various levels of MPCOs in FAUP Area



This social organisation structure has evolved in the project area over a long period of community interaction.

1.4 The Process Approach to Development

The process approach to development (See box 1-1) is synonymous with community participation approaches as the process signifies an interactive dialogue with local communities and ensures that a diagnostic process will be followed in the identification, planning and implementation of projects. Since the commencement of the project, the involvement of beneficiary communities in development initiatives is considered as a key to the successful implementation of any project. The need to involve the community was realised as a result of projects which were poorly conceived, badly maintained and had a low level of beneficiary commitment. Furthermore, over the last few years, there has been a growing understanding that without the community sharing in the design, implementation and maintenance of projects the Government will be unable to ensure the technical viability and financial feasibility of

projects. In this sense, adopting the process approach ensures greater success of projects.

Box 1-1: The Process Approach in FAUP

In the process approach the community is involved as a collective body with specific responsibilities. Thus it develops as a local grass roots organisations which can share in the task of development. The community is enabled through specific project level interventions to develop its capacity to undertake local level development initiatives in other areas. It is for this reason that it is seen as a "process" rather than as a one time intervention. Thus the initial project can be seen as an entry point to a longterm path towards development and growth. It is a selfsustaining approach with a long term development perspective.

The process approach is a shared approach in which a flexible yet firm development approach is adopted. The community is given primary responsibility for internal decisions and terms of partnership specifying the obligations and rights of all parties is given. The project design, implementation and maintenance are undertaken in a manner which is sensitive to the management and financial constraints of the community. It is thus a flexible and sensitive approach to development.

In the process approach, the field staff is the critical tier as it is primarily responsible for ensuring regular communication and interaction between the community and the project staff.

The process approach as visualised by the FAUP has several major characteristics:

Precise inputs and immediate objectives are identified by communities in the project area in consultation with PMU during implementation;

Design, appraisal and implementation are participatory, recognising the need for local commitment and the essential role of the communities within the project area in defining, agreeing and participating in development activities

The initiative rests with the communities and thus ensures that any project that is undertaken will have the commitment of the beneficiary population

1.5 Definition of Infrastructure Sewers used in FAUP Pilot Project Areas

Tertiary Sewer

Infrastructures serving at lane / street level are called tertiary level sewer. Community through MPCOs contributes 50% towards implementation cost and takes responsibilities for its implementation and subsequent maintenance.

Secondary Sewer

Infrastructures serving a number of lanes / streets at cluster level / neighbourhood level and acting as collector of waste liquid of tertiary level projects is

called secondary sewers. Communities do not share any cost towards secondary level initiative. However communities are involved in the identification of needs & monitoring to ensure that secondary projects are executed through line agency as per their agreed suggestions.

Primary Sewer

These infrastructure mains, which serves at city level, are called primary level sewers. Although these mains facilitate communities, local level initiatives but mainly planned, designed and implemented through line agency.

The sanitation projects are designed around three inter-connected levels of infrastructure improvement comprising tertiary, secondary and primary systems of the sanitation in the urban areas. The tertiary sewerage projects are implemented by the MPCOs, whereas secondary and primary sewerage networks are implemented by WASA. It also takes major responsibility to operate & maintain all the three levels of project.

1.6 Objectives of FAUP for Sanitation

The objective of FAUP for sanitation is three fold:

- a) To demonstrate a replicable model for the delivery of urban environmental infrastructure services to low income areas.
- b) To improve the quality of life of the people in low income areas of Faisalabad and;
- c) To contribute to Government of Pakistan's objectives of encouraging community participation, privatisation and self reliance.

1.7 Strategy to Develop Sanitation System

FAUP has adopted the following strategy to develop sanitation system in its areas.

Communities are made responsible for construction of tertiary sewers and septic tanks for individual houses with technical assistance from project engineers. The communities will contribute 50 % cost of the tertiary sewers in cash and/or kind.

Around seventy five percent houses in the FAUP areas will be connected with sewer system at the end of completion of the project.

The detailed designs of the secondary sewers are to be made with active involvement of communities at the conceptualisation, design and supervision stages.

Other possible sanitation options, such as onplot double-pit latrines, are to be considered, and discussed and developed with communities where appropriate.

FAUP is to support improvements in the primary and secondary infrastructure, which may involve city wide main sanitation systems. This should benefit the whole or a substantial part of katchi abadis and slums of the city.

1.8 The Sponsoring Line Departments

The Water & Sanitation Agency (WASA) of Faisalabad Development Authority (FDA) is the government sponsoring line department for the component of sanitation in urban area of Faisalabad. The WASA is responsible for planning, designing, development & for operation & maintenance of the sanitation system in the city.

It is clear that over the last 7 years, the line departments did not have the resources to address the arising needs of sewerage facilities of a larger population, comprising katchi abadies and slum areas of the city. Therefore, the communities of these areas were deprived of the essential basic facilities of sewerage system. In view of this situation, FAUP has taken an initiative to address this problem using community participation approach. This methodology of development is showing positive results. The case study under review explains efforts of FAUP to support development of sanitation system.

1.9 FAUP Areas

In the first phase, Faisalabad Area Upgrading Project has chosen four pilot areas.

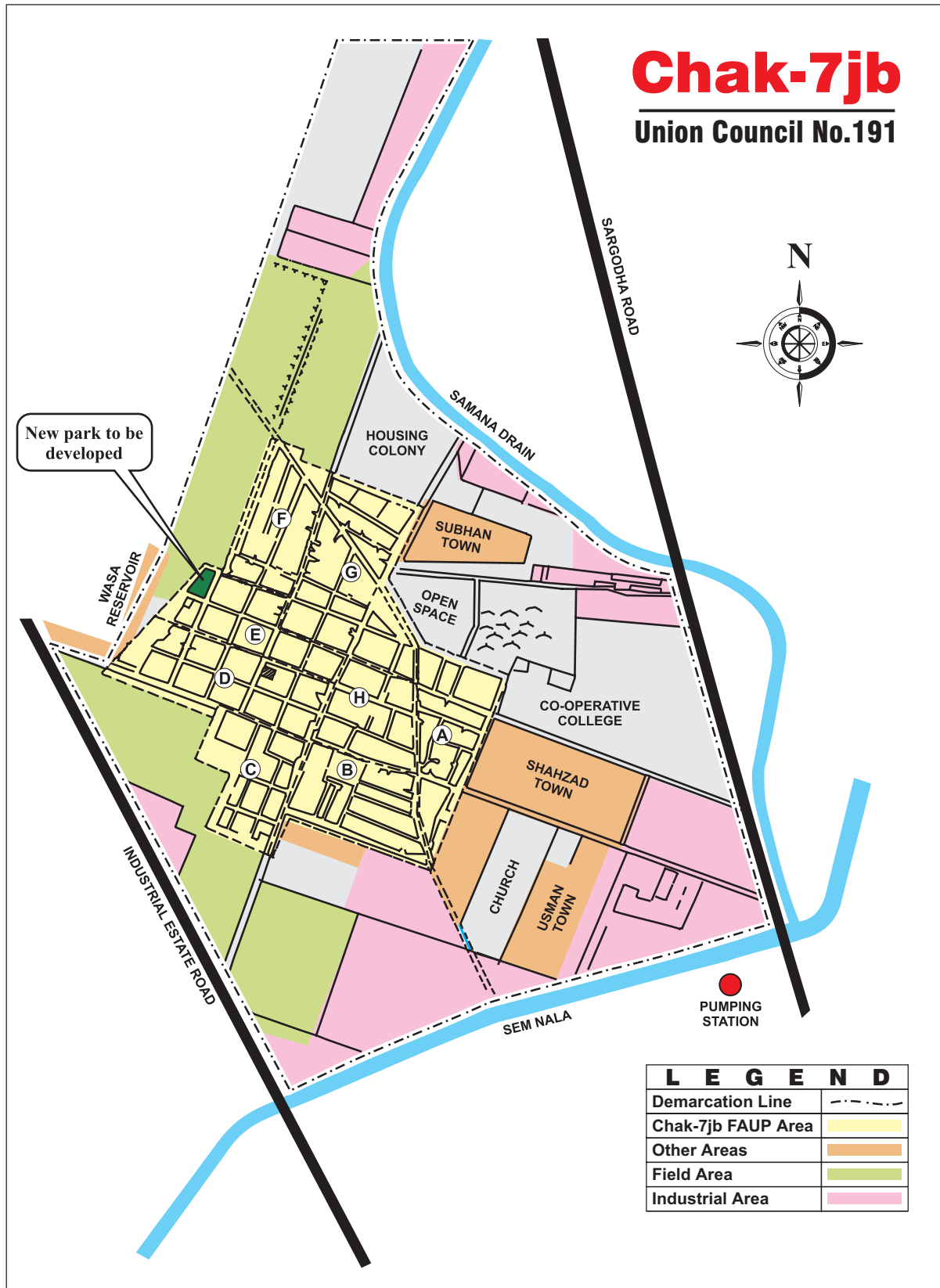
Table 1-2: Demographics of FAUP Pilot Areas

Area	Households	Population
Chak-7jb	2,074	14,684
Islamnagar	2,725	19,293
Noorpura	1,630	11,540
Shadab Colony	1,141	8,078
Total	7,570	53,595

Figures as of December 1999.

Table 1-2 shows the comparative population and number of houses of each of the four areas, that Faisalabad Area Upgrading Project is presently working in. While preparing and designing the overall development plans of secondary and tertiary level sewerage projects, the population of an area and its future growth has been fully considered. In particular, the capacity of the secondary sewerage system has been designed in such a manner that it will cater to the needs of the community over a long period of time.

Figure 1-3: Extent of new demarcation lines for union Council 191 - Chak-7jb (August 2001)



CHAPTER 2
INTERACTION
AND INTERVENTION



2.0 INTERACTION AND INTERVENTION

2.1 Chak-7jb Area Conditions Prior to Implementation of sanitation system

In order to ease community mobilisation and assist in the formation of structured organised groups, Chak-7jb was divided into eight parts (neighbourhoods). The consideration of formation of social organisations in these neighbourhoods included parameters like common needs / problems, social stratum, caste and clans, geographical proximity and similarity of physical conditions of each pocket.

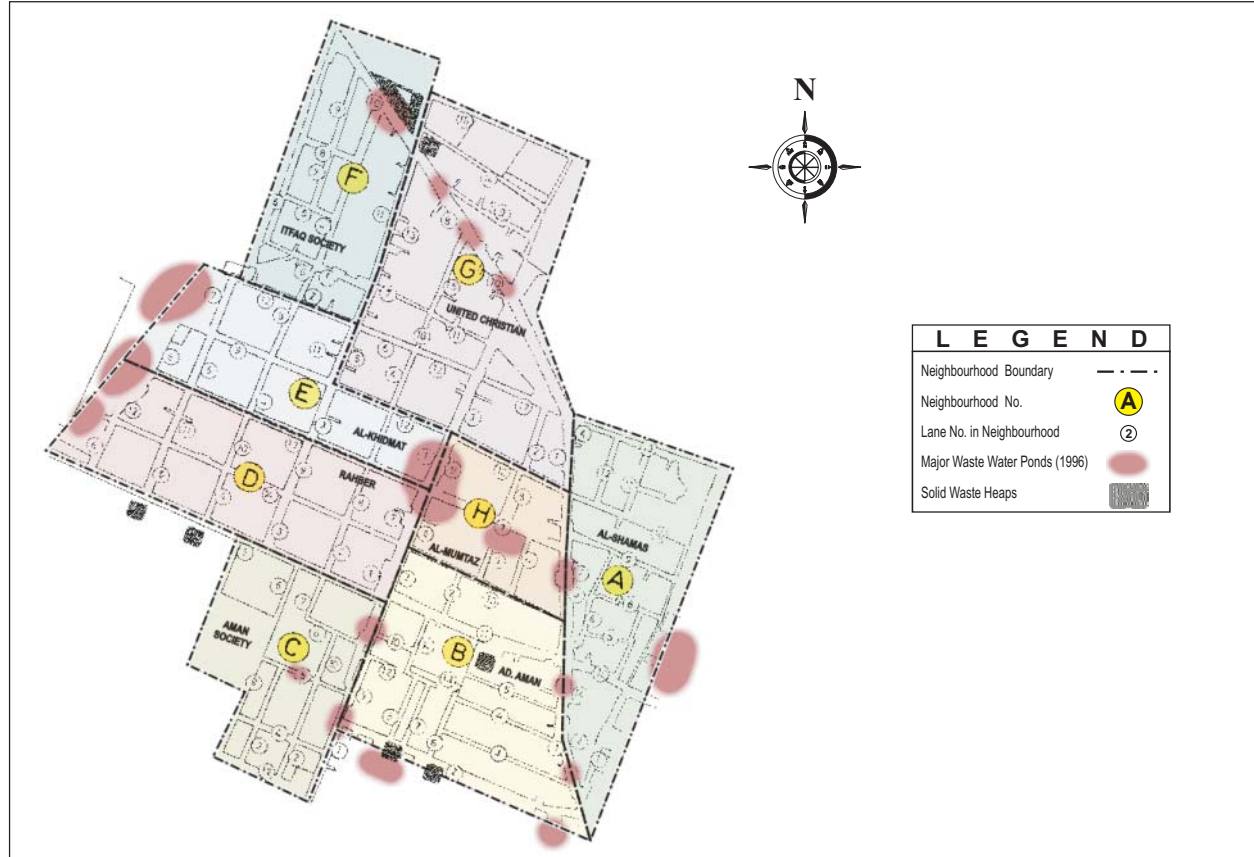
One of the communities residing in Chak-7jb is in Neighbourhood-C (NH-C). This area is one of the most under-developed areas of the pilot areas of Faisalabad Area Upgrading Project. The great majority of the residents have a low income. Profile of this area is shown in Table 2-1 and it illustrates the socio-economic conditions of the community prior to the implementation of sanitation system.

Table 2-1: Profile of Chak-7jb (Overall)

Total Houses	1,952
Type of Families:	
Joint	26.68 %
Nuclear	73.32 %
Average Persons Per House	7.37
Average Range of Income (Majority) (Rs.)	1,000 to 3,000
Average Income (Rs.)	2 510
Average Area Per House	5.63 Marlas
Drinking Water Facility	
WASA Supply	Nil
Boring	
(Individual / common)	94.38 %
Water carried in cans	16.55 %
Disposal of Water	
Open Plot	17.80 %
Drain	82.53 %
Sewer	2.63 %
Solid Waste Disposal	
Street	12.60 %
Open Plot	86.82 %
Filth Depot	0.44 %
Use of Toilet	
Fields	18.60 %
Septic Tank	45.55 %
Drain Connected	13.02 %
Sewer Connected	2.63 %
Information Not Available	20.20 %

Note: Some houses have dual arrangements

Figure 2-1: Chak-7jb village part of Union Council 191 showing the sanitation conditions in 1996



2.2 Organised Communities of Chak-7jb

Subsequently to awareness created by FAUP field staff, a number of multi-purpose organisations (MPCOs) were formed. In June 1998, 38 MPCOs were functional. Of these, 13 were male and 16 were female organisations working at the lane level. Rest of the four functional organisations were neighbourhood level MPCOs and this included one female neighbourhood MPCO. Further details can be found in "*Performance Evaluation of FAUP MPCOs*".

The situation of social organisation in 2001 has changed - the total number of male MPCOs has increased to 24 whilst the number of female MPCOs has grown to 21. Out of the total 24 male MPCOs, one is an Area level MPCO and 9 are neighbourhood /cluster MPCOs. Furthermore, there are now four female MPCOs at neighbourhood level whilst the and 17 lane level female MPCOs are dormant. All these MPCOs are active. The functionality of an MPCO has found to be dependant upon the nature of activities it is dealing with.

2.3 S.W.O.T. Analysis

The SWOT analysis has been used by FAUP to assess the capabilities of the sewerage project and it's activities in subjective rather than in precise financial or numeric terms.

The *Strengths* are those capabilities which have supported and developed the project and/or activities to its present achievements. They can be referred to as the success factors. It is extremely important that these are recognised and are not diluted or allowed to fall into decline.

The *Weaknesses* are those characteristics which have detracted from performance and demonstrate for what reasons further growth and stability have not been realised. Weaknesses are strengths in the making. By dealing with them in a positive way they can be turned or converted into positive dynamic attributes.

Both strengths and weaknesses are under the control of FAUP management. It is therefore possible, from within the internal resources alone, to develop the stronger capabilities further and to plan to reduce or to eliminate those which distract and produce a negative effect.

The *Opportunities* are those places or services external to the project into which an impact would be made providing sufficient impetus and resources are applied.

The *Threats/Constraints* are those factors, external to the operation of the project, which limit growth and development, for example, line departments unable to deliver their part of an agreement on time and to budget; GoP unable to create an enabling environment to allow FAUP to flourish; DFID's freeze of aid to Pakistan etc., Both opportunities and threats/constraints exist without reference to the projects own resources but none-the-less can have significant impact on the project. Positive actions are required to take advantage of the former and also to minimise the impact of the latter.

A typical generic example is shown in Box 2-1

Box 2-1: S.W.O.T. Analysis applied to implementation of neighbourhood sewerage systems in Chak-7jb

Strengths

- The implementation of sewerage projects at the neighbourhood level is found to be the most economical since all the material, and services of masons / contractors is procured / availed collectively for a number of projects of the neighbourhood. Hence, economy of scale tends to bring cost effectiveness.
- Implementation of sewerage projects at the neighbourhood level ensures integration of all the connected tertiary projects.
- The neighbourhood level sewerage system is found to be easier to maintain.
- A sewerage system of neighbourhood is the most appropriate level from the point of view of size and system of users to create awareness among users.

Weaknesses

- Collection of community share at the neighbourhood level takes a longer time to complete compared to lane level projects. It is much more difficult for the MPCO's and field teams to raise community share for neighbourhood level sewerage system.
- The physical implementation process of sewerage projects at the neighbourhood level is more time consuming compared to lane level projects.
- Integration of neighbourhood level sewerage system with other neighbourhoods or area level systems requires considerable efforts of designing and assessing technical viability.

Opportunities

- A definite model for replication at large scale especially in light of the Government of Pakistan's Devolution of Power to the Union Councils Programme
- The process provides new learning on account of pooling resources and effective community participation.
- Creates social cohesiveness and integration among communities.
- It creates capacity and capability among community members to implement sewerage projects at neighbourhood level.

Threats/Constraints

- Negation of lane level community organisations. These forums may not flourish in the right direction for integrated development process.

2.4 Community Vision

It is important to stress that the community already had mechanisms of resolving community problems through collective efforts -albeit in an

unstructured manner. FAUP streamlined these mechanisms into a structured forum and facilitated the community to use these forums for development of their areas.

2.5 Community Organisations

A detailed breakdown of the profile of all neighbourhoods in Chak7jb is shown in Table 2-2

2.5.1 Aman Development & Welfare Society (AD&WS) in NH-C, Chak-7jb

The Aman Development & Welfare Society is one of the neighbourhood level MPCOs of Chak-7jb area created on 96' October 1996. The MPCO comprises 9 members in its executive body and 110 members in its general body. Originally the AD&WS was formed at cluster level, covering a population that included NH-C, a part of NH-H and NH-B. All these neighbourhood level community organisations identified felt needs and subsequently assigned them different priorities. The felt needs included the following:

- Water supply*
- Provision of sanitation facilities*
- Provision of electricity for some houses*

Street lightening Bricks pavement of streets

It was found that amongst the above list that access to clean and sweet drinking water was a common need of all the neighbourhoods.

As a result, in 1997 FAUP commenced work on the design and development of the secondary and tertiary water supply network for this project area. Since the need for drinking water was already underway, each neighbourhood at this time decided to reconsider the priority of its other felt needs in that particular neighbourhood.



Photo: AD&WS recruiting a new member

Table 2-2: Detailed breakdown of profile of all neighbourhoods in Chak-7jb

<i>Description</i>	NH-A	NH-B	NH-C	NH-D	NH-E	NH-F	NH-G
<i>Total Houses =</i>	281	277	168	221	184	281	300
<i>Type of Families: (%)</i>							
Joint =	24.51	20.59	24.73	24.19	32.00	37.66	54.55
Nuclear =	75.49	79.41	75.27	75.81	68.00	62.34	45.45
<i>Average Persons Per House =</i>	6.62	6.76	6.77	7.91	7.50	7.19	9.68
<i>Income Range P/House (Rs.) =</i>	1,000-2,000	1,000-2,000	1,000-3,000	2,000-4,000	1000-5,900	1,000-3,000	1,000-5,000
<i>Average Area Per House (Marla)=</i>	5.28	5.11	4.20	6.02	7.37	5.64	8.07
<i>Drinking Water Facility: (%)</i>							
Supply =	NIL	NIL	NIL	NIL	NIL	NIL	NIL
Boring (individual / common) =	98.85	87.50	100.00	90.29	100.00	100.00	100.00
Can water =	1.15	21.31	33.28	21.91	44.00	NIL	NIL
Supply/Boring (Dual Arrangement) =	NIL	(8.81)	(33.28)	12.20	(44.00)	NIL	NIL
<i>Disposal of Waste Water: (%)</i>							
Drain =	66.46	76.24	60.00	99.49	100.00	89.34	91.94
O/Plot =	33.54	23.76	27.83	NIL	NIL	10.66	34.44
Sewer =	NIL	NIL	20.00	NIL	NIL	NIL	NIL
(Dual Arrangement) =	NIL	NIL	(7.83)	0.51	NIL	NIL	(26.39)
<i>Solid Waste Disposal:(%)</i>							
Street =	2.78	16.80	NIL	27.96	20.00	NIL	NIL
O/Plot =	94.44	83.20	100.00	71.53	80.00	100.00	100.00
Drums =	NIL	NIL	NIL	NIL	NIL	NIL	NIL
Filth Depot =	2.78	NIL	NIL	NIL	NIL	NIL	NIL
Information Not Available =	0.00	NIL	NIL	0.51	NIL	NIL	NIL
<i>Use of Toilet:(%)</i>							
Field =	26.04	21.24	18.36	10.65	4.00	25.30	22.22
Septic Tank =	73.96	76.83	41.00	26.28	20.00	NIL	52.78
Drain Connected =	NIL	1.92	20.65	68.08	76.00	74.70	25.00
Sewer Connected =	NIL	NIL	20.00	NIL	NIL	NIL	NIL
Information Not Available =	NIL	NIL	NIL	NIL	NIL	NIL	0.00

As a result of the review of these needs, NH-H and NH-B assigned priority to brick paving, where as, within NH-C, the community members differed in their preferences. However, the majority of members of NH-C prioritised sanitation facilities as their top priority.



Photo: Meeting of Aman Development and Welfare Society

Despite the majority agreement, NH-C remained divided over this issue and so the community members decided to split the AD&WS MPCO into 2 groups -over 70 % of the members from NH-C stayed together and voted to retain the original name of AD&WS whilst the remaining members created a new MPCO. The restructuring process of social organisations, around common interests, took about one year time.

As a result of this process, finally the AD&WS has been reformed as a cohesive and stable social organisation representing majority households of NH-C. Over time the consolidation of communities organisation around common interest is natural phenomena prevailed in most of the community development projects. It is considered a healthy sign of community maturity and sustainability.



Photo: Fund raising meeting by going house to house in NH-C

2.5.1.1 Profile of NH-C Chak-7jb

It can be seen from Table 2-2 that the average household income of this community was very

low, at around Rs.1000-3000 per month per family of 6.77 person. At this level of income, a household has very meagre propensity to save.

Comparative analysis of NH-C with rest of the neighbourhoods of Chak-7jb (refer to Table 2-1) shows that the average household size of NH-C is smaller. It comprises 6.75 persons against overall average of 7.21 persons. The community of this neighbourhood had less average income i.e. Rs.2,592 per household against an overall average of Rs. 3,245 per household of the area. The houses are also smaller as the area of land per house is 4.20 marlas compared to the overall average of 5.68 marlas. The analysis shows that community of NH-C is a poor of the poorest communities.

2.5.2 Carvan Development and Welfare Organisation in NH-F, Chak-7jb

Carvan Development and Welfare Organisation is an area level female organisation based in neighbourhood-F (NH-F) within Chak-7jb. The MPCO was formed on 30th March 1999 and comprises 75 members in its general body and 10 members in its executive body. It's main objectives include: a) socio-economic up-gradation of the women in NH-F and then the rest of Chak-7jb;b) improving the welfare of children and the disable. Carvan members have been instrumental in ensuring that the secondary sewerage networks are laid in Chak-7jb and also in raising funds for the tertiary sewerage projects in NH-F.



Photo: Carvan MPCO holding a regular meeting

2.5.3 Al-Shamas Development and Welfare Organisation in NH-A, Chak-7jb

Al-Shamas Development and Welfare Organisation is a male Chunghar MPCO formed on 30th August 1996 in the poorest area of Chak-7jb and indeed in the complete FAUP pilot project area. It comprises 9 members in its executive body and 160 members in its general body. The main profession of Chunghar community is trash picking, old scrap business and working as labourers.

The MPCO has 3 main objectives namely: a) upgradation of the socio-economic conditions of the Chunghar community; b) provision of education for children of the community and c) developing linkages with NGO's for educational improvement.

The MPCO has not had much involvement in sewerage projects until quite recently as part of a large area level plan for upgradation of the whole area.

2.5.4 Al-Aman Development and Welfare Organisation in NH-B, Chak-7jb

Al-Aman Development and Welfare Organisation is a male MPCO formed on 18th October 1998 in neighbourhood-B of Chak-7jb. It comprises 11 members in its executive body and 30 members in its general body.

The MPCO has 3 main objectives namely: a) to resolve the problems of the area through mutual discussions; b) to establish linkages with line departments and c) to improve the health and environmental conditions of the area.

The MPCO has not had much involvement in sewerage projects until quite recently as part of a large area level plan for upgradation of the whole area.

2.5.5 Rehbar Development and Welfare Organisation in NH-D, Chak-7jb

Rehbar Development and Welfare Organisation is a male MPCO formed on 0 June 1999 in neighbourhood-D of Chak-7jb. It comprises 11 members in its executive body and 55 members in its general body.

The main professions of the community members are farming, retail shops and being labourers.

The MPCO has 4 main objectives namely: a) Improvement of environmental infrastructure; b) build the social interaction among various classes of the area; c) develop linkages with industrialists for obtaining financial assistance and d) rehabilitation programmes for special persons.

The MPCO has been very active in collecting funds and supervising the implementation of tertiary level sewerage projects in its neighbourhood and supervising secondary level sewerage projects in both the neighbourhood and recently in the area as part of a large area level plan for upgradation of the whole area.



Photo: *NH-D members actively going door to door to collect funds*

2.5.6 Al-Khidmat Development and Welfare Organisation in NH-E and NH-H, Chak7jb

Al-Khidmat Development and Welfare Organisation is a male MPCO formed on 16th December 1997 and is spread over neighbourhoodE and neighbourhood-H in Chak-7jb. It comprises 10 members in its executive body and 30 members in its general body.

The main profession found in this area is farming, retail shop keepers and being labourers.

The MPCO has 2 main objectives: a) improvement of environmental conditions in the area and b) construction of additional rooms in schools of the area.

The MPCO has been active in raising funds for the establishment of solid waste systems of the area and the enhancement of educational facilities.

The MPCO has not had much involvement in sewerage projects until quite recently as part of a large area level plan for upgradation of the whole area.

2.5.7 Ittefaq Development and Welfare Organisation in NH-F, Chak-7jb

Ittefaq Development and Welfare Organisation is a male MPCO formed on 18th July 1997, located in neighbourhood-F in Chak-7jb. It comprises 12 members in its executive body and 57 members in its general body.

The MPCO has been active in raising funds for the implementation of water projects; arranging health camps in collaboration with FAUP and implementing an awareness campaign for the necessity for education and health check-ups.

2.6 Change of priority with time

In 1996 most of the communities of Chak-7jb area determined drinking water as their most prioritised need and thus FAUP accordingly designed both the secondary and tertiary water supply networks. The project execution was given to WASA in early 1998 (with complete 100% funding from FAUP) and it was expected that the construction would be completed within 5 to 6 months - unfortunately, it took WASA almost 3 years to complete. This horrendous delay in completion by WASA of the secondary system meant that communities could not undertake the tertiary water projects. This delay resulted in a break down of trust between

communities and FAUP team members as well as a change of priority of the majority of community members from implementing tertiary level water projects to tertiary level sewerage projects.

The local inhabitants were even more united during the rainy seasons when waste water started overflowing onto the streets even more than the usual. Therefore the majority members of most of the local MPCO's unanimously decided to prioritise tertiary level sewerage systems over the tertiary level water projects.



Photo: Community chose sanitation projects as their highest priority

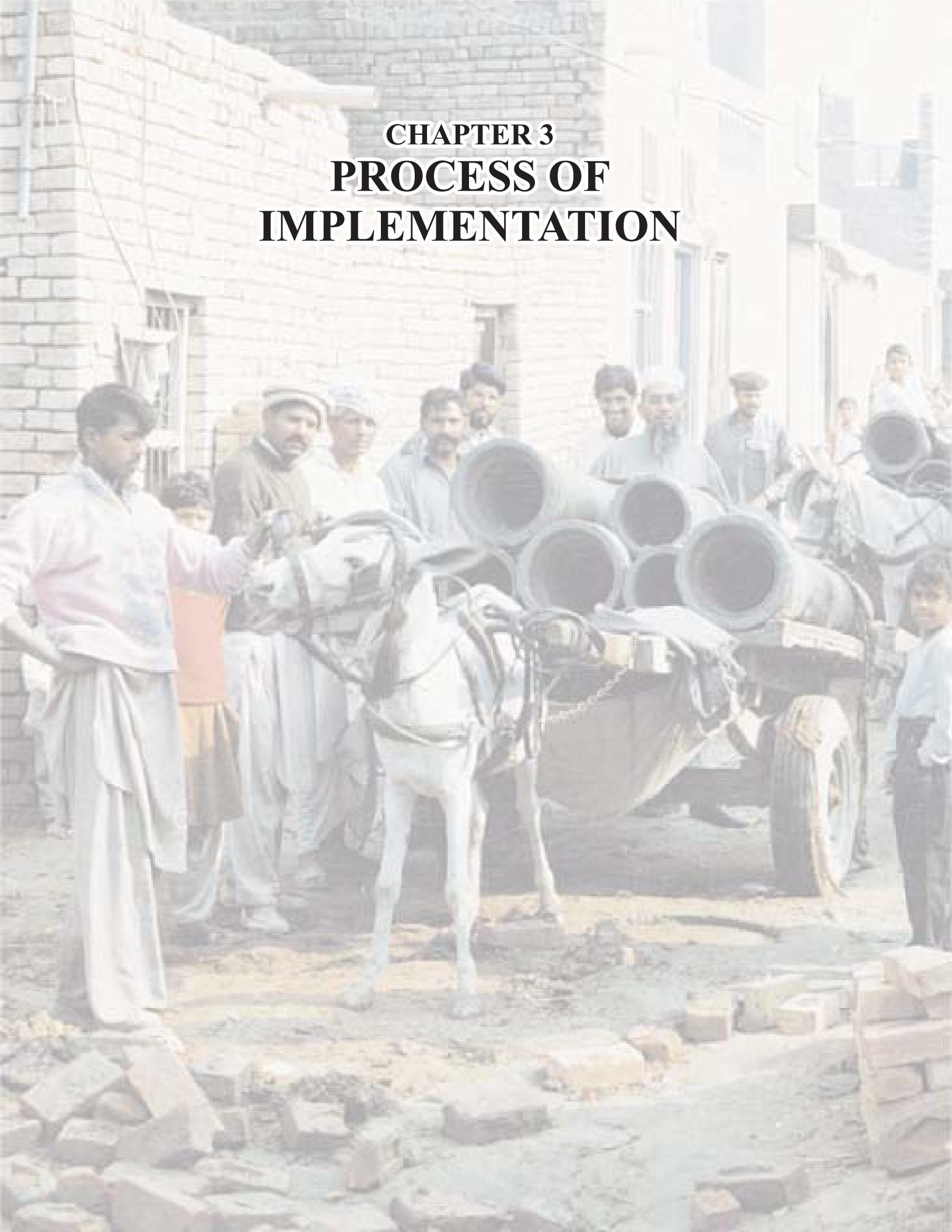


Photo: Condition prior to a secondary level sewerage project in NH-D



Photo: Condition after a secondary level sewerage project in NH-D

CHAPTER 3
PROCESS OF
IMPLEMENTATION



3.0 PROCESS OF IMPLEMENTATION

3.1 Development of Sub-Project Proposals

The procedure for undertaking sub projects (like sewerage projects) in the project areas requires lane level MPCO's or Neighbourhood MPCO's or Area Level MPCO's to first discuss a proposal (often initiated by a member) internally and then with the local FAUP field team. Providing the sewerage proposal is within the FAUP mandate, the FAUP field team comprising social organisers (male and female) and sub-engineer will then conduct a technical, social and economic viability of the proposed sub project. These findings and recommendations are then discussed with the MPCO members. Providing that the majority of members are in agreement with the findings especially with the probable cost to the MPCO then a Terms of Partnership (ToP) is developed, the details agreed upon with the MPCO executive body and then signed by the President, Secretary, Treasurer of MPCO and FAUP officials.

The process is outlined as follows:

After identification of the needs for sewer projects through resolution, the MPCO in its general body meeting nominated a committee with consensus. The role of this committee was to carry out the exact measurement of the sewers along with the FAUP sub engineer.

On the basis of these measurements, cost estimation were prepared.

Based on these cost estimates, the community / per house share was determined and intimated to the general body of the organisation for devising time frame for share collection.

Likewise, in the general body meeting of the MPCO, members were nominated who were responsible to collect the determined share per house.

The designated members of the MPCO prepared the list of houses indicating the neighbourhood, name of the head of the family and address. These members were facilitated by the field team of FAUP to carry out this task.

Then each responsible member maintained record of the share collection from the community. For this purpose, the member issued a receipt to the house which paid the share. The member also maintained a ledger indicating details of all houses in consolidated form.

Time period for share collection varied in these projects. In neighbourhood-C, organisation took about three months to collect the share collection for their five projects.

In the entire share collection process, meetings of the community organisation was convened regularly to keep up the spirit of the members and pursue the target of share collection.

The field team had regular contacts with the executive body members of the MPCOs while these members were responsible to contact the people at household level. In case of neighbourhood-C, general body meetings of the MPCOs were held on a weekly basis which were attended by the field team to keep the mobilisation process alive.

The co-signatories for the joint bank account of the tertiary projects were nominated by the MPCOs through resolution. The other member of these bank account were the social organiser concerned as approved by the FAUP management.

3.2 Community Share

As the ToP is developed, the community is required to commence the collection of community share (50% of the total cost in the form of cash and/or kind) for implementation of the sub project. In the case of NH-C each house was required to pay Rs.500. At the beginning the community response was not positive because although the MPCO executive body became familiar with the process of community participation, the great majority of the people of the area lacked awareness about this and in particular lacked awareness as to why community members needed to contribute financially and/or otherwise. In order to create the awareness the field team in collaboration with the MPCO conducted several meetings with community members at lane level as well as at neighbourhood level to acquaint them of the benefits of the sewerage project and the importance of active participation. With the passage of time the community realised the importance of this and thus began the process of share collection from the community by the local MPCO, Aman Development & Welfare Society



Photo: An active women MPCO proudly shows off its sewerage project

The MPCO had to face numerous constraints in this regard especially with reference to concerns about the community's inability to pay their household amount in one go. In order to speed-up the development works, a well-off community member agreed to deposit a considerable amount (Rs.80,000) on behalf of the whole community. In return, the community members agreed to pay him back the amount in instalments. Implementation plan of neighbourhood-C (AD&WS) is explained in Table 3.1

Some people also contributed their share in kind e.g. by purchasing pipes for the project. The sub engineer of FAUP, as a member of the project implementation committees, verified and ensured that these pipes matched the recommended quality and standard. Despite this, there still remained 12 households that were unable to deposit their share in any form. In this case, some of the well-off community members decided to contribute on their behalf.

3.3 Community sub-project bank account

When the MPCO had the sewerage project approved, in principal, they opened a community project account at their local bank.

A separate account is opened for each project. Community contribution to the project is paid into this account. The FAUP contribution to the sewerage project is also paid into the same account on project approval usually as a lump sum.

3.4 Submission of Sub Project Proposal Document to Project Approval Committee

A detailed sub project proposal is developed jointly by the field team and the FAUP sector specialist (in the case of infrastructure, this is the FAUP Senior Engineer).

Project implementation starts once the community had deposited the required project cost into the account and once the project had been approved by the FAUP Project Approval Committee (PAC).

3.5 Release of funds by FAUP

Payment to the community sub-project bank account is made by a crossed cheque signed by the Additional Project Director and countersigned by the DFID Project Management Adviser.

Table 3-1: Implementation Plan of AD&WS

Activity	Time Period
The AD&WS passed a resolution for six sewerage projects. The resolution bears signatures or thumb impressions of almost all members of the society.	October
The members of the society along with area sub engineer of FAUP carried out the measurement of the sewer lines , prepared cost estimation and drawings of the identified six sewerage projects. The total length of six projects was 1,464 running feet, whereas total cost of these projects amounted to Rs. 249,400.	October
According to the cost sharing policy of FAUP, the beneficiaries concerned raised 50% share for all these sewerage projects, which amounted to Rs.124,700. The remaining 50% share was provided by FAUP.	Oct., Nov. & Dec.
Implementation committees were formed for each project separately through a resolution passed in the general body meeting of AD&WS. The role of these project implementation committees were to supervise the physical implementation including purchase of the requisite material, hiring skilled and unskilled labour etc. beside keeping accounts of the fund.	December
A term of partnership (TOP) was signed between FAUP, AD&WS & WASA. This TOP indicates the role and responsibilities of the development partners relating to implementation, operation & maintenance of these sewerage projects until WASA takeover their O&M.	December
The project approval committee of FAUP approved these projects as per the described details of the projects. FAUP disbursed its share to the MPCO.	December
The requisite material i.e. pipes, cement, iron, sand and manhole covers etc. were purchased by the community. However, the sub engineer ensured that the material fulfilled the required qualitative standards	December
Physical implementation was carried out by the project implementation committees through local contractual arrangement on piece meal basis.	December
During the projects implementation, training was arranged by FAUP staff as to how proper house connections are made, in addition to, maintenance of sewer lines	December

Withdrawals from the community sub-project bank account to purchase goods and services required for the sewerage project are made by cheques signed by the FAUP field office social organiser and countersigned by a representative designated by the community.

Any savings realised on completion of the subproject revert to the community organisation and to the PMU with each receiving 50% of the saving. Should the funds approved by the PAC, together with the community contribution, prove insufficient to complete a project, the field office social organiser, the relevant PMU Specialist and the community organisation prepare a request for additional funds for consideration by the PAC. The community organisation is encouraged to meet 50% of the additional cost if the revised costing is approved by PAC. As before, the community contributions can be either in cash and/or in kind. In the event of the PAC not agreeing to the increased costs the project is completed to the best extent possible using existing finance available or fully completed using additional community contribution.

3.6 Implementation Committee

Community members for implementation committee of each tertiary project are nominated by the MPCO.

The nominated community members along with area sub engineer purchased the material, hire the services of labourers and masons to do the physical work of these projects.

The implementation committee takes the responsibility for the monitoring of quality and quantity of work. If community members have any reservation or complaints about the physical work of the tertiary project, they are encouraged to approach the implementation committee, who take the appropriate decisions at the executive body meeting to address these reservations.

Furthermore, the implementation committees of each sub project are responsible to prepare the record of expenditures.

3.7 Expectations from Local Councillors in Chak-7jb

The attitude of local councillors remained positive towards all the sewerage projects. In neighbourhood-D, the community members had high hopes from their councillors and as such many community members were reluctant to pay their share for the sub projects including tertiary sewerage network projects. The people were of the

view that the elected councillors would find funds from government to bear the cost of the complete sewerage networks - this factor delayed the share collection considerably. This issue was finally resolved in a joint meeting between Rahber Development & Welfare Organisation of neighbourhood-D and the councillors. The councillors together with the MPCO convinced the community members that the government funds for undertaking development in their areas was insufficient and the communities had a choice - either wait until government provides funds or in collaboration with FAUP the communities had to finance these tertiary level projects. Eventually people realised that government indeed is not going to assist in the immediate future and hence the process of share collection speeded up.

3.8 Hindrances in the operation and maintenance of sewerage systems

The farming community of the area has a tendency to deliberately block the secondary sewerage lines in order to gain access to the waste water and thereby irrigate their surrounding fields. The main reason is that there does not exist an alternative irrigation source to these farmers.

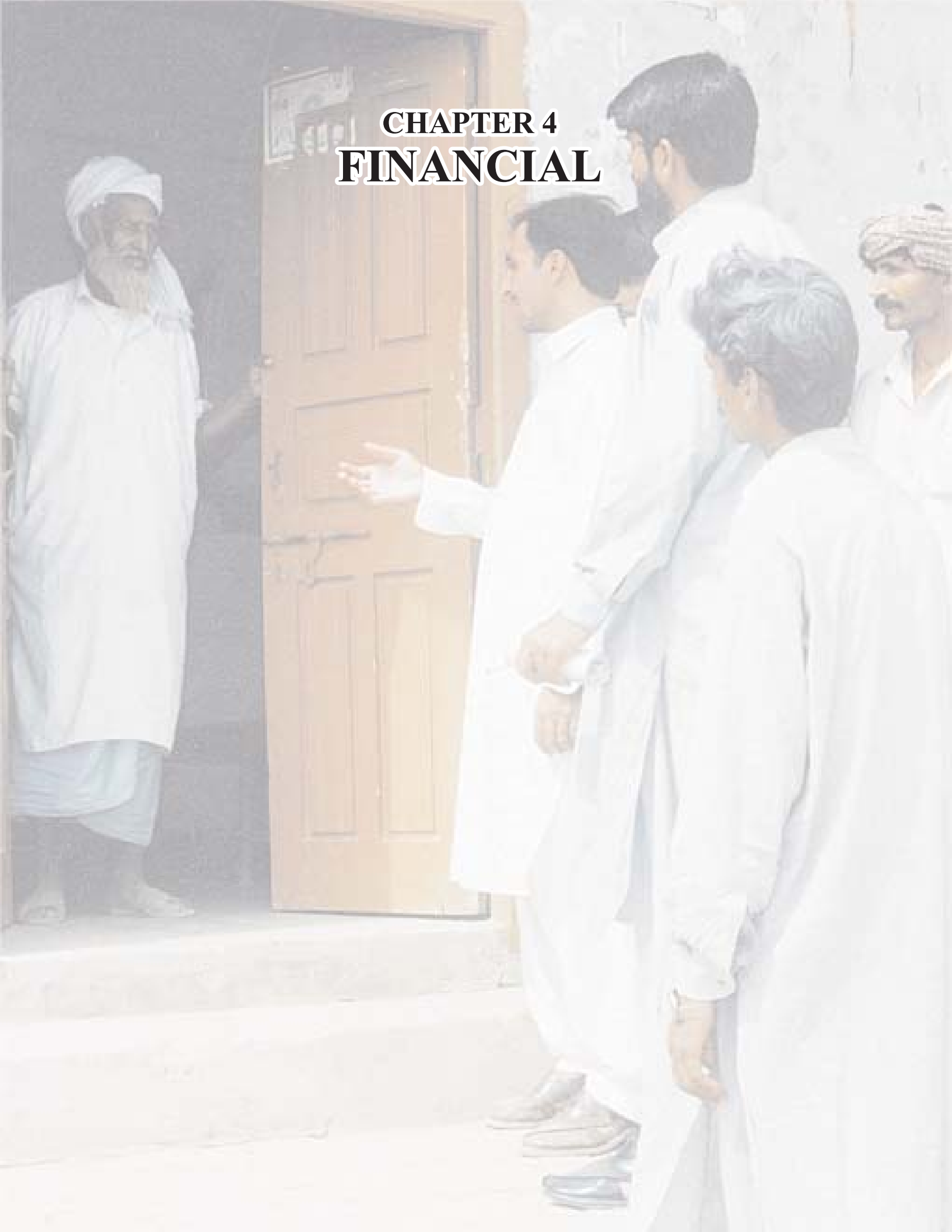
Since these secondary sewerage lines are the main outlets for all the tertiary lines of the area, the blockage affects the whole area. The community members could have lodged complaints with WASA but instead the community organisation took the responsibility to solve this issue amicably by holding a number of meetings with the farmers to resolve this issue.

The farmers are fully aware of the adverse effects of the blockage and have promised not to block the lines to the extent of damage and offered to clear the blockage after irrigating their fields. Furthermore, they showed consent to construct an appropriate irrigation system interrelated with this sewerage system and have requested technical assistance from WASA and/or FAUP engineers.



Photo: Deliberate re-routing of wastewaters by local Farmers for use in the fields

CHAPTER 4 FINANCIAL



4.0 FINANCIAL

4.1 Factor Determining the Cost of Sewers

To get an understanding of how various projects in Pakistan determine the cost of their sewerage systems, a comparative cost analysis of both the tertiary and secondary sewerage systems have been made. This analysis covers the period 1995 to 2001. (Table 4.1) In brief it was found that the cost varies from year to year and even with regard to different projects and locations. A number of causes were attributed to these variations in the cost are mentioned below.

4.1.1 Appropriate Specification

FAUP believes in using sewer pipes of appropriate specification i.e. as per the affordability of the community. (A detailed technical FAUP case study "Appropriate Standards and Design Specifications for Tertiary Sewerage Systems" will be published by January 2002).

The cost of pipes varies from Rs.20 to Rs.60 per running foot. FAUP methodology requires that the various options that are available are discussed with the community and it is left to them to decide on the specification which, in the majority of occasions is dependant upon their affordability e.g. a plain ended pipe is cheap compared to the collar ended pipe and WASA standard pipes are more expensive compared to the non-WASA standard sewerage pipes. In nearly all cases, the communities wanted to opt for sewerage systems rather than open drains. The need to offer choice/options are considered essential to ensure that communities are part of a decision making process and in essence "own the system".

4.1.2 Size and Specifications of Manhole Chamber

The cost of the manhole varies depending upon the type of construction such as brick manholes (WASA standard) and the PCC circular manhole (commonly called as OPP model). A community going for construction of a sewer has the option to select the type of manhole they want to use. There is a huge difference in cost between these two types of manhole.

4.1.3 The Depth of Manhole/Pipe Laying

The depth of the manhole and laying of pipe is another factor which increases the cost of the sewerage lines. Depending upon the invert level of

both secondary and tertiary sewerage systems, the depth of manhole and pipe laying is determined and in some cases this has meant increasing the depth and therefore increased costs for the sub-project.



Photo: *Some of the community members insisted on manholes constructed with bricks*



Photo: *Construction of PCC circular manhole*

4.1.4 Distance between Manholes

FAUP has discovered that despite extensive explanations, the community insists on reducing the spacing between each manholes and therefore opting for many more manholes than is actually required. WASA standards require manhole spacing to be around 60-70 feet whereas in FAUP areas the manhole spacing is sometimes as little as 30-40 feet.



Photo: Communities insist on manhole spacing being limited to about 30 to 40 feet

4.1.5 Cost of Transportation of Material

For some sub-projects, material is brought from a long distance because it is not manufactured locally and so the cost increases.

Also, in the low income areas and katchi abadis, material is often taken to the narrow streets using hand carts or donkey carts.

4.1.6 Masonry cost

Various masons, depending upon their skill level, charge various rates -there is no industry standard on these small projects. Employing a highly skilled mason means quite a large increase in the overall cost of the sub-project.

4.1.7 Inflationary effects on Cost

The cost of material, wages of skilled and unskilled labourers has increased over the 7-year period. One of the reasons for increase in costs is attributed to inflation. This has been noted whilst undertaking the cost analysis of the sewer projects implemented by FAUP over the last 7-years e.g. The first sewerage project was undertaken by FAUP in its pilot project area in 1995 and the most recent was undertaken in February 2001. In 1995, the price of one bag of cement was Rs.150 and in February 2001 it was Rs.250 - this clearly increases the cost of pipes and manholes etc.

4.2 Community share in 'kind'

In addition to cash, community share is also provided in kind -this usually takes the form of community providing material (usually pipes and/or providing additional earth for raising the level of the lane), labour (usually digging and/or transportation of material) and time.

The time component is something that is often overlooked by many researchers. In fact a key FAUP finding is that a lot of time is given by community members:

- a) To have frequent meetings to discuss project proposals with the MPCO and other community members
- b) To the market for finding rates, purchasing and materials from the market.
- c) Contacting and contracting labourers / mistry to undertake the project.
- d) Supervision/monitoring during the execution of the projects.
- e) Settling the accounts and ensuring that all the community members are aware of how their contribution to the funds were used.

Table 4-1: Details of tertiary and secondary sewerage projects in Chak-7jb (1995 to 2001)

Year	Secondary Sewerage Projects			Tertiary Sewerage Projects		
	No. of Projects	Length of pipes laid (Rft)	Cost of Project (Rs.)	No. of Projects	Length of pipes laid (Rft)	Cost of Project (Rs.)
1995	--	--	--	1	304	18,800
1996	12	9,247	3,266,400	2	136	7,000
1997	1	300	45,000	3	510	26,450
1998	--	--	--	6	1,464	249,400
1999	--	--	--	1	250	32,000
2000	3	4,187	1,238,000	13	3,970	498,500
2001	2	2,335	788,000	1	325	48,000
Total	18	16,069	5,337,400	27	6,959	880,150

As a rough indicator, FAUP has calculated that community members spend the following time periods on any typical tertiary level sewerage project:

- i) It takes between 2 to 4 days to purchase material including time spent on searching and researching competitive prices.
- ii) It takes 4 days to complete 100 feet of sewerage project.
- iii) It can take between 8 weeks to 12 weeks to collect funds from community members.
- iv) It can take between 2 to 4 weeks of attending meetings (each meeting of duration 2 to 6 hours) to discuss project proposals with community members.

4.3 Sewerage projects in other parts of Pakistan:

As a guideline, table 4-2 (more details given in

Appendix-1) gives an indication of the various components that are included in the cost of tertiary level projects in Pakistan. This clearly shows that there is no uniform standard and methodology being adopted in the various national projects.



Photo: Community initiating a sewerage project

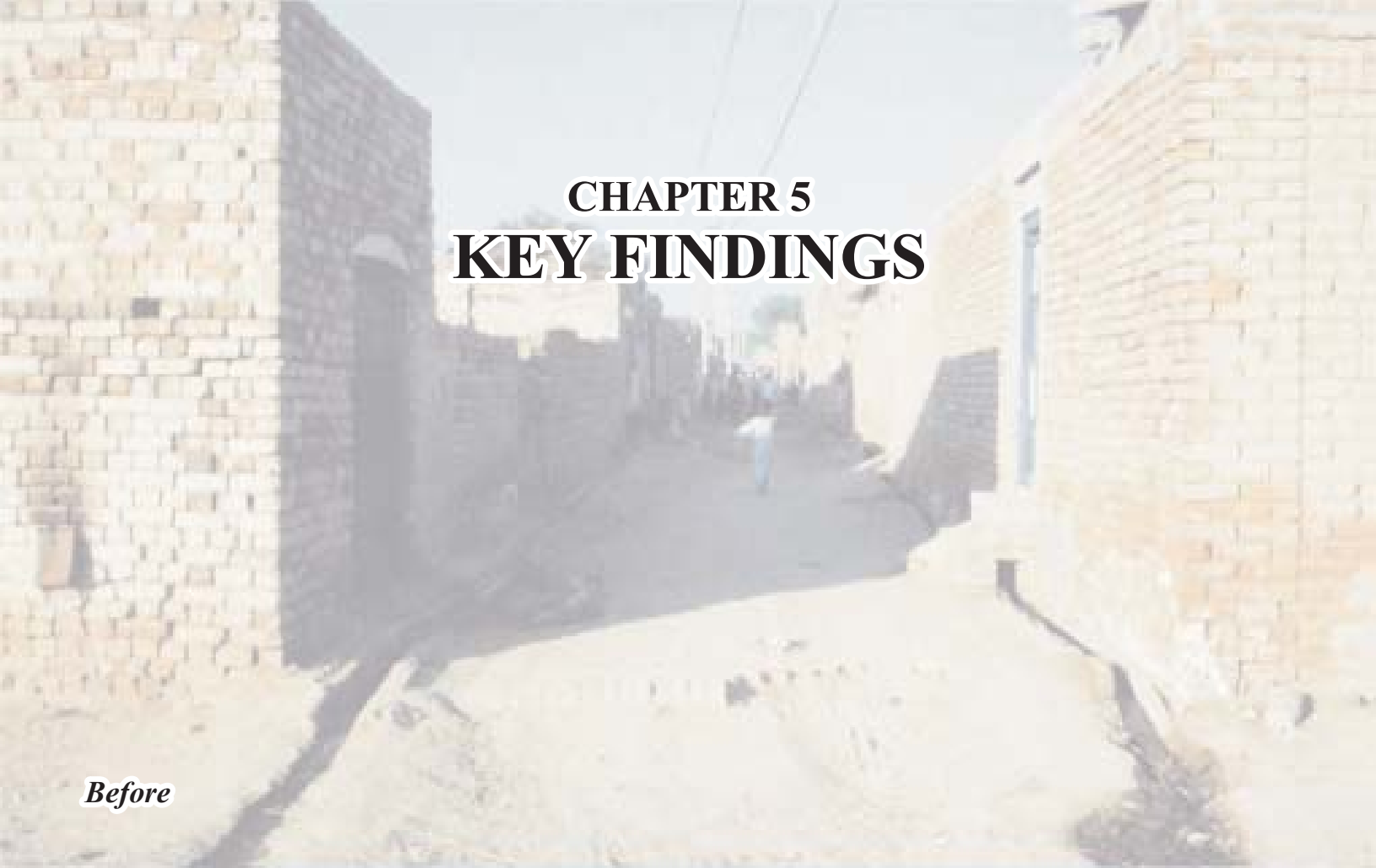
Table 4-2: Comparison of components included in the cost of tertiary sewerage projects in various parts of Pakistan.

Variable	Unit	WASA (Faisalabad)	FAUP (Chak-7)	PIEDAR (Quetta)	Pak-CDP (Peshawar)	ASB (Faisalabad)
Basis of cost estimates used	Market/CSR	CSR (Punjab)	Market		CSR (NWFP)	Market
Pipe Type-1	PCC/RCC	RCC	RCC	RCC	RCC	PCC
Price of pipe per root	Rs.	Government standard	45	No information is available	Government standard	18
Pipe Type-2	Plain ended / Collar ended	Collar ended	Collar ended	No information is available	No information is available	Plain ended
Bedding for pipe	None/sand/gravel	Gravel (4.5 inch)	None	Sand (2 inch)	No information is available	None
Manhole Type	Brick / PCC (OPP style)	Brick (9 inch wall)	Brick (9 inch wall)	No information is available	Brick (4.5 inch wall)	PCC (OPP style)
Manhole to Manhole spacing	Feet	60 to 75	40 to 50	No information is available	15	30
Average Depth of manhole	Feet	4	4	No information is available	2	2.5
Restoration of street	Included / Not included	Included	Included	Not included	Not included	Not included
House connection as part of sewer line cost	Included / Not included	Not included	Not included	Included	Not included	Not included
Interceptor Hodi as part of the sewerage system	Included / Not included	Not included	Not included	Included	Not included	Not included

CHAPTER 5 KEY FINDINGS

Before

After



5.0 KEY FINDINGS

5.1 Impacts of Sewerage System as Viewed By the Community

Implementation of sewerage projects have had positive impacts on the lives of the people as stated by the president of AD&WO. The following observations noted from community focus groups are worth mentioning:

Most community members reported that as much as 80% of the expenditure on the purchase of medicines has been reduced following completion of sewerage sub-projects in their neighbourhoods.

Land value had increased significantly.

Most of the time it used to be the women folk in a household who would end up cleaning open drains in the vicinity of their houses. The completion of the sewerage sub-projects has allowed them to be free from this duty.



Photo: Women used to end up cleaning drains in the immediate vicinity of their homes.

5.2 Conditions before and after implementing a community based sewerage project in Chak7 jb

The general conditions of nearly all of the lanes and neighbourhoods prior to implementation of the community based sewerage projects were indeed terrible.



Photo: Conditions before the community based sewerage project was extenuated further during rainy seasons

Wastewater was often routed into storm water open drains, which in turn frequently overflowed during rainy seasons. The storm water drains were laid without any alignment and rarely had proper maintenance. Regular maintenance was mainly the responsibility of the Faisalabad Municipal Corporation (FMC).

Quite a number of houses were also disposing off waste water in the open plots in the area. This often resulted in spreading diseases and is one of the main reasons for the poor health conditions of the residents living in the area.

The disposal of toilet water was also connected with this disposal network as shown in Table 2.2. The analysis given in the table show that nearly 80% of the houses were having hygienically unsafe toilet disposal connections due to non availability of proper sewerage facilities. This was one of the major causes of bad smell and pollution, which one could have experienced whilst walking on the streets.

5.3 Sanitation Conditions after laying of Sewer lines

The improvement in sanitation conditions of the area are reflected through some photographs, but one can also find the upgrading and change after visiting the area and meeting the people concerned.



Photo: Before a community based sewerage project is implemented in Neighbourhood D



Photo: After a community based sewerage project is implemented in Neighbourhood D

5.4 Community Training

A formal training was arranged for the community to create awareness among community members regarding the proper use, maintenance of sewerage lines and how to make proper house connections to tertiary level sewerage systems.

The training was conducted for the communities residing in each neighbourhood with close collaboration of AD&WS MPCO members. A three member committee was formed under the supervision of the President of the AD&WS to inform both males and females members of the

society, to decide about suitable time, date and venue of training, to ensure maximum participation of the users. Two training sessions, one for males and other for females were arranged in each neighbourhood.



Photo: Practical community training

The training was carried out in Urdu/Punjabi by team members which included the Engineers and Social Organisers. Whilst designing the training modality, the literacy level of the users was kept into consideration. It was found that the women of each of the neighbourhoods were more enthusiastic about this training event - this was not surprising since it was also an FAUP finding that it was the women folk who 'suffer' the most from the bad conditions that prevail in the absence of a proper sewerage system and who were the most proactive in prioritising the sewerage proposals for implementation on a cost sharing basis with FAUP.

5.5 The Impacts on Living Standard of the Community

After development of the sewerage system in Chak-7jb it is apparent that the general condition of the environment has been considerably improved.

As a result of this improvement the whole area has been upgraded from point of conveyance and social interaction. Now residents are observed walking on the streets even during the rainy season without any major hindrance. The value of property has increased between 30 to 35% over a period of 2-3 years despite a slump in real estate business.

Furthermore, it is believed that the improved sanitation conditions of the area have had a positive impact on the health conditions of residents - A separate case study on the links between improving environmental infrastructure and improvements in health is to be published later this year. However, four short interviews with various residents of Chak-7jb (Box 5-1, 5-2, 5-3 and 5-4) confirm that amongst other things, health conditions have been improved since expenditure on medical care has considerably been reduced.

All these elements are visible indicators of improved living standard.

Box 5-1: Interview with Mr. Victor Bhatti ; Age 50 Years; Resident NH-C

Before the sewerage lines were put down, the area was deplorable. Heaps of garbage surrounded the streets and filthy water was flowing from the open drains resulting in odours, strife and difficulties of easy movement of the inhabitants of the area. Even the pedestrians had to face problems to walk in the streets. Also if someone wanted to visit his kin within the area, it would take a very long time to reach the place. This situation became worse during the rainy season when water would flow towards the houses and often dampened the foundation of the houses which resulted in the reduction of the market value of the houses.

The filthy water would turn into stagnant ponds due to the lack of any outlet. As a result, mosquitoes were born and usually, epidemics such as Malaria, Cholera etc would result. Huge expenditures were incurred on medical treatment of these diseases which would have often put a huge burden on the people. It was often the women folk of the area who would end up cleaning the place in front of their houses and this would happen several times in a day. Moreover, women would be hesitant to wash clothes because of the absence of any outlet.

When the sewerage projects for the area commenced with community participation and 50% share was required from the community (this approximated to Rs. 500 per house), the response was not immediately positive because of the lack of awareness about the benefit of sewerage project. After awareness campaigns were conducted by FAUP and MPCO's the community started contributing but there were still problems about affordability and people requested to be allowed to contribute in instalment. Luckily, in the mean time the president of Aman development, Mr. Noor Ahmad deposited Rs. 80,000 as payment on behalf of the community so that the project could be started at the earliest. Mr. Ahmad obtained an agreement from the communities that they would pay back their portion of the share over a few months. Other people contributed their share in the form of kind e.g. purchase of pipe for the project. However, there were still houses that could not pay their share because of extreme poverty.

After the implementation of the sewerage projects, the appearance and attitudes of the residents has totally changed. The piles of garbage and odours disappeared. Streets became wider because the open drains disappeared and also many encroachments were removed. Now the people can walk in the streets easily. Similarly, it has also improved the health conditions of the area and thereby reduced medical expenditure. Furthermore, land and house prices have risen. A piece of land is now worth Rs. 19,000 per Marla compared to Rs.7,000 per Marla prior to the implementation of the sewerage projects. Like wise, people learnt many lessons from this project such as how to implement the project, how to mobilize the community and the importance of cleanliness.

Box 5-2: Interview with Mr. Shukat Aarfi ; Age 32 Years; Resident Of NH-D

Before the implementation of the sewerage projects, people had to face many problems such as restrictive movements on the streets, constant odours and heaps of garbage. Filthy water was often overflowing from the open sewer drains. This deplorable condition of the area caused many problems for the inhabitants of the area. People could not sit in front of their houses to discuss the routine matter of their life. "Namazees" had to change their clothes an making ablution several times to offer their prayers because of the stain of filthy water on the (clothes caused by the spraying of filthy water by passing-by motorbikes and vehicles Sometime this resulted in the exchange of harsh words and quarrels. Furthermore some community members paid Rs. 10 per month to sweepers for cleaning their drains and latrine systems.

When the sewerage projects were completed in partnership with the community, the situation of the area has changed and people started to remove the piles of garbage themselves. The bad odours were eliminated and people could actually sit outside their homes and talk to neighbours. The value of land in the area increased by up to Rs. 800 per Marla. Medical expenditure was considerably reduced.

Now the residents of the area are very happy and no longer are hesitant about inviting relatives. Above all it impacted positively on the social life of the area because through this it increased awareness among the people regarding the importance of a clean environment. Furthermore, the projects created ownership of the system since they contributed funds, material and time to the sewerage projects.

5.6 Constraints faced by team when raising community share

5.6.1 Low Income

Due to the meagre income of community members, it was difficult for the majority community members to pay their 50% share for tertiary sewerage projects in one go as per policy in vogue. To resolve the issue of community share, the MPCO conducted a number of meetings. Ultimately they formed a finance committee comprising six members to collect the share of the beneficiaries on weekly basis. The collection of community share in instalments in ten weeks, solved the problem amicably.

There were about five houses, which were unable to pay the share for sewerage projects. So other members of the MPCO (Like AD&WS) decided to pay share of these houses collectively.

The lessons learnt from the share raising process of these projects signifies the need to start multipurpose saving programme among FAUP supported MPCOs. Under this programme the community members would save regularly in small amounts as per their saving capacity but consistently to address community needs.

5.6.2 Raising of false hopes

A key finding has been that often influential persons raise the hopes of community members by promising to fulfil a task like laying the sewerage system without community contributing any funds. This has resulted in a very tough task for the FAUP social organisers to mobilise communities especially when requesting funds. Box 5-3 is typical of the constraints that the team have had to face.

Box 5-3: Interview with Dr. Rizwan; Age 32 year; Resident of NH-G

Dr. Rizwan is a Christian and is resident in neighbourhood-G where most of the community members are also Christians. Most of the people in NH-G are very poor. When FAUP introduced the community participatory approach, funding mechanism and asked them to participate in the sewerage projects, the community members were reluctant mainly because they were under the impression that the development of their area would be done without spending any money by the community. This understanding had arisen because many NGOs, that were working for the Christian community in the area had promised them that funds for the development of the area could be brought in from outside the area. Unfortunately, these NGOs only paid lip service and ended up doing very little for the area. The example of the NGO, QariTas, was quoted by community members. Apparently, some minor drains were constructed by this NGO but no major development work appeared.

With the assistance of FAUP, a local MPCO called Christian United Development was formed and at the same time a member of Provincial assembly (MPA), Mr. Jacob Siamon Gill asked FAUP to prepare cost estimates for the whole area and Mr. Siamon announced that he would deposit 50% share on behalf of the Christian community - the funds would be obtained as a government grant. This was rejected by FAUP since community ownership was not apparent. No real progress has been made in the development of this area by anyone and communities remained reluctant to participate on a cost-sharing basis with FAUP.

The situation remained like this until February 2001 when FAUP offered an area development package to all residents of Chak7 jb, which included water, sewerage, street lights and paving/roads. This was done using an Area Level Organisation, which also had representation from the residents of NH-G. Since it was announced that FAUP was to close in June 2002, and following tremendous amount of dialogue by the Area Level Organisation and the FAUP social organisers, residents of NH-G finally agreed to contribute whatever amount they were able to.

Box 5-4: Interview with Mr. Younis Gill; Age: 35 years; Resident: NH-E

Mr. Yonis Gill resides in NH-E. He delivered the following views over the absence of the sewerage in its area. Most of the residents of this area are either landlords or from the very the poorest members of society. The inhabitants of this area formed an MPCO called AL Kidhamat, through the facilitation of the FAUP. Several meetings were held between the FAUP social organisers and the MPCO with respect to the sewerage projects, but unfortunately no tertiary level sewerage project, immediately materialised because of a combination of the absence of a secondary system, and the existence of some very poor community members. The economic disparity of the area was also major constraint because the poorest residents of the area preferred a drain system because it was low-cost as compared to the sewerage system - the drains were to be constructed by councillors without taking any contribution from the community.

Furthermore, the farmers / landlords considered drains system to be more appropriate since their experience showed that if blockages of sewerage systems occurred, a sewer man had to be called out from WASA and this happened very frequently and each time money had to be paid by the residents to remove the blockage. Also whenever open drains overflowed, the farmers / landlords would call their personal servants to clean the drains and this would be completed immediately. For these reasons, this group of people concluded that drains were more desirable.

Lastly, mostly people residing in this area are of the view that it is the responsibility of Government to lay down the sewerage in the area without any cost to communities.

5.6.3 Government responsibility

Many people especially the financially well-off residents of the area were strongly of the view that construction of sewerage systems should and is the full responsibility of the government line departments. Box 5-4 illustrates one such view.

5.7 External Constraints Faced by FAUP

The external constraints that FAUP has faced during sanitation projects (or indeed in most of the other tertiary level projects) include:

a) Political Interference

The local politicians like municipal councillors, members of provincial and national assemblies usually make false promises with the communities of their constituencies to develop infrastructure like sewerage, drains, water supply and paving of streets etc. But these promises are never fulfilled. However, this situation adversely affects development initiatives of the organised communities being supported by FAUP. When any community is given such commitment by local politician, the community loses motivation for their participation and projects under process through community participation are delayed considerably. On a number of occasions, such situation has arisen among organised communities including NH-C of Chak-7jb area.

FAUP has overcome this situation by getting a written agreement from WASA that no sanitation projects can be undertaken in the FAUP project areas without the written consent of Project Approval Committee (PAC) of FAUP.

The lessons learned by FAUP from this situation

are, firstly to ensure close co-ordination between community and the local politicians to avoid false commitment. Secondly to create awareness among politicians as well to adopt FAUP model for utilisation of their allocated funding for developmental scheme. The community participation in such schemes would double the number of schemes and broaden the beneficiaries base.

b) Legal Implications of Ownership

The tertiary sewerage projects are being built on the Government land with equal contribution of community and FAUP. From the legal point of view, the ownership of tertiary infrastructure of sanitation system has yet to be decided. From WASA's prospective, the ownership of all these sewer projects should have been transferred to them so that their proper operation & maintenance should be ensured.

c) Line Departments

WASA is a counterpart line department for development of sanitation system. As already mentioned, WASA is responsible for planning, designing, implementation and maintenance of secondary and primary infrastructure. The offshoots of these infrastructure i.e. tertiary projects are implemented by the communities. Hence, any delay on the part of construction of secondary or primary infrastructure system affects development and use of tertiary projects. FAUP is facing such problems in all the areas. The overall integrated planning of a sanitation system, which covers tertiary and secondary infrastructure, can solve these issues. Therefore, FAUP is now focusing on area level planning to develop the sanitation system.

Another problem which has been faced in Chak-7jb and other areas relates to cleaning and maintenance of secondary sewers and open drains. WASA is responsible for cleaning and maintenance of secondary sewer, whereas FMC is responsible to clean the open drains. Both these agencies are not performing their duties with close co-ordination. In Chak-7jb area, due to blockade of open drain, sewers connected with this main drain were often blocked. Now FAUP is focusing to complete secondary network as a key to solve this issue. Owing to this situation, the community of neighbourhood-C has decided to clean the tertiary line regularly. For this purpose the community has started a saving programme. The amount of this saving is being kept in a separate bank account opened under the title of O&M of sewer projects.

5.8 Awareness Raising Among Community

Proper and safe use of sewer make the life of a sewerage system longer and less cumbersome for the users. It is therefore essential that awareness is created among the users of the sewers about its proper and save usage.

After completion of tertiary sewers in Chak-7, FAUP arranged formal training for the male and female members of the community separately. The training were held in the neighbourhood concerned. Almost eighty members attended these

training sessions. The demonstration was given with the help of charts and posters. Subsequently, the participants of the workshop were given hand outs on subject topic. The following topics were covered in the training sessions.

Proper design and lay out of the sewerage system, both inside and outside of the house.

Introduction of the material used in the proper design of the bathroom / house sewerage system like p-trap, galli-grating, plastic pipe, and odour outlets.

Use of HOUDI outside the house and preparation of a silt pocket in it to avoid any blockage in the main sewerage system.

Cost estimates for the internal drainage / sewerage system were told to the community.

Safe use of latrine.

Materials to avoid going to the sewerage system like polythene bags and other hard material.

Arrangements for the drainage of the storm / rain water.

Responsibilities of the people regarding O&M of the main sewerage system.

Another important aspect of this training was the introduction of the process of getting legal sewer connection from WASA. The users were also given information about the formalities required to be completed for getting legal connection and its charges and monthly bill of a sewer charged by WASA.

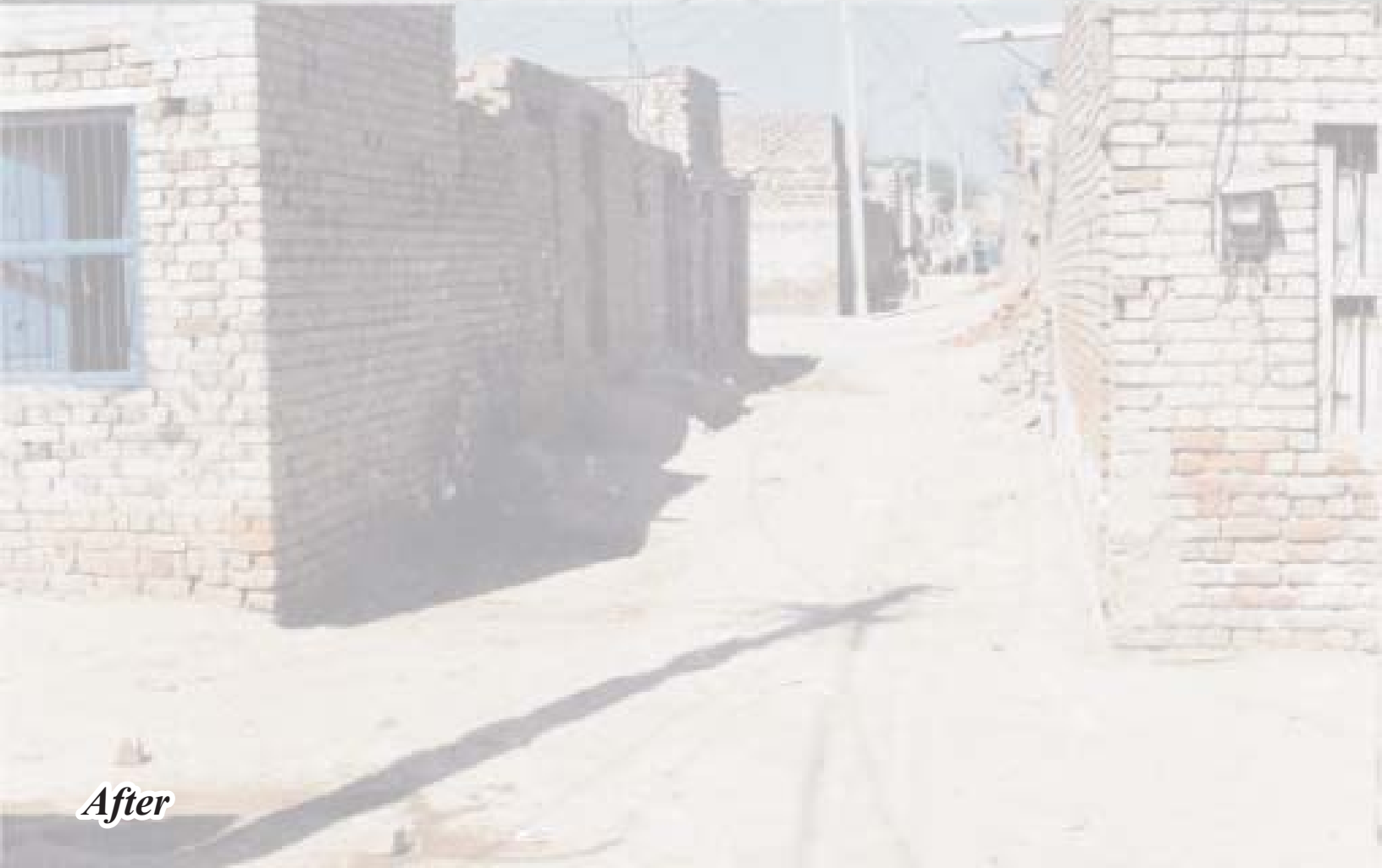


Photo: Community implementing a sewerage project

CHAPTER 6 RECOMMENDATIONS AND CONCLUSIONS



Before



After

6.0 RECOMMENDATIONS AND CONCLUSIONS

6.1 Increase of Cost Ceiling of Tertiary Projects

Faisalabad Area Upgrading Project was designed in 1994 and the PC-1 document that was formed at the time, allowed each separate tertiary level project to be implemented in partnership with the community with a maximum ceiling cost allowed for each project fixed at Rs. 50,000. During the last 7 years, it has been observed that an organised and active community could very well tackle projects in excess of this ceiling. It is a key finding of FAUP that when executing neighbourhood level projects and/or Area level projects, the cost of the projects are always higher than Rs. 50,000 and so it is recommended that if local government replicates the FAUP model on sewerage projects, that the present cost ceiling is increased to Rs.300,000. Projects of this size can easily be managed by organised community groups.

6.2 Appropriate Standards for Tertiary Level Community Based Projects

FAUP in full collaboration with WASA (through the WASA/FAUP community infrastructure unit) has tested various sewerage structures to identify appropriate specifications and determine suitable construction methodologies that are both cost effective for low-income communities and acceptable to WASA. This research work will benefit a number of Government line departments & NGOs.

WASA and FAUP presented these initial findings at the international WEDC conference held in Islamabad in September 1998. Since then more tests have been undertaken by FAUP and WASA and a detailed FAUP case study is under preparation. This is scheduled to be published by January 2002.

6.3 Can low-income communities really become equitable partners in development with local government?

The community has been exposed to a new dawn and hope that they can improve their living conditions, using the innovative community participatory approach, mobilising internal and external resources for the betterment of their livelihood.

The neighbourhood MPCOs is an appropriate level of social organisation to implement sewerage infrastructure projects. The strengths of using this level of MPCO is seen from the following perspectives.

It is possible for the community members to hold dialogues and make the significant decisions with consensus at this level of organisation.

Community can raise the required share and maintain its accounts precisely. The better off community members can support poor in their share raising.

Physical implementation of tertiary projects is economical from the point of view of purchases of material and making contractual arrangements.

Suitable forum to create awareness and impart training.

To make arrangement for the O&M of the sewer system.

In conclusion a key finding of FAUP over the last seven years has been that all communities can indeed be equitable partners in development providing that they are organised and a sense of trust is first established between the local government and these community groups. This latter part should be now easier to develop under the new devolved power programme currently underway.

6.4 Faisalabad under a new decentralised district government

Under the new decentralised government, many of the sewerage projects executed by communities through FAUP, can be very easily be replicated City-wide and Province-wide . The decentralisation programme should allow the major share of the responsibility for service delivery to the local government -however, this is likely to fail, if appropriate administrative and fiscal powers are not given.

It is important to ensure that all investments that are made by WASA should be planned in a wholistic manner, taking a city-wide approach but allowing lane level /neighbourhood level initiatives to be undertaken by communities.

The FAUP team are very happy that, albeit, indirectly, its model for development has been adopted by the government of Punjab. For this purpose clause 119 of the Punjab Local Government Ordinance 2001, which has been reproduced in Box 6-1, indicates that the citizen community boards will carry out developmental projects on the basis of matching grant. Initially as explained in clause 119, a citizen community board was required to raise 50% share of the approved projects. Now it has been amended to 20% cost of the projects.

Box 6-1: Community Participation under New Local Government Ordinance 2001
(An Extract of the Punjab Local Government Ordinance No. XIII of 2001)
Clause 119 Bottom up planning and the ownership incentive system:-

- 1) The Citizen Community Boards may receive from a local government matching grants up to fifty percent of the budgeted amounts of an approved development scheme in the manner prescribed:
Provided that a scheme shall be considered an approved scheme if:
 - (i) the prescribed departmental procedure for estimating the cost of the scheme has been followed;
 - (ii) the Citizen Committee Board has deposited its share of the cost of the development scheme in the account prescribed for the purpose; and
 - (iii) the complete departmental estimates and the proof of deposit of the Citizen Community Board's contribution are attached.
- 2) The matching grants referred to in sub-section (1) shall be spent from the reserved fifty percent of the development budget as Provided in section 109.
- 3) A cut off date, not less than thirty days before the presentation of the budget, shall be announced by each local government for registration of all scheme proposals from citizen committee board with District government, Tehsil Municipal Administration, Town Municipal Administration or Union Administration, as the case may be.
- 4) The authorised officer of the respective level of local government shall draw up a statement specifying the schemes in sub section (3) by classification -including the total amount of contributions for a particular classification of schemes.
- 5) A second statement shall determine contribution amounts for a particular classification of schemes as a ration of the total contributions for all schemes registered with a particular local government for that year and the statement shall be used to determine amounts of allocations for a classification of schemes from the budget reserved for the purpose.
- 6) A third statement shall be drawn up which shall identify the number of schemes registered in a particular classification, beginning with the scheme containing the highest contribution by the citizen committee board in a classification until all the schemes in the classification are selected or the funds allocated for that particular classification in the amount determined in sub section (5) are exhausted.
- 7) The statement referred to in sub-section (6) shall be appended to the budget of the District Government, Tehsil Municipal Administration, Town Municipal Administration or Union Administration, as the case may be, for approval as part of the budget by the respective Council.
- 8) The schemes approved by the respective Councils shall be carried out as prescribed by the government.

6.5 Empowerment of the Community

Another key finding is that once the communities are mobilised, they develop confidence and very soon begin to express their concerns quite plainly - this does not just stop at the FAUP team level, rather this extends to very senior government officials in line departments. Furthermore, on most occasions, these very senior people have welcomed this since it allows them to get to the root of the problem rather than entirely rely upon their subordinates.

The community is of the view that they have learned a participatory methodology of development comprising techniques of mobilising local resources, creating access to external resources and using their newly discovered platform of organised communities forums, to achieve their desired objective.

This empowered approach is very much present today in the FAUP pilot areas where community groups are working together with elected Nazims to further improve their standards of living.

6.6 Can Government Replicate the Various Models of FAUP ?

FAUP is a government project & clearly FAUP has demonstrated that if government lines departments like WASA become partners with the local communities, then it is indeed possible for

the line departments to implement the various models of FAUP. The community participation development model has a numerous advantages over traditional development approach. Under this model community shares responsibility, not only for implementation, but also for O&M. The participation of community also ensures quality of work at low cost. In a number of cases community provide share in kind like the labour, material and other services etc. or /and in cash. This approach creates a sense of ownership and proper use of services by the intended beneficiaries.

The case study has shown that the poor communities have addressed their needs of sewerage projects on a cost sharing basis. Using this approach of empowering communities and working in partnership, the FAUP model can be adopted by other communities in Faisalabad (including the poor, the poorest and most vulnerable in society).

It is also worth noting that the cost sharing process may put burden on the scanty financial resources of community members, but in the long run the facilities that are obtained actually improve living conditions of the people and in fact curtail expenses indirectly incurred on living. Furthermore, just as important is the development of pride and self-esteem which all contribute towards both the change in behaviour of communities and greatly enhance the "feel good factor".



Before



After



APPENDICES

COST ESTIMATION OF A TYPICAL FAUP COMMUNITY SEWERAGE PROJECT

Table A

Description of Material	Denomination	Material Cost		Labour cost		TOTAL COST
		Rate	Rs.	Rate	Rs.	
Pipe						
Length of sewer (feet)	100					
Cost of pipe per running foot		55	5,500	3	300	5,800
Average depth to invert (feet)	3	-				
Excavation (width of trench 2")	Rs. per cubic foot	-	0	4	2400	2,400
Bedding (depth of bedding 4")	Rs. per cubic foot	6	400	2	133	533
Pipe laying	Rs. per foot	-	0	6	600	600
Back filling (width of trench 2")	Rs. per cubic foot	-	0	2	1200	1200
Surfacing	Rs. per sq. foot	3	600	2	400	1000
Sub total			6,500		5033	11,533
Cost per running foot (pipe only)			65		50	115
Access chambers and manholes						
No. of access chambers / manholes	3	600	1,800	200	600	2,400
Sub total			1,800		600	2,400
Total cost of pipes and chambers			8,300		5,633	13,933
Cost per running foot (pipe & chambers)			83		56	139
Total community contribution						
No. of households	8					
Cost per household			1,037		704	1,742
Subsid (%)	50%					
Household contribution			519		352	871
Household Connections						
Average length of connection	10	15	1,200	2	160	1,360
Sub total			1,200		160	1,360
Household connection chambers		600	4,800	200	1,600	6,400
Sub total			4,800		1,600	6,400
Total capital investment						
Total			14,300		7,393	21,693
Cost per running foot.			143		74	217
Total community contribution						
No. of households						
Cost per household	8		1,787		924	2,712

**COST ESTIMATION OF A TYPICAL PIEDAR LANE SEWERAGE PROJECT
QUETTA (BALUCHISTAN)**

Table B

Sr. No.	Items	Quantities	Cost in Rupees
1.	Excavation includin T-hodi & Manhole	3839 Cft.	11510
2.	RCC pipes for 6 inch dia	89 Nos.	10198
3.	PVC pipes for 3 inch dia	25 Nos.	2500
4.	PVC pipes for 2 inch dia	0 No.	0
5.	2 inch sand cushion	132 Cft.	662
6.	Cement for pipe connection	3.77 Bas	885
7.	Cement	47.87 Bas.	11249
8.	Sand	149.78 Cft.	749
9.	Aggregates	299.57 Cft	1498
10.	Steel only for covers (T-hodi & MH)	59.28 Kg.	1186
11.	Cost of steel cutting & binding		780
12.	Jute for pipe joints		900
13.	Cost of 9 inch pipe + excavation		11567
	Total		53692
	Labour charges @ 20% of total cost		10730
	Cost for Transportation/wastage @ 4% of total cost		2148
	Grand Total		66578
	Cost per Rft.		74
	50 % share for lane residents		33289
	Contribution for each household (no. of houses)	21	1585

COST ESTIMATION OF A TYPICAL PAK-CDP SEWERAGE PROJECT PESHAWAR (NWFP)

Data: Pir Ghaib Colony, 45 Ft. Long sewerage line including 3 manholes

Table C

Item No.	Description	Units	CSR-99	Premium	Unit Rate	Quantity	Cost
03-01-a	Earth Excavation in Ordinary Soils	m ³	12.79	25%	15.99	0.96	111.35
23-01-c	Placing & Laying RCC pipe 9" moulded with cement concrete 1:1:5:3, including Cost of reinforcement. Testing etc.	m ³	229.6	25%	287.00	11.89	3412.50
07-04-a-a03	Pacca brick work in foundation and plinth in cement sand mortar 1:4	m ³	1525.96	25%	1907.45	0.68	1299.84
11-09-a	Cement Sand plaster 1:4 3/8" thick,	M ²	37.56	25%	46.95	5.02	235.66
06-06-a-a 03	RCC in slabs type-C (1:2:4)	m ³	2960.54	25%	3900.68	0.16	594.82
06-07-a	Supply & fabricate M.S. reinforcement for cement concrete	tonne	24978	25%	31222.50	0.0138	432.38
08-05-h	PCC including Placing, compacting, finishing & curing (1:3:6:	m ³	1754.16	25%	32192.70	0.22	492.25
06-05-1	PCC including Placing, compacting, finishing & curing (1:4:8)	m ³	1497.24	25%	1871.55	0.22	420.15
Total Cost							6998.95

DETAILED COST & SPECIFICATIONS OF LOW COST SANITATION MODEL OF ANJUMAN SAMAJI BEHBOOB FAISALABAD (AS OF 2001)

Table D

• Rate of 6 feet 9 inch i/d PCC pipe includin transportation cost	Rs. 110 for plain ended and Rs. 140 for collar ended pipe
• Excavation rate	Rs. 0.85 per Cft this includes the back filling. Without back Filling it is Rs. 0.70/Cft
• Average depth of the pipe	2.5 feet
• Pie type	Plain ended and PCC
• Pipe joint	With wrapping a TAT (dipped in whole cement) around the joint 4 inch wide and 6 inch thick mortar of the ratio 1:4:5
• Manhole	Four inch thick PCC, with internal dia of 22 inch & external dia of 30 inch (Cost Rs. 650 per manhole)
• Manhole depth	2.5 feet
• Manhole spacing	30 feet
• Mortar used in the manhole (Cement, sand and ravel ratio)	1:3:4 or 1:4:5
• Mortar used in manhole cover preparation	1:2:3
• Iron bars 0.5 inch dia used in manhole cover	8 (Four bars of 30 inch length and four bars of 22 inch length)
• Compaction	Natural
• Restoration of the street	Not included

TERMS OF PARTNERSHIP

Sewerage Project

MPCO (Male / Female)

Role & Responsibilities of MPCO	Roles & Responsibilities of FAUP	Role & Responsibilities of WASA
1- Identification of the Project		
<p>The MPCO has identified the sewerage project as one of the prioritised needs of its members. A resolution of the MPCO containing signatures/thumb impressions of the majority members is enclosed.</p> <p>All those households which will be connected to the sewer agree to pay all appropriate charges to WASA for the service provided.</p>	<p>The SO concerned will verify the resolution and recommend the project for consideration of the management.</p>	<p>As requested by FAUP, WASA will conduct a pre-feasibility to determine whether the project is likely to be feasible and/or any other work that may be required to make it feasible. It will inform FAUP of its findings.</p> <p>WASA will nominate an appropriate technical officer as its representative for the project.</p>
2- Regularity of Meeting & Attendance		
<p>The MPCO will hold meetings at least monthly, to review progress and accounts of the scheme. Meetings may be held more frequently if required. Maximum members will participate in these meetings.</p> <p>The MPCO will nominate a Project Implementation Committee (PIC). Through the attached Resolution, signed by a majority of the MPCO members. It will comprise of a minimum of 3 members, including the FAUP SO and sub-engineer for the project.</p> <p>Progress and minutes of meetings shall be recorded and be available for inspection by community members participating in the project.</p>	<p>The SO concerned will ensure regularity of meetings and its record keeping.</p>	<p>WASA shall be informed of all meetings and shall have the option to attend them. Where it is specifically requested to attend a meeting e.g. project approval, commissioning, it shall make sure its nominated officer, or an appropriate substitute is present.</p>
3- Collection of Data / Information		
<p>The MPCO will co-operate with project staff to provide the required socio-economic data for planning, implementation and monitoring purposes.</p>	<p>FAUP staff will collect the requisite information /data from MPCO members and non-members for preparation of community profile, research, case studies, monitoring and planning purposes. Secondary sources will also be consulted to obtain additional data.</p>	<p>WASA will participate fully in the project and provide FAUP and the MPCO with all the information and support necessary for the satisfactory design, commissioning and operation of the sewer.</p>
4- Survey, Design & Cost Estimation		
<p>The MPCO, through the PIC, will assist FAUP staff in the survey and design of the project.</p> <p>The MPCO may request alterations or changes in the project design or cost estimates at any stage of the project. They shall be agreed with FAUP prior to implementation.</p>	<p>FAUP, in consultation with the MPCO and WASA, will prepare lay out, design and drawings of the project.</p> <p>FAUP will prepare cost estimates of the project indicating the details of material & labour etc. separately.</p> <p>Any change or alteration in design, layout or cost estimates will be subject to mutual agreement of the MPCO and WASA.</p>	<p>As requested, WASA will provide support and consultation to FAUP and the MPCO for design and approval of the project.</p> <p>The design and construction standards adopted shall be as agreed with FAUP and the MPCO and shall be appropriate for community-based construction.</p> <p>In case of change in design and lay out of the project, the WASA will be informed /consulted.</p>

5- Cost Sharing & Disbursement

<p>The MPCO shall be responsible for collecting the required 50 % community / household share. WASA connection charges and maintenance of the project accounts and making the payments due.</p> <p>The only payments made to WASA shall be the official connection charges.</p>	<p>FAUP will pay 50 % cost of the project to MPCO as grant. This amount will be disbursed in instalments (if required) as per cost estimates through crossed cheque, raised on the name of the MPCO in its general body meeting.</p>	<p>WASA will not be required to contribute financially to the cost of the project. However, it shall provide all technical assistance, advice, supervision, etc. to FAUP and the MPCO free of charge.</p> <p>The only money WASA shall be entitled to receive shall be official connection charges and tariffs. Official receipts shall be provided for all payments made, copied to the householder.</p>
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6- Bank Account of the Project

<p>The MPCO will nominate one member of the PIC as signatory of the joint bank account of the project through resolution.</p>	<p>FAUP will authorise the SO concerned to operate the joint bank account of the project along with the representative of the MPCO.</p>	<p>N/A</p>
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7- Approval of Project

<p>The MPCO will agree the final scope layout and cost of the project and indicate its agreement by endorsing the design and cost estimates submitted to the PAC.</p>	<p>The project will be approved by PAC after completion of all the requisite terms and conditions.</p>	<p>WASA shall provide an NOC for the agreed project prior to its submission to PAC. It shall include a commitment to connect the service to WASA's secondary infrastructure as soon as the project is complete, at least 50% of the households have completed connection formalities and work is to the agreed construction standard.</p>
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8- Physical Implementation

<p>The project shall be implemented using community-based contractor(s).</p> <p>The PIC will work on a voluntarily basis and will be accountable to the general body of the MPCO. The PIC has the following role:</p> <ul style="list-style-type: none"> Managing and monitoring implementation, commissioning, operation & quality of the project. Purchase and storing of materials, hiring skilled and unskilled labour. Keeping records of the project transactions and accounts. 	<p>The physical implementation of the project will be carried out by the PIC of the MPCO under technical supervision of FAUP and WASA.</p> <p>To ensure the quality of the work, only materials agreed by WASA FAUP and the MPCO shall be used (see (4) above).</p>	<p>WASA shall have unrestricted access to the site and will carry out inspection of the engineering aspects of the project and ensure its integration into the overall sewerage system of the area. For this purpose WASA will deploy appropriate field staff for the construction and commissioning period as agreed with FAUP and the MPCO.</p> <p>Any concerns WASA may have about the quality of the work shall immediately be forwarded to FAUP and the PIC, in writing.</p> <p>WASA shall not have the power to stop the work. However it may refuse to commission and adopt the project if it believes the work has not been carried out to the agreed design and/or standards until such time as the work has been corrected or shown to comply with them.</p> <p>WASA will be responsible for connecting the project with its existing secondary system as detailed in (7) above. This shall be financed from the connection charges paid by the participating households.</p>
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9- Capacity Building & Awareness About Use of Project Services

<p>The MPCO will nominate its members to receive formal training from FAUP/WASA for the implementation, repair and maintenance of the project.</p> <p>The MPCO / beneficiaries will also participate in awareness campaigns about the precise use and care of the project.</p>	<p>FAUP with association of WASA and other agencies will impart formal and informal training to the community members regarding implementation, repair & O&M of the project.</p> <p>FAUP will also create awareness about precise use and care of the project.</p>	<p>WASA will provide support to FAUP in its community training and awareness programmes.</p> <p>This support shall be provided free of cost for a maximum of one day. Where more than one day's support is required FAUP shall pay an agreed fee to WASA to cover the staff costs, travel expenses and field allowances, at the approved government rates.</p>
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10- Repair, Operation & Maintenance

<p>The MPCO will be responsible for the repair and maintenance of the project from the start of implementation until the time WASA takes this Responsibility.</p>	<p>N/A</p>	<p>The WASA will take the responsibility for the repair, operation and maintenance of the project immediately after it is commissioned.</p>
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11- Ownership

<p>The MPCO will share ownership of the project jointly with WASA. It shall be responsible for ensuring its proper care and use and facilitating WASA's operation, repair and maintenance of it.</p>	<p>N/A</p>	<p>WASA will share ownership of the completed project with the MPCO while having full responsibility for operation and maintenance.</p>
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12- Household Connections

<p>Prior to commissioning of sewer the MPCO will collect the WASA connection fees and the completed application form from each participating household and submit them to WASA on its behalf.</p> <p>The MPCO shall not refuse any household the right to connect to the sewer provided it has paid its proportionate share of the cost of the completed project into the MPCO's bank account and it has completed all the appropriate WASA formalities. This shall include households which did not participate in the original scheme for whatever reason.</p> <p>Prior to commissioning of the sewer the MPCO shall be responsible for making the household connection to the sewer. After commissioning WASA shall be responsible for carrying out the work.</p>	<p>For monitoring and evaluation purposes the MPCO shall inform FAUP of any connections made to the sewer after commissioning.</p>	<p>Any household which did not participate in the original project shall only be connected to it with the written agreement of the MPCO as well as WASA.</p> <p>This agreement shall be conditional upon the household having paid its proportionate share of the cost of the completed project into the MPCO's bank account.</p>
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13- Protection of Environment

<p>The MPCO will co-operate with FAUP to do plantation, collection of solid waste and take other measures to project and rehabilitate better environment.</p>	<p>FAUP will provide support to the MPCO for protection and rehabilitation of better environment.</p>	<p>WASA will provide support to the MPCO for better protection and rehabilitation of the environment by ensuring it carries out proper operation and maintenance of the sewer at all times.</p>
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14- Monitoring & Evaluation

<p>The MPCO will do its own periodic monitoring of the accounts and physical work etc. For this purpose the PIC will be responsible to the general body of the MPCO.</p>	<p>The FAUP has the right to scrutinise the accounts of the project and its physical working, including implementation, the quality and specification of material and labour used, training, WASA supervision and operation and maintenance, operational performance, durability, etc.</p> <p>The FAUP will also conduct evaluation and case studies to assess the impacts and effects of the project.</p>	<p>WASA shall assist any monitoring and evaluation activities undertaken by FAUP and/or the MPCO at any stage of the project, including post implementation.</p>
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Glossary

AD&WO	Aman Development & Welfare Organisation
AD&WS	Aman Development & Welfare Society
ALO	Area Level Organisation
APD	Additional Project Director (FAUP)
ASB	Anjuman-e-Samaji Behbood
CSR	Composite Schedule Rate
DFID	Department for International Development UK
FAUP	Faisalabad Area Upgrading Project
FDA	Faisalabad Development Authority
FMC	Faisalabad Municipal Corporation
GoP	Government of Pakistan
MPCO	Multi Purpose Community Organisation
NGO	Non-Government Organisation
NH	Neighbourhood
NOC	No Objection Certificate
NWFP	North West Frontier Province
O&M	Operation & Maintenance
OPP	Orangi Pilot Project Karachi
PAC	Project Approval Committee (FAUP)
Pak-CDP	Pak Community Development Programme NWFP Peshawar
PC	Project Coordinator
PC-1	Planning Commission Proforma -I
PCC	Plain Concrete Cement
PIC	Project Implementation Committee
PIEDAR	Pakistan Institute for Environment -Development Action Research
PMU	Project Management Unit
PVC	Polyvinyl Coated (pipes)
RCC	Re-enforced Concrete Cement
SO	Social Organiser
Sr. Engineer	Senior Engineer
SSO	Senior Social Organiser
SWOT	Strengths Weaknesses Opportunities and Threats
ToP	Terms of Partnership
WASA	Water & Sanitation Agency
WEDC	Water, Engineering & Development Centre

About the Authors



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He is the project manager for the DFID funded Faisalabad Area Upgrading Project in Pakistan responsible for coordinating the activities of a diverse team of local and expatriate staff engaged in a multi-sectoral participatory approach to the upgrading of urban environmental infrastructure and social services. Mr. Alam joined the project in 1997.



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He holds a Master's degree in Economics and specialises in project planning and management. He possesses extensive experience in the field of development, which extends over two decades. He has worked on some of the leading rural and urban projects in Pakistan like Sarhad Rural Support Programme, National Rural Support Programme, UNDP's Neelum & Jhelum Valleys Community Development Project (A&JK) and DFID funded Faisalabad Area Upgrading Project.



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