

# Community Participation in Rural Water Supply Projects in Northern Punjab and AJK

## An Exploratory Study

Volume I



Ministry of Local Government and Rural Development, Government of Pakistan



United Nations Development Programme



United Nations Children's Fund



UNDP/World Bank RWSG-SA

205.1-94CO-12246-3

June 1994

This publication has been prepared with the assistance of the following:

- Regional Water Supply Group - South Asia

Ms Roshaneh Zafar, Community Development Specialist, Principle Author

### **Review**

Mr Amin ud Din Ahmed, Deputy Director, Ministry of Local Government and Rural Development and Mr K M Minnatullah, Country Program Coordinator, RWSG-SA

### **Format**

The report is available in two main volumes: Volume One includes the main text of the report along with an executive summary, while Volume Two contains case-studies and appendices.

This document has been prepared and published by the Ministry of Local Government, Government of Pakistan and the UNDP/World Bank Water and Sanitation Program, Regional Water Supply Group - South Asia (RWSG-SA). The findings, conclusions and interpretations expressed in this report are entirely those of the author and should not in anyway be attributed to the Ministry of Local Government, UNDP, World Bank, RWSG-SA and UNICEF

# Community Participation in Rural Water Supply Projects in Northern Punjab and AJK

An Exploratory Study

Volume I

LIBRARY, INTERNATIONAL REFERENCE CENTRE FOR COMMUNITY WATER SUPPLY AND SANITATION (ICWSS) P.O. Box 30199, 2509 AD The Hague Tel: (070) 814911 ext. 141/142 RN: <i>W12246-3 2<sup>nd</sup> copy</i> LO: <i>205.1940</i>
--

June 1994





*Government of Pakistan  
Ministry of Local Government  
& Rural Development*

*Islamabad the* 2nd June, 1994

## FOREWORD

Development programmes are sustainable, when they are able to deliver the conceived benefits at optimum level without depleting the resource base and denial of the resource to the future generations. This can only be possible when community involvement at all levels i.e. planning, designing, execution and operation & maintenance is ensured. Despite the growing awareness regarding the need for community involvement, very little systematic information is available from the field on community organization to facilitate decision makers in making informed policy choice

The need for conducting the study on “community participation in rural Water Supply Projects in Northern Punjab and AJ&K” was identified under the applied research component of the Federal Support Unit. The Federal Support Unit is a joint effort between the Ministry of Local Government and Rural Development, UNDP and UNICEF and was formulated to enhance the effectiveness of investment in the water and sanitation sector.

This study is part of a greater collaborative effort by donors such as UNDP, the World Bank and UNICEF in conjunction with the Government of Pakistan, to support participatory development in the water supply and sanitation sector. The overall objective of the study was to understand whether community participation can make a difference with respect to project outcomes, that is.

- a Are water systems being equitably and effectively utilized?
- b Has a greater role in decision making at the community level contributed to sustainable outcomes?
- c What are the different organizational forms that can lead to the long term viability of schemes?

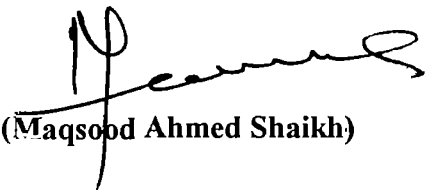
Appropriate methods have been utilized for collecting community level data, in order to measure the impact of water specific interventions. A total of 69 villages were surveyed, out of which 34 villages were in Northern Punjab and 35 in Azad Jammu and Kashmir. Schemes covered in AJK were implemented by the Local Government and Rural Development Department while schemes in Northern Punjab had been implemented by the Public Health Engineering Department

Keeping in view the scope and nature of this study, it can be concluded that:

- a. The community has the strength and skill to plan, execute and manage under-ground water pumping schemes in addition to gravity flow schemes and handpumps, which are already being managed by them very efficiently.
- b. In case of community managed schemes per capita investment and per capita operation and maintenance cost is lower than the schemes managed by government agencies.

I would particularly like to thank the Study Team for their effort in coordinating the field work, in collating the extensive data collected and presenting it in the form of this comprehensive report.

I hope that this study will be useful for regional/national level policy makers to further consolidate community based approaches in planning and implementation of Rural Water Supply and Sanitation programmes. The Ministry of Local government and rural development would welcome any suggestions for the improvements of methodology to make such studies in future more beneficial.



(Maqsood Ahmed Shaikh)

# Acknowledgements

---

The process of conducting this research has been one of evolution - each step has been an iteration of the last one. Having no prior experience to guide us, the way forward often meant un-learning the lessons of the past and invalidating many of our hypotheses

We would like to thank all those who guided and supported us and prevented undue rocking of our efforts. First, we would like to extend our gratitude to the people of the 69 communities, who so selflessly welcomed us within their fold and provided us with the valuable information which forms the mainstay of this report

We would also like to thank colleagues at the Ministry of Local Government, the World Bank Headquarters and the Regional Program Office for their insightful comments and feedback. In particular, we would like to thank Deepa Narayan for assisting us during the formulation of the study methodology and tools and Rekha Dayal for helping us in the editing of the final document. We would also like to thank Allah Javaya for his enthusiasm and his interest in the study, which helped him to become a “social-engineer”. We would specially like to thank the PHED Punjab and the LGRDD AJK for all the help and assistance they extended to us during data collection

Sincere thanks to the Study Team leaders Rabia Khan and Abida Aziz and to the Field researchers Lubna, Irum, Muniba, Monazza, Faisal, Malik Akbar, Azhar and Naveed for their commitment and their excellent team work. Rabia Khan needs a special mention for transcribing Chapter One and for writing the Hasal Case Study.

Sabir Qamar and Faisal need to be commended for singlehandedly translating the data into a readable and useable form and for patiently reformulating the analysis as and when required. Thanks is due to Nina Zubair for designing the visuals and for the many hours she spent sketching and painting

We would like to sincerely thank all those involved in this collaborative effort





# Preface

---

Broadly stated, the objective of this study is to analyse the contribution of participation towards the creation of sustainable and effectively utilised water systems

However, the **key objective** of this study is to examine the impact of agency-specific water supply interventions at the level of the community, in other words, to assess the community-agency fit and its bearing on project outcomes

To understand the mechanisms of participation, Water Committee functioning is documented as a **key measure** of community organisational maturity. The focal point of analysis for this report culminates in an evaluation of the structures and organisational systems associated with effective water user groups and the factors that hinder or support their role in the management of water supply schemes.

Furthermore, the role of **key stakeholders** and their incentives for participation in the sector have also been highlighted to distinguish and classify factors that influence the performance of water schemes

The scope and nature of this study is exploratory, in certain areas the findings may not be statistically relevant, given the small size of 69 villages and the informal sampling techniques followed. However, generalisable principles that can guide sector specific policies and assist in identifying future areas of research, can still be derived from the substance of the data.

Certain unambiguous conclusions can be drawn. There is a direct link between the participation of communities and the sustainability of water systems. Overall, per capita costs of comparable schemes were three times less where communities had contributed financially towards the project and had been involved in project level decision-making. Similarly, per capita O&M costs were also three times lower in such schemes.

Effective use, equity of access and informal coverage through neighbours' connections were also influenced by the extent and depth of community involvement.

Furthermore, the timing and intensity of community involvement during the various stages of the project cycle, is a determinant of the effectiveness, maturity and sustainability of the organisational capacity of the community.



# Contents

---

---

<b>Executive Summary of Findings</b>	<b>3</b>
--------------------------------------	----------

---

## **CHAPTER ONE**

<b>Institutional Arrangements</b>	<b>21</b>
<b>1.1 The Potowar Plateau of Northern Punjab</b>	<b>21</b>
1 1 1 Background	21
1 1 2 Administrative Structures	21
1 1 3 Community Involvement	22
1 1.4 Hiring of Contractors	22
<b>1.2 AJK</b>	<b>22</b>
1 2 1 Background	22
1 2 2 Administrative Structures	24
1 2 3 Community Involvement	25
1 2 4 Resource Generation	26

---

## **CHAPTER TWO**

<b>Background on Water Systems</b>	<b>28</b>
<b>2.1 Existing (Alternative) Sources of Water</b>	<b>28</b>
2 1 1 Equity of Access	28
2 1 2 Pattern of Use	29
<b>2.2 Size of Schemes, Coverage and Service Levels</b>	<b>30</b>
2.2 1 Size of Schemes	30
2.2 2 Service Levels	31
2 2 3 Informal Coverage	31

<b>2.3</b>	<b>Total Project Cost and Source of Funding</b>	<b>32</b>
2 3 1	Total Project Cost	32
2 3.2	Government Contribution	33
2 3.3	Community Financial Contribution	34
<b>2.4</b>	<b>O&amp;M Costs of Schemes</b>	<b>34</b>
<b>2.5</b>	<b>Functioning of Systems and Existing Management Scenarios</b>	<b>35</b>
<b>2.6</b>	<b>Training &amp; HRD</b>	<b>37</b>
<b>2.7</b>	<b>Conclusions:</b>	<b>38</b>

---

## CHAPTER THREE

	<b>Description of the Project cycle</b>	<b>39</b>
<b>3.1</b>	<b>A Step Wise Approach to Changes in the Village Water Supply System</b>	<b>39</b>
3.1.1	The Initiation Process	39
3 1 2	Process of Per Household Contribution	41
3 1 3	Implementation and Construction	43
3.1.4	Operation and Maintenance	44
3 1.5	Community Regulatory Framework	47
3 1 6	System of Water Fee Collection	48
3 1 7	Availability of Water and Satisfaction with Water Quality	53
3 1 8	Expansions in the System	54
<b>3.2</b>	<b>Conclusions:</b>	<b>55</b>

---

## CHAPTER FOUR

	<b>Key Stakeholders in Water Supply</b>	<b>57</b>
<b>4.1</b>	<b>Role of Influential Community Members/Leaders during the WS project</b>	<b>57</b>
4 1 1	Types of Leaders and Revealed Leadership Qualities	57
4 1 2	Role of Leaders in the Initiation Process	60
4 1 3	Role of Leaders in Technology Choice	60
4.1 4	Role of Leaders in Financial Management	60
4 1 5	Role of Leaders in Conflict resolution	61
<b>4.2</b>	<b>Role of Line Department Officials during the WS project</b>	<b>61</b>
4 2 1	Role of Line Department Officials in the Initiation Process	61
4 2 2	Role of Line department officials in Technology Choice	62
4 2 3	Role of Line Department Officials in Financial Management	62

<b>4.3</b>	<b>Role of Community during the WS Project</b>	<b>63</b>
4.3.1	Role of Community in the Initiation Process	63
4.3.2	Role of Community in Technology Choice	64
4.3.3	Role of Community in Financial Management	66
4.3.4	Role of Community in the Construction phase	66
<b>4.4</b>	<b>Conclusions:</b>	<b>67</b>

---

## **CHAPTER FIVE**

	<b>Water Committees: Multi-purpose or Uni-function?</b>	<b>69</b>
<b>5.1</b>	<b>Existence and Typology of Water Committees</b>	<b>69</b>
<b>5.2</b>	<b>Water Committee Functions</b>	<b>72</b>
5.2.1	Regular Meetings	72
5.2.2	Task Function of the Water Committee	73
5.2.3	Autonomy in Decision Making	74
<b>5.3</b>	<b>Process of Selecting Water Committee Members</b>	<b>76</b>
<b>5.4</b>	<b>Profile of Members</b>	<b>77</b>
<b>5.5</b>	<b>Size of Water Committees</b>	<b>78</b>
<b>5.6</b>	<b>Performance of Water Committees</b>	<b>79</b>
<b>5.7</b>	<b>Conclusions:</b>	<b>79</b>

---

## **CHAPTER SIX**

	<b>Participatory Evaluation of Water Supply Schemes</b>	<b>81</b>
<b>6.1</b>	<b>Project Outcomes</b>	<b>81</b>
<b>6.2</b>	<b>Management Task Function Indicators</b>	<b>83</b>
<b>6.3</b>	<b>Community Development Indicators</b>	<b>83</b>
<b>6.4</b>	<b>Equity of Benefits Indicators</b>	<b>84</b>
<b>6.5</b>	<b>Conclusion:</b>	<b>86</b>
	<b>Recommendations</b>	<b>89</b>

---



# Index of Tables & Figures

---

## CHAPTER ONE

Fig 1 0	PHED Organisational Structures, North Zone	23
Figure 1 1.	Approval of Schemes or Projects	25

---

## CHAPTER TWO

Table 2 0	Access by Source	29
Figure 2 0.	Household Connections by Area	30
Table 2 1	Standposts by Area	31
Figure 2 1	Reliance on Neighbours' Connections	31
Table 2.2.	Total Government Contribution by Area	33
Figure 2 2.	Financial Contribution (Mirpur)	33
Figure 2 3.	Financial Contribution (AJK)	34
Table 2.3.	Annual Operational Cost by Area	35
Table 2 4	Status of Functioning	35
Table 2 5.	Period Schemes Functioned	36
Figure 2 4	Existing Management Responsibility by Area	37

---

## CHAPTER THREE

Table 3.0.	Length of the Approval process by Area	41
Table 3 1	Number of Elected Representatives/Scheme by Area	41
Figure 3 0.	Process of Cash Contribution	42
Table 3 2.	Were records Maintained?	43
Table 3.3	Process of Contractor Selection	43
Figure 3 1	Length of Construction Period	44

Figure 3 2:	Type of Faults by Area	45
Table 3.4:	Implementation of Rules by Area	48
Figure 3 3:	Water Fee by Area	48
Table 3.5:	Process of Water Fee Payment by Area	49
Table 3 6:	Process of Deciding Water Fee by Area	49
Figure 3.4:	Non Payment Deficit in Punjab	50
Figure 3 5:	Non Payment Deficit in AJK	51
Figure 3.6:	Non Payment Deficit in Mirpur	51
Figure 3 7:	Changes in the Water Fee	52
Figure 3 8:	Frequency of Water Availability	53
Table 3.7:	Duration of Supply by Area	54
Table 3.8:	Changes in the System by Area	54
Figure 3 9:	Satisfaction with Water Quality	55

---

## CHAPTER FOUR

Table 4.0:	Number of Leaders by Area	57
Table 4.1:	Leadership Quality Scale	59
Table 4.2:	Leadership Task Scale	59
Table 4.3:	Leaders and Decisions regarding Financial Management	60
Table 4.4:	Role of Line Department Officials in Technology Selection	62
Table 4 5:	Role of Line Department Officials in Water fee selection	62
Table 4.6:	Role of Community in the Initiation Process	63
Figure 4 0:	Stakeholders by Technology Choice Northern Punjab Scenario	64
Figure 4 1:	Stakeholders by Technology Choice AJK Scenario	65
Figure 4 2:	Stakeholders by Technology Choice Mirpur Scenario	65
Table 4.7:	Community and Decisions regarding Financial Management	66
Figure 4 3:	Community Participation in Construction	67



---

## CHAPTER FIVE

Table 5.0	Existence of Water Committee by Area	69
Table 5.1	Water Committee Typology by Area	70
Figure 5.0	Lag period in WC Formation (Punjab Case)	71
Figure 5.1	Lag period in WC Formation (AJK Case)	71
Figure 5.2	Lag period in WC Formation (Mirpur Case)	72
Figure 5.3	Frequency of WC Meetings	73
Figure 5.4	Key WC Decisions	74
Figure 5.5	Process of Selecting Members	76
Table 5.2	Change in Membership by Area	77
Table 5.3	Acceptance of Female members by Area	77
Figure 5.6	Size of Water Committee	78
Table 5.4	Performance of Water Committee by Area	79

---

## CHAPTER SIX

Figure 6.0	Project Outcomes (Satisfaction with Water Quantity)	81
Figure 6.1	Management Task Function Indicators (Process of Repair & Fee Collection)	83
Figure 6.2	Community Development Indicators (Water Committee Select & Cooperation)	84
Figure 6.3	Equity of Benefit Indicators (Impact on Women's Lives)	85
Table 6.0	Water Supply Rating Scale	86



# **Executive Summary**



# Executive Summary of Findings

---

## 1 INTRODUCTION

- 1.1 Overall, the objective of this study is to analyse the contribution of participation towards the creation of sustainable and effectively utilised systems
- 1.2 The key objective of this study is to examine the impact of agency-specific water supply interventions at the level of the community, in other words, to assess the community-agency fit and its bearing on project outcomes.
- 1.3 Water committee functioning is documented as a key measure of community organisational maturity. The focal point of analysis for this report culminates in the functioning of water committees and the factors that hinder or support their role in the management of water supply schemes.
- 1.4 Furthermore, the role of key stakeholders and their incentives for participation in the sector have also been highlighted to distinguish and classify factors that influence the functioning of water schemes.
- 1.5 The scope and nature of this study is exploratory, implying that in certain areas the findings may not be statistically relevant. However, generalisable principles that can guide sector specific policies and can assist in identifying future areas of research, can still be derived from the substance of the data.
- 1.6 To measure the impact of water specific interventions, community level data was collected through participatory data collection methods. A total of 69 villages were surveyed, out of which 34 villages were in Northern Punjab, 23 in AJK and 12 in Mirpur. Schemes covered in AJK were implemented by the Local Government and Rural Development Department (LGRDD) while schemes in Northern Punjab had been implemented by the Public Health and Engineering Department (PHED).

## 2 BACKGROUND NORTHERN PUNJAB

- 2.1 The Rawalpindi, Jhelum, Chakwal and Attock districts of Northern Punjab cover the arid zone of the Potowar Plateau, and primarily consist of plains and hills.
- 2.2 Regarding the setting in Northern Punjab, there are two agencies that provide rural water supply, that is, the Public Health Engineering Department (PHED) and the Local Government and Rural Development Department (LGRDD).

- 2.3 The PHED is a purely technical department having no capacity or mandate for community mobilisation work. Furthermore, in terms of gender representation, all staff members are males.
- 2.4 The project identification process is initiated through the elected representatives. The approval process requires the preparation of feasibilities by the PHED. However, the execution of projects is primarily through contractors, who are hired by the PHED, through tendering.
- 2.5 In the past the rural water supply policy in Northern Punjab did not require community participation at any level, including mobilisation of community resources, involvement in project planning and implementation. Cost of O&M for the first two years was built into the overall project cost and the PHED did not charge the community. After the completion of the two year period, schemes were transferred to the Union Council for management purposes.

### **3 BACKGROUND AJK**

- 3.1 The AJK region is divided into five districts, that is, Muzaffargarh, Bagh, Poonch, Kotli and Mirpur. Each district is further subdivided into smaller administrative units called markaz, totalling 30 for the entire region. The terrain is 65 percent mountainous and hilly areas, 10 percent plain and 25 percent is a mix of plain and hilly tracts.
- 3.2 The LGRDD is the executing arm of the government and is organised at three levels, which include the regional, district and markaz level. At the regional level the department is led by a Director, while each district is headed by an Assistant Director and each markaz by a Project Manager.
- 3.3 Most projects are initiated and identified by the community and followed through by elected representatives, i.e. the Union Council members or the District Council representatives and the members of the Legislative Assembly.
- 3.4 The project execution process includes the setting up of a Project Committee at the village level that can take on the responsibility of implementation works. Depending upon the organisational capacity of the community, either the male community members or the Chairman Union Council nominates men from the village to form a Project Committee.
- 3.5 After the completion of the project, the Project Committee stands dissolved. For the purpose of continuity in the management of O&M, it is replaced by a Water Committee consisting of male community members. The existence, effectiveness and the process of selection of Water Committee members varies from village to village.
- 3.6 Mostly communities are able to contribute only part of the costs of a water supply scheme. Currently, the community is required to pay for the following: land, subsidized labour, cost of material and construction of storage tank and

transporting of material. The government only provides funds for the material cost of the pipes and pumping system. All operations and maintenance costs are borne by the community.

#### 4 BACKGROUND ON WATER SYSTEMS

**4.1 “Multiple sourcing” of alternatives is not available in AJK or Mirpur while, in Northern Punjab, at least two types of alternatives were reported in most cases, i.e., wells or handpumps in the house.** In Northern Punjab the most common form of alternate water sources were open wells, followed by household handpumps and streams, i.e. frequency percentages of 75%, 92% and 58%. In AJK, there is greater reliance on spring sources, i.e., an incidence of 77%. Mirpur is similar to Northern Punjab in terms of a greater relative incidence of wells, i.e., 68% of total reported cases

**4.2 Where alternatives are available, the access of households<sup>3</sup> is quite equitable in all three areas, with the exception of community handpumps in Northern Punjab.** Equity of access to different sources is an important determinant of resource allocation at the community level and reflects existing configurations of social influence.

Where wells are reported, in Northern Punjab between 75%-100% of the households are relying on them. Interestingly enough, where community handpumps exist only a few, i.e. less than 34% of household have access to community handpumps, (the order has been reversed in the case of AJK and Mirpur). Since springs are the most common form of alternate sources in AJK, in 71% of the reported cases in this category, 75-100% of the households had access to springs. The same is true with other surface water sources like streams and rivers. In Mirpur, where wells were available, in 86% of the reported cases upto 100% of the households had access to the source.

**In AJK, as compared to Mirpur and Northern Punjab, there is more seasonal dependency on alternatives.**

Where wells have been reported in Northern Punjab, they are either being used all year round, i.e. 48% of total cases or as a back up to the piped water system i.e., 52% of the cases. Where on-site household level handpumps are available they are being used all year round, presumably as the main source of household water supply in 74% of the cases and as an “emergency” source to piped water in the 26% of the reported cases.

In AJK, where springs<sup>4</sup> are reported, 37% are being used all year round, while 33% are utilised during the summer or the winter and only 30% are used as back up to the piped system. The seasonality of use is related to the relative scarcity of water during the summer months. Similar conclusions can be drawn by looking at the pattern of use in the case of other sources.

---

<sup>3</sup> All = 100% of the households, Majority = Upto 75% and Few = Less than 30%

<sup>4</sup> In addition to the springs providing water for the piped system.

In a large number of cases in Mirpur, most alternative sources are being used as back up systems to the existing piped water system, i.e., 76% of the total reported cases in the case of wells, 100% in terms of community handpumps and 100% in terms of dam water etc. The implication of this finding being that the piped system is adequately meeting the needs of the communities in Mirpur.

- 4.3 The trend of distribution, with respect to coverage levels is skewed towards larger schemes in Northern Punjab, this difference can be attributed to larger population sizes.** In Northern Punjab, 82% of the cases reported had more than 100 connections. To the contrary in Kashmir, only 20% of the cases reported had more than 100 connections. For Mirpur the figure was 35%

**However, there is greater reliance on neighbour's connections in Northern Punjab, i.e., overall incidence of 48% implying inequities in the distribution system, problems in the design etc.** The service deficit in Northern Punjab can be measured by looking at relative frequencies. The reliance on neighbours' connections in the street cluster in Northern Punjab was in the 11-50 household category in 48% of the cases as opposed to 20% with in the same bracket in AJK. Reliance on neighbour's connection is quite low in Mirpur and may reflect proper water management and equitable coverage levels, i.e. of the 35% total incidence, 71% cases were in the < 10 household category.

- 4.4 Overall cost of schemes is greater in Northern Punjab.** In terms of project cost, the overall cost of schemes is higher in Northern Punjab, with 60% of total schemes costing more than Rs. 900,000. The opposite is true in AJK, with 75% of schemes costing less than Rs 300,000. Again Mirpur is the median case with both large and small size schemes

**Per capita average cost of the scheme for Northern Punjab was Rs 1014, for AJK Rs 633 and for Mirpur Rs 339.** In other words, the costs of comparable schemes in Northern Punjab are almost 3 times that of schemes in Mirpur. The relatively higher average cost for AJK can be attributed to smaller scheme sizes.

**Furthermore, in most cases in AJK and Mirpur, some form of community contribution was recorded.** There were no cases at all reported of community contribution in Northern Punjab. 53% of the total reported cases in AJK had contributed upto Rs 20,000 towards the water supply system, while the remaining majority 29% were in the 20,000-50,000 bracket and only 18% of the cases fell in the 50000 + bracket, i.e., as the total cost of the scheme increases, community contribution in AJK decreases. The opposite was true in Mirpur with 60% of the cash contribution by the community coming under the 50,000-200,000 bracket

- 4.5 High operational and maintenance costs were reported for Northern Punjab as opposed to Mirpur and AJK, putting into question the affordability of running the schemes.** Subsumed within the annual maintenance costs is the difference in technologies, since a majority of systems in AJK are gravity flow, the annual maintenance costs are lower than in the other areas, with 50% of the cases having an annual maintenance cost of upto Rs 2000.



However, even where technologies are similar, as in the case of Mirpur and Northern Punjab, annual maintenance costs are radically different, with 82% of the reported cases within Mirpur having an annual maintenance cost between Rs 15000-35000. Annual maintenance cost in Northern Punjab is extremely high, with 79% of the cases having annual maintenance costs of more than Rs 70,000.

In terms of per capita annual O&M costs, there is a marked discrepancy between the three areas: Northern Punjab per capita cost of O&M was Rs 175 annually, for Mirpur it was Rs 64 annually, while for AJK it was Rs 34 annually. **In other words, per capita O&M for comparable schemes in Northern Punjab was almost 3 times higher than that of Mirpur.**

- 4.6 “Non-functioning” schemes were reported only in Northern Punjab, i.e., 26% of the total schemes surveyed.** The majority of schemes were seen to fail after the first two years of operation, i.e., after they were handed to the Union Councils (with no prior involvement).

The reasons for non-functioning can be classified into three main types: issue of management and clarity of responsibility; the second was related to asset management and collection of bills; the third major cause for failure can be attributed to sharing of water rights between villages and the lack of cooperation of the community

- 4.7 The focus on formal training is limited in all three areas and relates to “technical” inputs only.** The spectrum of training in all three areas is extremely limited and adhoc. In fact formal training was provided in only 20% of the cases in Northern Punjab, 25% in AJK and 30% in Mirpur. In Northern Punjab the most common form of training was that of valve repair and valve management, while in AJK the most common type of training was repair of pipe joints. For Mirpur, common areas of training inputs included operation of motor or pump and valve repair

## **5 DESCRIPTION OF THE PROJECT CYCLE**

- 5.1** To clarify roles and responsibilities, it is important to understand the range and variety of sub-project activities, which can be clustered under six broad project phases - Initiation, Planning & Design, Implementation, O&M, Monitoring & Evaluation and Expansion. By reviewing the flow of decisions that fall under each phase, the implications for project design, planning and mechanisms for involving communities can be determined.

- 5.2 The approval period in AJK and Mirpur is double that of Northern Punjab.** Most schemes in Northern Punjab are approved within one to two years after the application is submitted to the authority in question, i.e., 80% were reported to have been approved within this time period. The process of approval in AJK and Mirpur has a much longer lag period, 36% and 42% of the cases may take longer than 4 years to approve, as compared to only 16% in Northern Punjab

A large number of schemes in Northern Punjab have been approved by the direct involvement of elected representatives at the MNA/MPA level as a way of influence peddling or gaining of votes and the possibility of circumventing official procedures is quite often exercised.

Procedures between the two areas are also radically different, with a much more inter-active community focused approach being followed in AJK/Mirpur. Terms and conditions, the total funding and agency procedures are in most cases discussed with community, as opposed to Northern Punjab where one sided information flows are common. A resource assessment is also conducted and the overall contribution of the community decided. These activities may be pronouncing the approval period differences. Other reasons could include fund scarcity at the level of the agency and lower priority being assigned to the water sector in AJK. **In other words, the “direct” involvement of community at this stage implies a more time consuming process of initiation.**

- 5.3 The total cash contribution reported was the highest in Mirpur.** The incidence of direct contribution by the community is extremely low in Northern Punjab, i.e., in only 8% of the cases was some form of contribution noted. Where contribution was made, it ranged from Rs 30- Rs. 500 per household on average.

In the case of AJK, 69% of cases were reported to have made direct monetary contribution. In terms of per household contribution, 69% of the households contributed upto Rs 500 and below. Only 10% cases were reported to have contributed more than Rs 1000/household.

The distribution for Mirpur is quite different from the rest of the two areas (82% of incidence reported), with 55% of the cases reported falling within the Rs 101-500 range. However, 17% of the cases fell in the > Rs 1000 range.

In terms of financial contribution, upfront mechanisms were fairly common with 43% in AJK and 48% in Mirpur. However, the norm is to spread the per household contributions over a period of time that is, money was collected more than 2 times in 57% of the cases in AJK and 52% of the cases in Mirpur.

Accountability and transparency of cash contributions is another very crucial issue, which can also have an impact on project specific outcomes. The maintenance of correct and visible records is therefore an important function. In 73% of the cases in AJK and 71% of the cases in Mirpur, records had been maintained and were readily available.

- 5.4 Most contractors were selected through tenders in Northern Punjab, while the involvement of the community in contractor selection was the highest in AJK.** The practice of tendering is common in Northern Punjab with 88% of the contractors being selected in this manner. For AJK and Mirpur the percentages are 33% and 20% respectively. 67% of the reported cases in AJK have some community involvement, either through the village influential or the Project Committee. For Mirpur, the most common mode of selection is undertaken through the direct involvement of the agency, i.e., 60% of the cases.

**Lag periods in construction were more common in AJK and Mirpur.** The lag period in construction was higher in both Mirpur and AJK, i.e. construction stopped at least once in 54% of the cases in Mirpur and AJK respectively. In Northern Punjab, construction stopped in only 33% of the cases. However, the reasons given for this lag in the case of AJK and Mirpur were lack of community funds, supply of raw materials and under very rare cases was it the contractor's fault. In the case of Northern Punjab, issues related to the contractor like change in contractor, were the major causes of construction delays.

Furthermore, the frequency of delays was higher in Northern Punjab, in 50% of the cases where construction stopped, it stopped more than 2 times, in AJK construction stopped more than 2 times in 33% of the occurrences and in Mirpur it was 40%.

- 5.5 Planned maintenance was reported in very few cases in all three areas and could impact on repair costs.** In only 5% of the reported cases in AJK and 9% of the reported cases in Mirpur was there any type of concession for planned maintenance. Planned maintenance included regular cleaning of source and storage tank, regular cleaning of well, chlorination, valve repairs etc.

**Common faults included problems in the mainline, the distribution system and the motor.** At least 45% of the cases in AJK had some mainline problems, while the common fault occurring in Northern Punjab and Mirpur was linked to the motor.

**The quality of repair is also of a lower standard in AJK as compared to Mirpur in particular.** This difference is resulting from the fact that repair (especially in the case of distribution pipes) is being undertaken informally, e.g., tying of plastic bags over broken/ruptured pipe.

- 5.6 The existence of rules was the highest in Mirpur, however, in Northern Punjab there was a greater concentration on procedural regulations.** Rules existed in all three areas, i.e. 56% of total cases reported in Northern Punjab, 75% in AJK and 90% in Mirpur.

The regulatory framework that exists at the community level is essential for the smooth functioning of the water system. Three sets of specific rules existed, i.e., rules regarding water use and distribution, rules regarding disconnection/connections (procedural regulations) and rules regarding maintenance.

**Implementation of rules was higher in AJK.** In the case of Northern Punjab, even though procedural rules exist they are being implemented in only 1/3 of the total cases reported. The opposite is true for both AJK and Mirpur with a 2/3 implementation level, i.e. 70% and 63% respectively.

The enforcement of rules and the issue of conflict resolution, is another very important area for understanding the dynamism of the regulatory framework. In only 21% of the cases in Northern Punjab, 27% of cases in AJK and 6% of the

cases in Mirpur did conflicts arise over rule implementation. The low incidence of conflicts in Mirpur, , could be the result of better information sharing in the community, i.e., rule transparency. Other reasons could include historical factors, like the displacement of population in the Mirpur area, which encouraged homogeneous groups to re-settle on higher ground and thus led to community cohesion.

- 5.7 The average fee amount varied between Rs 15-30 in both Northern Punjab and Mirpur. In a majority of cases in AJK, there was no regular water fee.** The AJK case is slightly different, since there are a large number of gravity flow schemes, 61% of the cases had no regular water fees. In the remaining cases, the average amount of the water fee was upto Rs 15 per month.

**The process of fee selection was the most “open” in AJK and Mirpur as compared to Northern Punjab.** Three main “process” methods of decision making were noted. The first form, i.e., an open village wide meeting is the most representative one with 35% of cases in Northern Punjab reported in this category, 78% in AJK and 75% in Mirpur. The second less egalitarian form is that of holding a meeting with selected community representatives, with 25% in Northern Punjab, none in AJK and 19% in Mirpur. The least representative is the case where the agencies decide the appropriate water fee, 40% of the cases in Northern Punjab, 22% in AJK and 6% in Mirpur.

- 5.8 Non-payment of water fee is not a major issue in AJK and Mirpur. However, a major non-payment deficit exists in Northern Punjab, which in turn impedes the functioning of the system.** The non-payment deficit in Northern Punjab can be attributed to the non-representative process of fee change, combined with the larger incremental hike i.e. Rs 10.

In 81% of the cases in Northern Punjab, 42% of the cases in AJK and 77% of the cases in Mirpur, water fee was changed at least once. The low change rate in AJK can be attributed to the differences in technology, the non-existence of regular fees and maybe even lower service levels where lift pump schemes exist (standposts vs household connections).

In Northern Punjab the incremental change was higher that is Rs 10, in 52% of the total cases reported. For AJK and Mirpur the increments of Rs 5 were more common, i.e., 62% and 71% respectively. However the frequency of change, i.e. the number of times water fee changed since the scheme started, was higher in both AJK and Mirpur, implying that the overall change in the water fee was similar in all three areas.

The direct involvement of government functionaries in determining the changes in the water fee are the least in Mirpur (9%), followed by AJK (15%) and by Northern Punjab (35%). Similarly the role of the community and the Water Committee is most visible in Mirpur, 38% in both cases, i.e. the majority of changes are decided in consultation with the community. The structure is most non-representative in Northern Punjab and where communities are being consulted, in 30% of the cases it is through the village influential or selected village representatives.

**5.9 Reported frequency outcomes of water availability were more diverse in Northern Punjab and AJK.** Overall, in all three cases the majority of schemes are receiving water at least once a day, i.e. 85% in Northern Punjab, 91% in AJK and 73% in Mirpur. Compared to the other areas, in Mirpur there is a concentration on just three types of outcomes, with 27% of the cases in the Alternate days category, 40% receiving water Twice a day and the remaining at least Once a day. This may be implying that communities are trying to keep operational costs down by water rationing or that water is being shared from one source amongst different communities/villages

**The duration of supply was however extremely limited in all three areas, with water available for half an hour each time.** Majority of cases reported in all three areas were receiving water for at least half an hour, that is 97% in AJK, 90% in Mirpur and 77% in Northern Punjab. If Northern Punjab is compared to Mirpur, the incidence of 91-120 minutes duration is greater, 22% and 10% respectively. This could once again reflect the fact the communities in Mirpur are more attuned towards addressing cost reduction issues and are paying for the service level they can afford

**Communities were however most satisfied with the current system in Mirpur.** Communities in Mirpur have the highest satisfaction level that is 82%. To the contrary, satisfaction with water quality is the lowest at 67% in AJK. One reason for this could be the seasonal turbidity of water and in some cases the seasonal variation in quantity of water available

**5.10 The highest incidence of expansions or changes in the system were reported in Northern Punjab.** In 70% of the cases in Northern Punjab changes were reported and primarily involved changes in the distribution network or replacement of motor. For AJK and Mirpur the numbers are 56% and 60% respectively

**The majority of cases of changes reported in AJK and Mirpur were financed by the community, the opposite was true in Northern Punjab.**

## **6 KEY STAKEHOLDERS IN WATER SUPPLY**

**6.1 The role of the community leaders in the smooth functioning of the system is viewed to be critical by the communities.** Supportive leadership is essential for the sustainability of any community based organisation. Generally, there are two sets of leaders in a rural community, i.e., the traditional leaders like the numberdar, the biraderi elders and the elected representatives, like the union councillors

There is a slight variation amongst the three areas in terms of number of leaders, however a majority of cases reported had at least 2 leaders, i.e., 62% in Northern Punjab, 64% in AJK and 57% in Mirpur. The number of leaders, can be one way of viewing the accountability of the leaders and the issue of power sharing and decision making at the community level

With changes in the economic profile of the AJK/Mirpur area and with better access to infrastructure i.e roads, the profile of leaders has also undergone a transformation. This new class of leaders has primarily emerged as a result of international migration, especially in areas like Mirpur and Kotli in AJK and can be termed as “community activists”, i.e. community members who do not hold any political office or traditional status in the community, but who have been involved in public activities.

**There is direct involvement of Union Council level representatives in the initiation phase of the water supply scheme in all the three areas.** Furthermore, where the initiators are at the level of the union council, they are also residents of the area. High level representatives have the highest incidence in Northern Punjab (17%) and includes MPA and MNA initiated schemes. Community members and activists are playing a pivotal role in the area of need articulation in AJK and Mirpur.

Overall figures reveal, that in both AJK and Mirpur at least 2 individuals have been responsible for the initiation of the water supply scheme, i.e., an elected representative along with a community member or community activist. In Northern Punjab the role and maturity of the community is at an incipient level, most initiation decisions as revealed above are being undertaken by elected representatives.

- 6.2 In terms of technology choices, the role of the line department comes out very clearly in the case of Northern Punjab, especially with respect to decisions regarding choice of pumps, main line and distribution networks.** In Northern Punjab therefore, most of the agency level inputs go in the technological design of the scheme and in determining the feasibility of the technological options.

**Communities in both AJK and Mirpur are actively involved in source selection, tank decisions and service level decisions.**

- 6.3** The classification of financial decisions, during the life cycle of the project involve three types of decisions, i.e., collection of household contribution during the implementation of the project, record maintenance tasks and water fee collection decisions.

**Financial management is being undertaken by either elected representatives or line department officials in Northern Punjab.** In Northern Punjab with respect to water fee decisions, in 42% of the cases decisions were made at the Union Council level and in 47% of the total cases, the fee amount was decided by line department officials (usually the SDO or the Overseer).

**In AJK and Mirpur this responsibility is being shared amongst community members and/or elected representatives.** In a majority of the cases decisions regarding water fee in Mirpur are being undertaken in consultation with community members (52%) or community activists (14%), 37% and 18% respectively for AJK.

**6.4 The role of the community during the construction phase is broader in both AJK and Mirpur as compared to Northern Punjab.** The supervisory/management role of the community is apparent in both AJK and Mirpur, 23% and 26% respectively and non-existent in Northern Punjab, i.e., 2%. Construction decisions are therefore beyond the ken of communities in Northern Punjab

## **7 WATER COMMITTEES: MULTI-PURPOSE OR UNI-FUNCTION?**

**7.1** The existence of Water Committees is lowest in Northern Punjab. 71% of villages in AJK and 80% of villages in Mirpur had Water committees, as compared to 44% in Northern Punjab. The Water Committees that exist in Northern Punjab are usually ad-hoc organisations, which have been quickly organised and are non-representative of the village.

**Furthermore, the lag period in committee formation is also the longest in Northern Punjab, i.e., on average 2-3 years as compared to that of a few months in AJK and none in Mirpur.** The existing lag period in Northern Punjab reflects the PHED policy of managing the scheme for a period of two years.

**7.2** The process of holding meetings was most regularised in Mirpur. The incidence of holding weekly meetings was the lowest in Northern Punjab with only 4%, 17% for AJK and 21% for Mirpur. The process of information sharing and decision-making is more regularised in Mirpur as compared to the other two areas, i.e., committees meet at least once a month in 42% of the cases.

**The “defunct” non-functioning Water Committees were highest in AJK, followed by Northern Punjab. No “defunct” committees existed in Mirpur.** The defunct nature of Water Committees is visible in 13% of the cases in Northern Punjab and 22% of the cases in AJK. Most Water Committees, in AJK begin as formalised village committees with a clear cut mandate for managing the water supply scheme, but with time the intensity of effort peters out and the committee dissolves into a more cluster specific entity, where pipe repairs (the most common form of faults/breakdowns) is undertaken informally by men of the effected area. The age factor of the water committee along with the higher presence of water committees in AJK, may be compounding the above figures

**7.3** The perceived role of Water Committees was linked to “post” system decisions involving O&M only, in all three areas. In Mirpur, in 72% of the cases the main role of the committee was seen as solving all water related problems, thus imparting a more broader role to the Water Committee in Mirpur. The same was true in 59% of the cases in Northern Punjab and 45% of the cases in AJK. The other major job of the Water Committee was seen to be maintenance of the system, an incidence of 41% in Northern Punjab and 28% in both AJK and Mirpur

**7.4** Relative to Northern Punjab, committees in Mirpur and AJK have been involved in technology choice decisions. The involvement of Water Committees in the planning and design stage is marginal, with 17% cases reported in North-

ern Punjab, 41% in AJK and 25% in Mirpur in terms of deciding technology options. In AJK and Mirpur the figures may be high due to the existence of Project Committees during this stage.

**The role of Water Committees in Mirpur focuses on asset management like fee decisions etc.** In Mirpur, the decisions regarding water fee amount and changes appear to be the primary responsibility of the Water Committee, i.e. 70% and 55% respectively; final decision is made in collaboration with community members (See Section 5.7). Given the existence of gravity flow schemes, water fee decisions do not appear to be that important in AJK and subsequently the involvement of Water Committees in this area is low as well.

In Northern Punjab in 41% of the cases, the amount of the fee is decided by the committee, however, in a majority of cases in consultation with elected representatives or line department officials. In other words the decision of introducing and changing the water fee may not be an autonomous decision in Northern Punjab.

**However, in all three areas, the role of the Water Committees in O&M is negligible and reflects the lack of institutional maturity of the Water Committees.** In all three cases if O&M decisions like water timings, hiring and firing of employees and changes in maintenance are evaluated, the role of the committees is marginal. This necessarily implies that either the functions of O&M are being taken on "informally" by other groups (like concerned mohalla groups) or other stakeholders like the elected representatives/influentials of the village or the line department are performing these tasks. This puts into question the efficacy and viability of the Water Committees for performing O&M tasks.

**Similarly the role of the Water Committees in deciding the expansion of the scheme is also marginal and again illustrates the lack of organisational viability and the inadequacy of independent decision making, within the existing structures of the Water Committee.**

- 7.5 The process of selection of Water Committee members is most egalitarian in Mirpur.** There are four main types of selection processes - i.e. selection by UC, by village influentials, in an open forum or representation based on mohalla (village sector) level. The involvement of Union Council representatives is the highest in Northern Punjab (i.e. 43%) and supports the existing policy level structures. However, the role of the village level influentials is strongest in AJK and highlights the underlying power structures. The process of selecting members is most open in Mirpur with 31% of the selection of members being conducted in open meetings, the remaining selected on the basis of village sector level representation or by village influentials.

**There is a slight variation within the three areas regarding the type of member.** The presence of elected representatives, like Union Council Chairman and members of the Union Council, is greater in Northern Punjab, and represents the



non-representative nature of the Water Committee (48%). Former Union Council members, however, are more active in water management in AJK, as can be seen by the higher involvement of community activists (55%), out of which quite a few were retired or had been involved in politics

Furthermore, in terms of member turnover, in 50% of the cases membership changed in Mirpur. In both Northern Punjab and AJK, membership change was not common, only 29% and 19% of reported cases

**The acceptance of female members was low in all three areas.** One of the most common barriers identified for the non-participation of women was their lack of education. Cultural barriers were stronger in Northern Punjab and the role of women was perceived to be domestically inclined, i.e., an issue of purdah and segregation. In AJK and Mirpur women's lack of time was given as a major reason for non-participation

**7.6 The size of the Water Committee was largest in Mirpur and can be attributed to greater clarity in terms of member roles and responsibilities.** The average size of the Water Committee varied from 4-6 members. Some differences emerged between Northern Punjab, AJK and Mirpur that is, the average size was 5 members in Northern Punjab, 4 members in AJK and 6 members in Mirpur

**7.7 Consequently, the level of satisfaction with Water Committees was highest in Mirpur and lowest in Northern Punjab.** The level of satisfaction with the Water Committee performance is highest in Mirpur, i.e. 93% and could be linked to the relative clarity in the roles of the members, the relative openness of the process of selection, the greater turn over of the members and greater accountability.

Community level satisfaction with Water Committees was lowest in Northern Punjab i.e. 48%. This supports the lack of involvement of the community in the entire process of the project, i.e. from the design and implementation to the selection of Water Committees and the overall management of the system. The relatively lower level of satisfaction in AJK (as compared to Mirpur) can be linked to the "informal" nature of Water Committees and the lower intensity of effort with time

## **PARTICIPATORY EVALUATION OF WATER SUPPLY SCHEMES**

A simple 3 scale matrix was developed in order to enable community members to conduct an evaluation of water supply schemes and to understand the perceived performance of water supply systems. Schemes were rated by community members, according to the following indicators:

Project outcomes: Quantity of water. The indicator scale illustrates that 42% of the respondents were satisfied with the availability of water, while 22% were very satisfied and 36% were dissatisfied.

Management Task Function indicators. Process of repair, Process of fee collection: The overall performance was ranked 41% above average, 30% average and 29% below average

Community Development Indicators: Process of Water Committee selection, Ability of people to work together to solve water related issues: The overall rankings were of above average 44%, average 31% and below average 25%.

Equity of Benefits Indicators. The impact on women's lives: The following rankings were given, 53% were ranked above average, 35% ranked average and 12% ranked below average

A brief look at the overall ranking shows that with respect to the above mentioned set of indicators, the schemes are ranked as performing between the average and above average scale. However, in 28% of the cases the schemes were performing below average. The areas that require improvement are the following.

- 8.1 To improve the performance of water projects with respect to the quantity of water more attention needs to be paid to technology choice (in consultation with communities) and to the equitable sharing of benefits within the village.
- 8.2 The Management Indicators like bill collection and repair systems need to be more formalised, more accountable and in accordance with the needs of the community. There is a need for role responsiveness and clarity within the spectrum of water project management, i.e., those responsible for repairs should also be accountable to the community.
- 8.3 The maturity index of the community needs to be enhanced by a less top down/directive approach being adopted at the field level and by a more egalitarian Water Committee selection process
- 8.4 The impact on women's lives is positive and can be improved by their direct involvement in selecting service levels and by improving the reliability of the system

## **9 RECOMMENDATIONS**

The previous sections have highlighted the dilemmas, paradoxes and experiences of developments in the water sector in AJK and Northern Punjab. Based on this analysis certain lessons can be derived, that will be important for the future sustainability of water supply projects.

### **Implications for Policy**

- 9.1 A policy environment, which is transparent and consistent is essential for creating effective delivery mechanisms. The consistency in policy in AJK in terms of community "financial" contribution and their role in O&M, has contributed towards creating functioning schemes. Conflicting policy in Northern Punjab, to the contrary has resulted in a larger number of non-functioning schemes and defunct community organisations

## **Implications for Human Resource Development**

- 9.2 However, from the above analysis it is also clear that community contribution in terms of “financial” input is not an adequate means to achieve long term community development. Alternatively, training and hrd (both technical and non-technical) needs to be an integral part of the process, to ensure autonomy in decision making, cost internalisation and improved quality of O&M, at the level of the community.
- 9.3 As mentioned, the interactive process between the agency and the community, the community-agency fit, will determine the ultimate community level outcomes and their longevity and appropriateness. There is a need for re-orienting frontline extension workers through training in community development. However, no such attempt can ever be successful in isolation - within the forum of the agencies, a common understanding of the principles of community development needs to be promoted.
- 9.4 Attention needs to be paid to the existing gender balance of extension workers within the staff profile of the implementing agencies. In the future, employment of females should be promoted at all levels, in particular at the level of the extension worker, to ensure that the needs of rural women are addressed adequately.

## **Implications for Project Implementation**

- 9.5 Community development requires patience, flexibility and the need for concessionary targets. In the case of AJK and Mirpur from the approval stages to the construction and the O&M, lags have been demonstrated. Any project cycle needs to visibly account for these lags in order to achieve sustainability.
- 9.6 The timing of Water Committee formation is important for determining the final intensity of community development. The case of both AJK and Northern Punjab has shown that even a 6 month lag in the formation of the Water Committee can lead to lack of effort and poor intensity of involvement with time. In Mirpur this was not demonstrated and in a number of cases (See Case Study 5) the Water Committees have graduated into becoming peri-urban utilities.
- 9.7 Water Committee performance as a viable community organisation has not been very positive. Water Committees as they are constituted perform within an extremely narrow spectrum. With time member enthusiasm and incentives begin to fade. There is need for building sound incentive structures for participation through direct remuneration to Water Committee members. With time, there may also be a need for linking the Water Committee to developments and changes in other sectors (as noted in 40% of the cases in Mirpur Water Committees were undertaking developments in other areas), in other words there is a need for creating opportunities with time for “broadening” the mandate of committees.

- 9.8** The process of selecting Water Committee members and of establishing the water fee etc. needs to be open and egalitarian with very little official involvement. This will ensure accountability and will reduce the incidence of fee defaulters, as can be seen in AJK and Mirpur.

**Implications for Technology Choice and Women's Involvement**

- 9.9** Where communities are given the choice, they will go for the least costly option, as can be seen in the operating of schemes in Mirpur and the high levels of consequent satisfaction with water availability. To achieve such efficient outcomes, as a necessary prerequisite, the role of communities in technology selection should be enhanced.
- 9.10** The role of women in the management of water supply schemes has been negligible, however it has been established that the impact on their lives is extremely positive. To further strengthen these linkages, there is a need for determining mechanisms that will ensure greater female involvement in the planning, design and siting stages. Furthermore, innovative integrated strategies for enhancing the potential of women, i.e. linking developments in water to other sectors (credit and income generation) etc., should be developed

# **Main Report**



# Institutional Arrangements

---

The following Chapter will focus on describing the framework of administrative arrangements within Northern Punjab and AJK. The objective of this Chapter is to validate the existing procedures and to understand the range and scope of field practices from the perspective of different levels of agency staff.

For an unbiased appraisal of ongoing practices, interviews were conducted with line department officials including the Chief Engineer, Executive Engineers, Assistant Directors, Project Managers, Union Council Secretaries etc. Some information was also collated from existing agency specific documents and guidelines.

## 1.1 THE POTOWAR PLATEAU OF NORTHERN PUNJAB

### 1.1.1 Background

The Rawalpindi, Jhelum, Chakwal and Attock districts of Northern Punjab cover the Potowar Plateau. The four districts combine to form one division which is administered by a Commissioner. Each district is then sub divided into smaller administrative zones called *tehsils*. These districts are in the arid zone and consist of plains and hills. Given the topography, most of the rural water supply schemes are based on lift pump systems from wells.

### 1.1.2 Administrative Structures

Regarding the administrative setting in Northern Punjab, there are two agencies that provide rural water supply, that is, the Public Health Engineering Department (PHED) and the Local Government and Rural Development Department (LGRDD). In the context of the PHED, the five districts fall under the Northern Zone of the Department's administrative wing which is headed by a Chief Engineer (Figure 1.0). The North Zone is further divided into five circles. Each is headed by a Superintendent Engineer who is responsible for the physical execution of projects. The Superintendent Engineer is supported by the following field staff. Executive Engineers (XEN) who are incharge of each district along with Sub Divisional Officers (SDO) and Overseers/Sub Engineers.

Project design and costs are prepared by the field staff under the supervision of the XEN. The final scrutiny of the design is undertaken by the Superintendent Engineer. Project costs of upto Rs. 3.5 million are approved at the divisional level by the Commissioner, the Superintendent Engineer and other administrative officials. The Departmental Development Sub-Committee chaired by the Departmental Secretary of the Provincial Gov-

ernment approves of projects costing between Rs. 3.5 to 6 million. Projects costing more than Rs. 6 million to Rs 100 million are approved at the provincial government level by the Provincial Development Working Party whose Chairman is the Secretary P&D.

### **1.1.3 Community Involvement**

Government policy in Northern Punjab does not require direct community participation or mobilisation of community resources for meeting capital cost requirements. The PHED staff has technical know how, however, they are not equipped to undertake community mobilisation. Mostly graduates of engineering universities and polytechnics are recruited as SDOs and Overseers etc. Along with the skill mix of PHED staff, gender representation is also truncated for in terms of gender representation all staff members are males. Furthermore, there is no interaction with other line departments like the LGRDD who have some expertise in community organisational work. As a result of these and other factors, the PHED is a purely technical department with no capacity for community mobilisation work.

In terms of management options, the past practice has been that after the completion of the project the PHED manages the scheme for two years and then hands it over to the Union Council for management purposes. O&M cost for the first two years was built into the overall project cost and the PHED did not charge the community.

### **1.1.4 Hiring of Contractors**

The project identification process is primarily initiated through the elected representatives. The approval process also requires the preparation of feasibilities by the PHED, however, the execution of projects is primarily through contractors hired by the PHED through tendering. Technical sanction of a project requires hiring of contractors for construction works. For this purpose the Executive Engineer is authorised to award projects through tenders of upto Rs 1 million. The Superintendent Engineer is authorised to award projects costing between Rs. 1-5 million and the Chief Engineer awards all contracts costing more than Rs 5 million.

The practice of tendering has a direct impact at the community level in terms of capacity building. Training of community members depends on the will of the contractor, that is, if he hires local labour he provides on the job training. However if he brings his own labour then there is only a very remote possibility of the community being involved in this kind of on-the-job training.

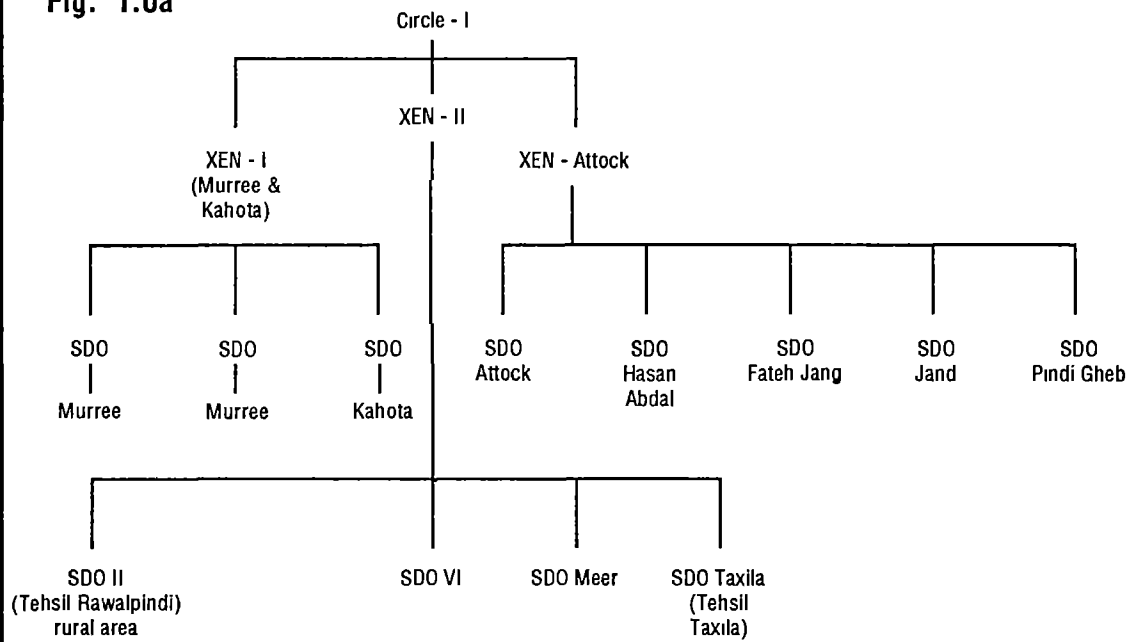
## **1.2 AJK**

### **1.2.1 Background**

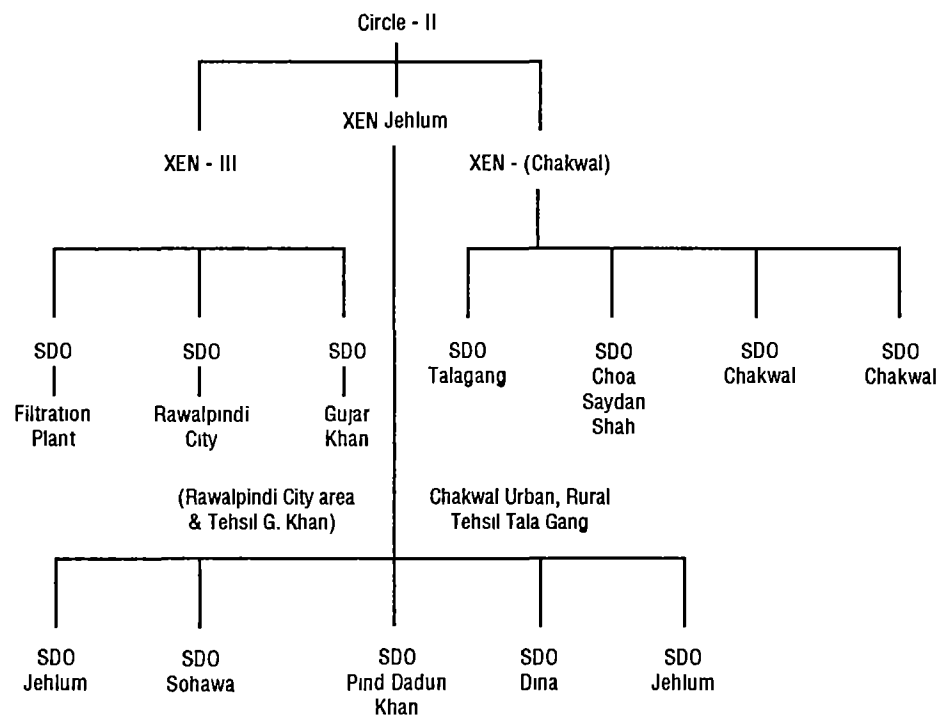
The AJK region is divided into five districts, that is, Muzaffarabad, Bagh, Poonch, Kotli and Mirpur. Each district is further subdivided into *marakaz*, totalling 30 for the entire region. The terrain is 65 percent mountainous and hilly areas, 10 percent plain and 25 percent is a mix of plain and hilly tracts. The technology for rural water supply schemes is therefore



**Fig. 1.0a**



**Fig. 1.0b**



**Fig. 1.0 PHED Organisational Structures, North Zone**

a mixture of either gravity flow or pumping systems. Gravity flow schemes are primarily in mountainous districts of Muzaffarabad, Bagh and Poonch, while pumping systems are mainly located at Mirpur and Kotli.

### **1.2.2 Administrative Structures**

Administratively, there are several tiers of representation at the field level. These are as follows:

#### At the village level

##### **1.2.2.1 Member Union Council**

One Union Council consists of five to six villages, each represented by a councillor who is directly elected on a non-party basis. However, tacit political affiliations are maintained to ensure winning the elections. The councillors in turn elect one of their members as the Chairman. The Union Council is primarily responsible for the initiation of projects, the maintenance and monitoring of existing facilities and the solving of village level conflicts. The Chairman has the powers to approve projects and to appoint Project Committees.

#### At the district level:

##### **1.2.2.2 Member District Council**

District Councillors are also directly elected on a non-party basis. Each District Councillor represents villages falling under three Union Councils. The District Councillors elect one of their members as Chairman. The responsibilities of a District Council are similar to a Union Council, but at a much wider scale. In addition, the District Council also mobilises local resources through taxation and octroi, which are disbursed at the discretion of the Chairman in consultation with the members.

#### At the regional level

##### **1.2.2.3 Members of the Legislative Assembly**

Members of the Legislative Assembly of AJK are directly elected and are allowed to have political affiliations. In addition to making policies for the region, recommendations for development projects by the members are implemented through an Advisory Council.

##### **1.2.2.4 The Local Government and Rural Development Department**

The department is the executing arm of the government and is organised at three levels. At the regional level the department is led by a Director, who is accountable to the Secretary LGRDD. At the district level, it is headed by an Assistant Director, who is also answerable to the District Council Chairman for projects executed from District Council funds. Each markaz office has a Project Manager who is responsible for executing all projects approved at the various levels. The Project Manager is supported by a Sub-Engineer, a Supervisor and six Union Council Secretaries. The engineering component of all schemes is prepared by the Assistant Engineer at the district level with back up support from the Sub-Engineer (Overseer).

The LGRDD has inducted female extension staff as sanitation promoters, however, there is no gender representation in the planning and execution of projects. Among the extension staff, the Union Council Secretary is provided with as intensive six months general training which includes topics like first aid, farming practices, laws, book keeping etc. Among the community, males are to be provided on the job training while a project is being executed, so that minor repairs can be undertaken by them, once the project has been completed.

### 1.2.3 Community Involvement

Most projects are initiated and identified by the community and followed through by elected representatives. The diagram given below indicates interaction of the community with various levels of government for project approval

After identification of needs, the demand for a project ends up at the District office of the LGRDD for a feasibility study to determine its costs etc. Once the project design has been completed, the schemes are sent to the District Council for approval. Schemes are selected by the Union and District Councils on the basis of funds available to them.

The project execution process also includes the setting up of a Project Committee at the village level that can take on the responsibility of implementation works. According to departmental statistics, almost 90 percent of its projects are implemented through Project Committees. Alternatively, schemes may be implemented through the Department (LGRDD) or through private contractors, that is, through tendering.

Depending upon the organisational capacity of the community, either the male community members or the Chairman Union Council nominates men from the village to form a

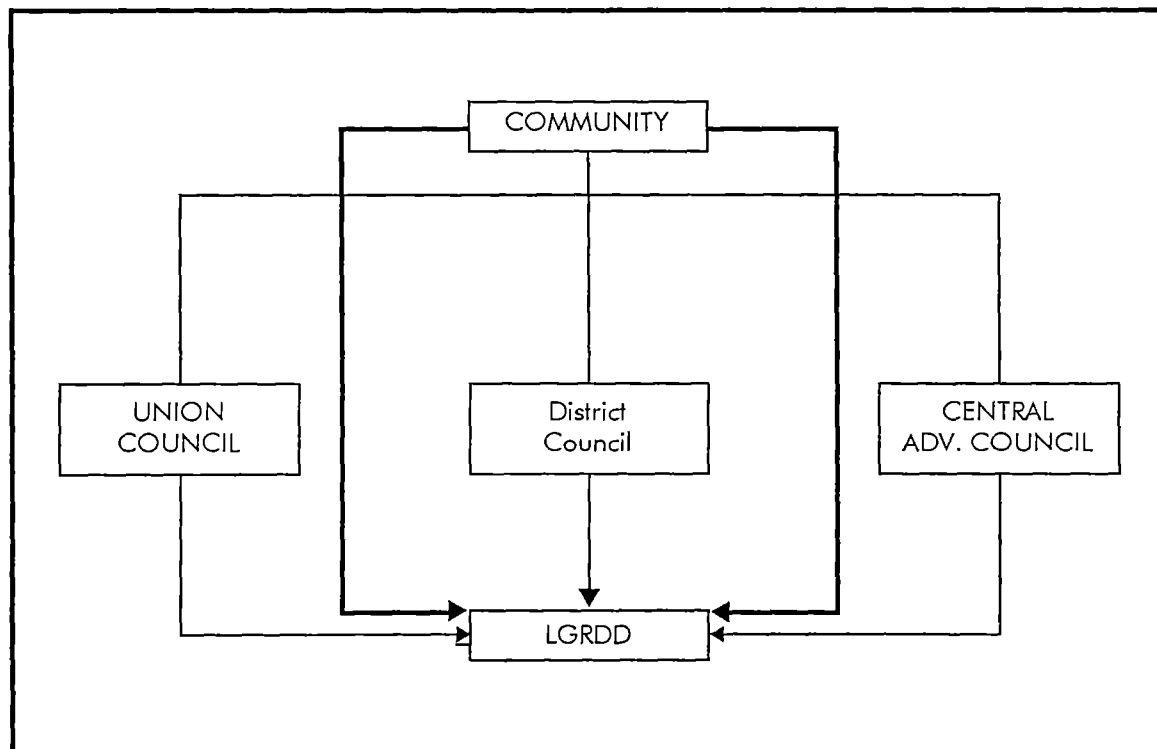


Figure 1.1 Approval of Schemes or Projects

Project Committee It comprises of 3 to 5 representatives of which one is selected as the Project Leader. Membership to the Project Committee is not restricted to ordinary villagers, therefore, in most cases the Union Council Members or Chairman or his supporter from the village is a member and invariably becomes the Project Leader. The other three or four members play a supportive role in terms of keeping accounts, helping with the purchases, supervising construction etc

Once the Project Committee is approved by the Chairman of the Union Council, the Project Leader gives an undertaking signed on a legal document to the LGRDD, in which the responsibilities of each party are mentioned. This undertaking makes the Project Leader and not the Project Committee responsible for the utilisation of the cash amount and material provided by the department After the undertaking is submitted by the Project Leader, funds are released by the department on an installment basis

After the completion of the project, the Project Committee stands dissolved For the purpose of continuity in the management of O&M, it is replaced by a Water Committee consisting of male community members. The existence, effectiveness and the process of selection of Water Committee members varies from village to village Any repair expansions, or improvements in the scheme which require additional government funding are treated as new projects, and would require the formation of Project Committees. Schemes that are six to eight years old require rehabilitation and can also be taken up as projects

#### **1.2.4 Resource Generation**

Development priorities are assigned by the Planning Department of AJK under the direction of the Ministry of Kashmir Affairs, Government of Pakistan The Annual Development Programme Fund is divided accordingly among various sectors like water supply, sanitation, health, schools, roads, electricity etc Of the total fund, 55 percent is divided between members of Union Councils, 20 percent between members of District Councils and 25 percent is utilised in projects recommended by members of the Advisory Council of the AJK Legislative Assembly

The supplementary funds generated at the District Council level are also utilised for rural development projects But at the village level, Union Councils are fairly restricted in generating additional resources. Consequently in a year each Union Council member has an equivalent of approximately Rs. 10,000 (FY 1992-93) from the ADP to apply for village development This is only adequate to meet partial costs of any development scheme There are a number of instances where additional resources for a scheme have been generated by the pooling of funds by members of Union Councils or other elected representatives This helps in the completion of a scheme within one financial year. Evidently, two factors facilitate pooling of resources, one is the political affiliation of the elected representatives and the second is the residency or family ties of the elected representatives with the target community

If funds are inadequate the scheme may be completed over a period of five years or may even be abandoned, depending on whether the member of a union or District Council pursues it in subsequent years Government policy recommends that an on-going scheme,

started in one financial year, is to be given priority in terms of allocation of resources in subsequent financial years, to ensure its completion. This, however, is not binding especially if a new member is elected. He may complete an existing scheme or divert the resources to another scheme which he considers to be a priority.

Some members of Union Councils and Project Leaders have been successful in mobilising community funds on a project by project basis. Success of mobilisation of community resources, however, depends upon the credibility of the member in the community, the nature, extent and urgency of the need, as well as the economic level of the community. Mostly communities are able to contribute only part of the costs of any scheme. In the case of water supply schemes, the community is required to pay for the following: land, subsidized labour, cost of material and construction of storage tank and transportation of material. The Government only provides funds for the material cost of the pipes and the pumping system. All operations and maintenance costs are borne by the community. In Mirpur District a number of development projects have been implemented through matching grant schemes in which the communities have matched government contributions by upto 50 per cent.

## Background on Water Systems

---

The following chapter will synthesise the existing water situation in the three areas covered and will identify differences in availability and use of alternate water sources. Furthermore, this chapter will also illustrate disparities in resource mobilisation and management options in the three areas.

Data used in this Chapter and the following Chapters is from the female and male Model, ie, a total of 130 recorded cases. Since the area of Mirpur is special in the sense that it has characteristics of both AJK and Northern Punjab, it has been taken out of the main AJK area, to understand underlying differences and similarities. This point of analysis will be consistently adhered to through out this report. Supporting tables to the analysis in this Chapter can be found in Appendix One, ie, APP1 Table 1 0 to APP1 Table 1 10.

### 2.1 EXISTING (ALTERNATIVE) SOURCES OF WATER

APP1 Table 1.0 highlights the differences in the types of water sources available to the community. In Northern Punjab the most common form of alternate water sources were open wells, followed by household handpumps and stream sources, ie the frequency percentages of 77%, 35% and 22%. In AJK, there is greater reliance on spring sources, that is, 90% of total reported cases. Mirpur is similar to Northern Punjab in terms of a greater relative incidence of wells (68% of total reported cases). In AJK, “multiple sourcing” of alternatives is not available and most communities are relying on only springs, while in the case of Northern Punjab alternatives may include wells and rivers (ie ground water and surface water sources).

#### 2.1.1 Equity of Access

Equity of access to different sources is an important determinant of resource allocation at the community level and reflects existing configurations of social influence eg, control of influential groups over existing community resources etc.

From Table 2.0 it can be seen that where wells are reported, in Northern Punjab between 75%-100% of the households are relying on them<sup>1</sup>. Similarly, the access in Northern Punjab to surface water sources is relatively high, ie spring sources and streams, where reported cases are accessed by 75-100% of the total households. Interestingly enough, where community handpumps exist only a few, ie less than 34% of household have access to community handpumps, (the order has been reversed in the case of AJK and Mirpur).

---

<sup>1</sup> All=100% of the households, Majority= Upto 75% and Few= Less than 30%

Since springs are the most common form of alternate sources in AJK, in 71% of the reported cases in this category, 75-100% of the households had access to springs. The same is true with other surface water sources like streams and rivers. In Mirpur, where wells were available, upto 100% of the households had access to the source, ie, 86% of the reported cases. From the above findings, it appears that access to source is equitable across the three areas, with very little variation, with one exception, ie, the case of community handpumps

Type of Source	Northern Punjab			AJK			Mirpur		
	All	Maj	Few	All	Maj	Few	All	Maj	Few
Well	41%	42%	17%	50%	0	50%	86%	7%	7%
Handpump w/in house	0	5%	95%	0	0	0	0	0	100
Community Handpump	17%	17%	66%	100	0	0	50%	50%	0
Pond	0	50%	50%	100	0	0	0	0	0
Spring	66%	11%	33%	58%	13%	29%	0	0	100
Stream/River	21%	36%	43%	70%	0	13%	0	0	0
Others (Dam)	0	50%	50%	0	0	0	100	0	0

Table 2.0: Access by Source

### 2.1.2 Pattern of Use

The pattern of use by source will illustrate the relative dependency of the communities on alternative sources. APP1 Table 1.1 illustrates that seasonal patterns of use are not common in the case of any of the sources listed in Northern Punjab. Where wells have been reported they are either being used all year round, ie 48% of total cases or as a back up to the piped water system ie, 52% of the cases. Where on-site handpumps are available they are being used all year round, presumably as the main source of household water supply in 74% of the cases and as an “emergency” source to piped water in the 26% of the reported cases.

By looking at APP1 Table 1 2, it can be determined that patterns of use are more seasonal in the case of AJK than in Northern Punjab. Where springs are reported, 37% are being used all year round, while 33% are utilised during the summer or the winter and only 30% are used as back up to the piped system. The seasonality of use is related to the relative scarcity of water during the summer months. Similar conclusions can be drawn by looking at the pattern of use in the case of other sources.

APP1 Table 1.3 illustrates that in a large number of cases in Mirpur, most alternative sources are being used as back up systems to the existing piped water system, ie, 76% of the total reported cases in the case of wells, 100% in terms of community handpumps and 100% in terms of dam water etc. The above findings highlight that there is greater seasonal reliance on alternative sources in AJK, in comparison with the other two areas.

## 2.2 SIZE OF SCHEMES, COVERAGE AND SERVICE LEVELS

### 2.2.1 Size of Schemes

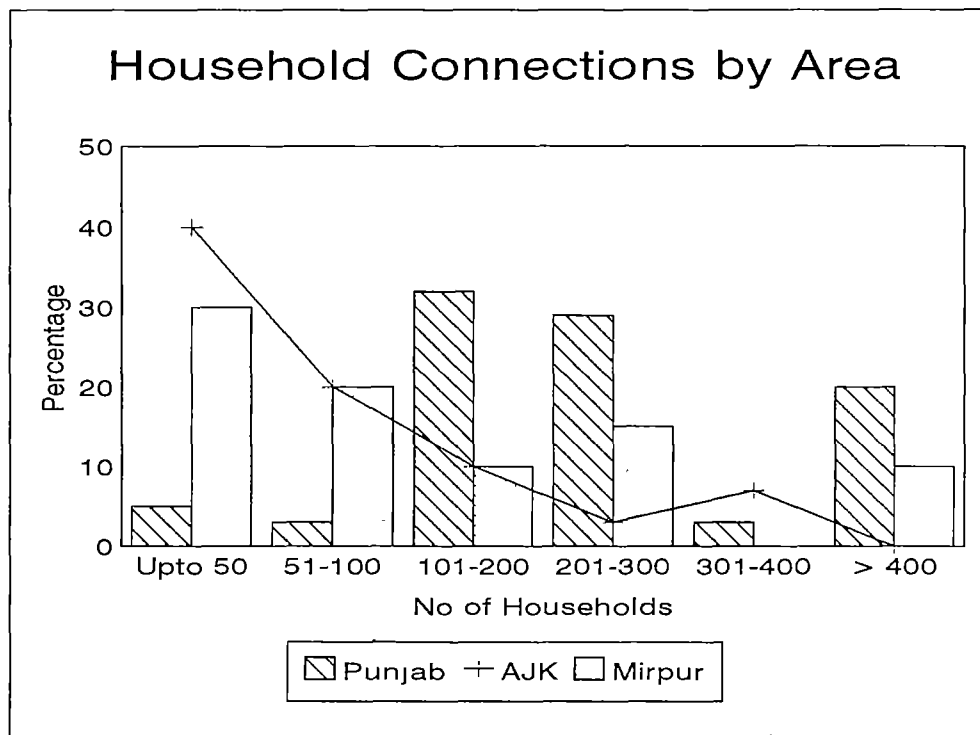


Figure 2.0: Household Connections by Area

The trend of the distribution is skewed towards the larger schemes in Northern Punjab and 82% of the cases reported had more than 100 connections (See APP1 Table 1.4 and Figure 2.0). Village sizes are generally larger in Northern Punjab, hence the relatively greater concentration on larger schemes. To the contrary in AJK, only 20% of the cases reported had more than 100 connections. Settlements in AJK tend to be dispersed and this has direct implication for selection of villages and consequently for coverage levels. For Mirpur the figure was 35%. The distribution for Mirpur is similar to AJK, with one major difference, 10% of the cases reported had more than 500 connections, which brings it closer to Northern Punjab case. This seems probable for in terms of terrain and settlement patterns, Mirpur has elements from Northern Punjab as well as from the rest of AJK. In terms of awareness and knowledge regarding scheme sizes, the incidence of unknown cases is least in Mirpur, implying that people are relatively better informed in Mirpur as compared to the other areas surveyed.



### 2.2.2 Service Levels

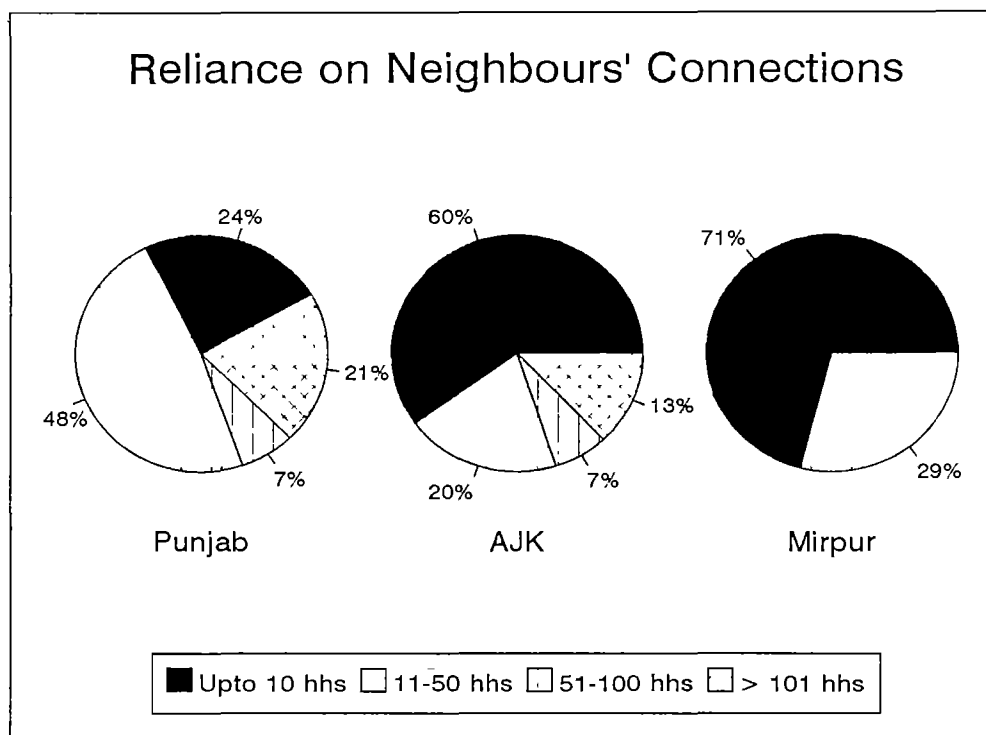
	Northern Punjab	AJK	Mirpur
Upto 5	33%	94%	25%
6-10	34%	6%	75%
11+	33%	0	0

**Table 2.1: Standposts by Area**

The larger number of standposts per community in Northern Punjab, is once again a reflection of the relatively larger sized villages and of the fact that service levels are determined by strict engineering design criteria with respect to water demand, water quality, design period, operating hours etc (See Table 2.1). More cases were however reported in AJK, that is 50% of the total reported cases of standpost occurrence, and may reflect the phased nature of water development in AJK. A number of schemes have standposts and are usually upgraded by the community with some assistance from LGRDD over the years. Only 13 percent of the total cases were in Mirpur and may be due to higher income levels and the demonstration demand impact compounded by remittances and exposure to other cultures

### 2.2.3 Informal Coverage

Mechanisms of informal coverage include reliance on neighbours' connections, however, this can be symptomatic of larger issues like distribution problems, equity of distribution and



**Figure 2.1: Reliance on Neighbours' Connections**

access etc, design and technology choice etc. Reliance on neighbours' connections was reported in 47% of the total cases in Northern Punjab, 50% of the cases in AJK and 35% of the cases in Mirpur. Relative reliance on neighbours' connections in the street cluster is greater in Northern Punjab, that is 21% of the cases reported for Northern Punjab are in the 101-1500 bracket as opposed to 13% in AJK (See Figure 2.1)

The one obvious factor is the relative population sizes in the two areas. Coverage levels differ and relatively larger segments of the village may not have direct connections in Northern Punjab. Reliance on neighbours' connections might also have resulted from households not obtaining connections initially because of having their own dug wells. However, when these wells dry up, households may revert to getting water from their neighbours, this issue is exacerbated by the fact that no one is paying for O&M in PHED assisted schemes (See Chapter Three). Another problem could be the issue of unequal water distribution resulting from improper valve management or incorrect pipe sizes<sup>2</sup>. Since water is usually available for a fixed period, water distribution if improperly monitored can lead to inequity in terms of availability. Within Northern Punjab scenario, valves combined with proper management, are therefore crucial for ensuring correct water distribution.

Reliance on neighbour's connection is quite low in Mirpur and may reflect proper water management and equitable coverage levels. Equity of water distribution also depends on who has household connections within the community, in most cases, peripheral or marginal settlements did not have access to piped systems in Northern Punjab. The dispersed nature of settlements in AJK however ensures that the scheme benefits only those households that are naturally within the village boundaries.

## **2.3 TOTAL PROJECT COST AND SOURCE OF FUNDING<sup>3</sup>**

### **2.3.1 Total Project Cost**

In terms of project cost, the overall cost of schemes is higher in Northern Punjab, with 60% of total schemes costing more than Rs 900,000 (See APP1 Table 1.6). In 12% of the cases reported, the total cost of the scheme was reported to be more than Rs 2,000,000, no such cases were reported in either AJK or Mirpur. The opposite is true in AJK, with 75% of schemes costing less than Rs 300,000. Again Mirpur is the median case with both large and small size schemes.

Per capita average cost of the scheme for Northern Punjab was Rs 1014, for AJK Rs 633 and for Mirpur Rs 339. In other words, the cost of comparable schemes in Northern Punjab is almost 3 times that of schemes in Mirpur. The relatively higher average cost for AJK can be attributed to smaller scheme sizes.

---

<sup>2</sup> PHED schemes are designed to supply 10 gallons per capita over a period of 24 hours.

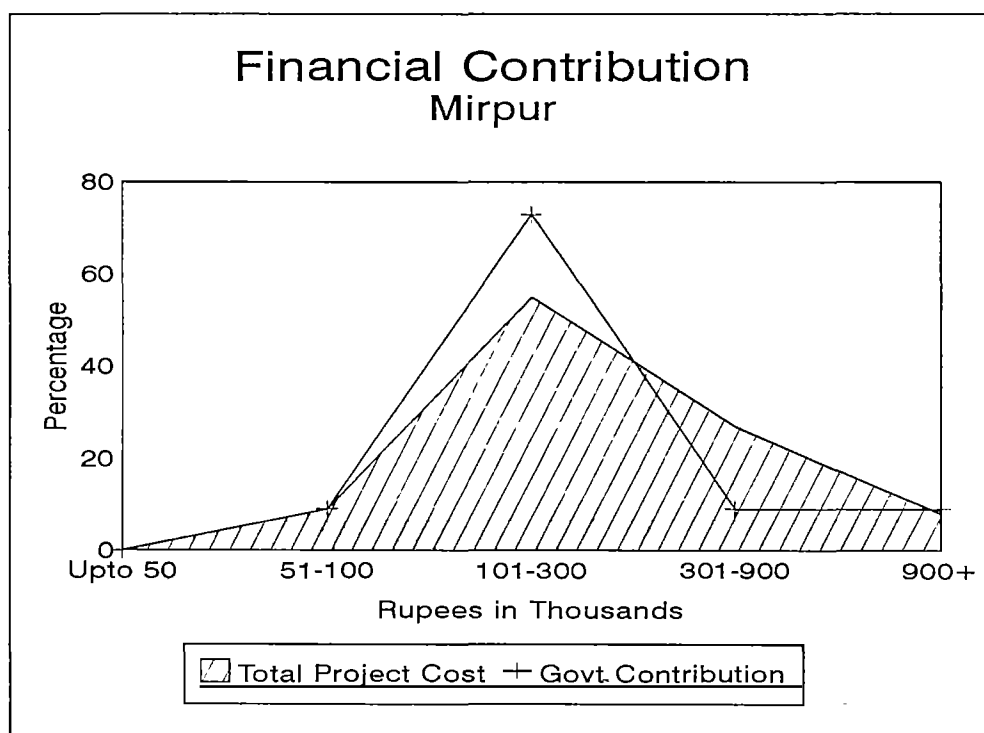
<sup>3</sup> The following figures were taken from agency records.

### 2.3.2 Government Contribution

Total Government Contribution	Northern Punjab	AJK	Mirpur
Upto 50000	0	25%	0
50000-100000	0	19%	9%
100000-300000	0	31%	73%
300000-900000	39%	25%	9%
900000-2000000	48%	0	9%
2000000+	13%	0	0

**Table 2.2: Total Government Contribution by Area**

The distribution of government contribution between the three areas reflects the overall findings of APP1 Table 1 6, especially in the case of Northern Punjab. In the case of AJK, it appears that government contribution is relatively higher in the case of the medium sized schemes, ie those costing upto to Rs 300,000, 31% of total cases as reported in Table 2.2. Similarly, there is a higher concentration of government contribution in the medium sized schemes, ie, 73% in the case of Mirpur; in other words the larger sized schemes may have a higher community contribution (See Figure 2.2).



**Figure 2.2: Financial Contribution (Mirpur)**

### 2.3.3 Community Financial Contribution

There are strong discrepancies between the three areas in terms of officially reported community contribution (See APP1 Table 1.7). There were no cases at all reported of community contribution in the case of Northern Punjab, while some community contribution was reported in all cases in AJK and Mirpur.

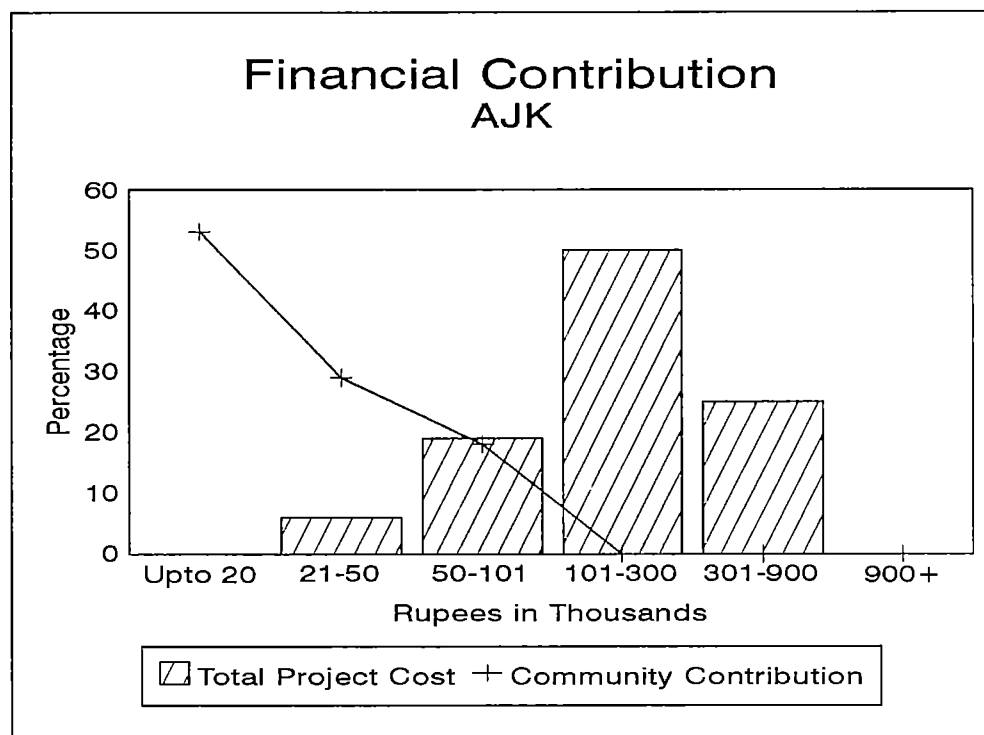


Figure 2.3: Financial Contribution (AJK)

The relative sizes of community contribution varied and support the findings of Table 2.2. 53% of the total reported cases in AJK had contributed upto Rs 20,000 towards the water supply system, while the remaining majority (29%) were in the 20,000-50,000 bracket and only 18% of the cases fell in the 50,000+ bracket. The opposite was true in Mirpur with 60% of the cash contribution by the community coming under the 50,000-200,000 bracket. The above findings imply that as the total cost of the scheme increases community contribution decreases in the case of AJK (See Figure 2.3 and the opposite may be true for Mirpur).

### 2.4 O&M COSTS OF SCHEMES

Subsumed within the annual maintenance costs is the difference in technologies, since a majority of systems in AJK are gravity flow, the annual maintenance costs are lower than in the other areas, with 50% of the cases having an annual maintenance cost of upto Rs 2000 (See APP1 Table 1.8). Annual maintenance cost in Northern Punjab is extremely high, with 79% of the cases having annual maintenance costs of more than Rs 70,000. In other words, even where technologies are similar, as in the case of Mirpur and Northern Punjab, annual maintenance costs are radically different, with 82% of the reported cases within Mirpur having an annual maintenance cost between Rs 15000- 35000.

This difference may have arisen because in Mirpur all systems were being managed by the communities, ie, an issue of cost internalisation, while in the case of Northern Punjab most schemes were being managed by PHED or the Union Council or a combination of the two. Furthermore, the annual budget of the PHED includes a section of recurrent costs of existing schemes; there may be a degree of “over-reporting” in the above figures as a result of this practice

Total Operational cost/year	Northern Punjab	AJK	Mirpur
Upto 50000	6%	100%	100%
50000-100000	18%	0	0
100000-200000	59%	0	0
200000+	17%	0	0

**Table 2.3: Annual Operational Cost by Area**

The difference between the three areas is even more pronounced in terms of operational costs, with 100% of the schemes in AJK and Mirpur falling within the Rs 50000 annual operational cost category. From Table 2.3 it can be concluded that the schemes in Northern Punjab cost more to operate than similar schemes in Mirpur. Again this discrepancy may have resulted due to differences in management options combined with differences in the number of employees per scheme etc and can have an impact on affordability and cost internalisation, once schemes are transferred to the communities.

In terms of per capita<sup>4</sup> annual O&M costs, there is a marked discrepancy between the three areas: Northern Punjab per capita cost of O&M was Rs 175 annually, for Mirpur it was Rs 64 annually, while for AJK it was Rs 34 annually. In other words, per capita O&M for comparable schemes in Northern Punjab was almost 3 times higher than that of Mirpur. The question arises, will communities be able to pay such high costs of operations, can these be minimised or will they revert to their traditional sources?

## 2.5 FUNCTIONING OF SYSTEMS AND EXISTING MANAGEMENT SCENARIOS

% of Schemes	Northern Punjab	AJK	Mirpur
Functioning	74%	100%	100%
Non-Functioning	26%	0	0

**Table 2.4: Status of Functioning**

As can be seen by Table 2.4 completely non-functioning schemes were only reported in Northern Punjab, with 26% in this category. The reasons of non-functioning can be classified into three main types: issue of management and clarity of responsibility, this was a com-

<sup>4</sup> Per capita costs were calculated by the following formula: (Total Annual O&M Cost) / (Total Household Connections) \* (Average No of members per household)

mon reason quoted for the demise of schemes especially after they had been handed over to the Union Councils, this also includes issues like lack of planned and timely maintenance, poor quality of repair etc, the second was related to asset management and collection of bills, which exacerbated the lack of funds for the running of the system, combined with high costs of maintenance and operation. After schemes are transferred to the Union Council, an arbitrary sum to stem the initial few months of running expenditure, is provided. Once this money runs out ad-hoc measures are taken to run the system, including accessing money allocated through the Union Council system, subsidisation by local councillors etc

The third major cause for failure can be attributed to sharing of water rights between villages and the lack of cooperation of the community. The area of Northern Punjab, as already mentioned, is a water scarce area with a very deep water table; in the recent past, mini dams have been constructed to meet the irrigation requirement of the area and these dams have the dual purpose of being used as sources of drinking water (through the construction of seepage wells). The issue of sharing water, sometimes between 4-5 villages has generated a number of conflict situations, which the existing structures of UCs have been unable to resolve.

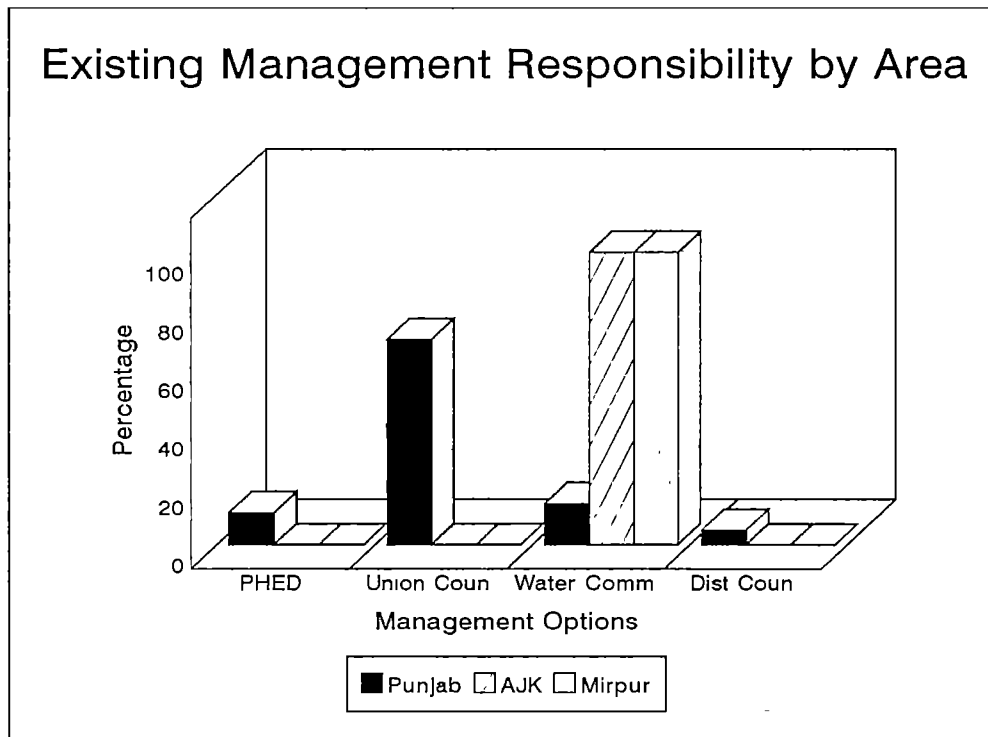
No of Months	Northern Punjab by Non Functioning Schemes (26% of total schemes)
Upto 6 Months	24%
7-24 months	6%
25-48 months	4%
> 48 months	66%

**Table 2.5: Period Schemes Functioned**

The period of scheme functioning varies, with 24% of the schemes failing in the first six months of operation (See Table 2.5). The majority of schemes fail after their first two years of operation, ie, after they are handed over to the Union Council. To understand the unresolved issues of management that hinder the functioning of the water supply schemes, the different management scenarios will need to be evaluated.

The net of management options is wider in Northern Punjab (See Figure 2.4), however, contrary to current notions, only 11% of the schemes were being directly managed by the PHED, while 70% were under the Union Council. Direct management by Water Committees existed in only 14% of the cases. In AJK and Mirpur, management scenarios were stationary to the extent that all schemes were being managed by Water Committees. The quality and dynamism of management of the Water Committees, will be the subject of the following chapters.

The following issues were listed as the main management problems under the different scenarios



**Figure 2.4: Existing Management Responsibility by Area**

For schemes being maintained by the PHED, the communities were generally of the opinion that the onus of responsibility was that of the agency, so if problems arose they were not informed. Issues became visible only after the schemes were handed over to the UCs, these included lack of funds, lack of commitment of councillors, no community involvement in the running of the scheme and nepotism in terms of hiring and firing of scheme employees. Since one Union Council covers 5-6 villages, influence peddling amongst the councillors, also has a genuine impact on the management of the water systems. One of the issues listed as a major hindrance for proper community management was the lack of ability of the community to influence existing power structures both at the level of the village and the agency level.

## 2.6 TRAINING & HRD

The need for providing timely, effective and relevant training is important for ensuring the long term success of any water supply project. The type of training provided will have a direct impact on project specific outcomes. The spectrum of training in all three areas is extremely limited and adhoc (See APP1 Table 1.10). In fact formal training was provided in only 20% of the cases in Northern Punjab, 25% in AJK and 30% in Mirpur. In Northern Punjab the most common form of training was that of valve repair and valve management, while in AJK the most common type of training was repairing pipe joints. For Mirpur, common areas of training inputs included operation of motor and pump and valve repair. Management and accounting inputs in training were non-existent and can have a direct impact on the management capacity of community based organisations. Similarly the quality and the type of training in terms of maintenance will have a direct impact on repair, breakdowns etc

## **2.7 CONCLUSIONS:**

- 2.7.1** “Multisourcing” of alternatives is not available in AJK or Mirpur. In Northern Punjab, at least two types of alternatives were reported in most cases, ie, wells or handpumps in the house.
- 2.7.2** Where alternatives are available, the access of households is quite equitable in all three areas, with the exception of community handpumps in Northern Punjab.
- 2.7.3** In AJK, as compared to Mirpur and Northern Punjab, there is more seasonal dependency on alternatives
- 2.7.4** The trend of distribution, with respect to coverage levels is skewed towards larger schemes in Northern Punjab, this difference can be attributed to larger population sizes. However, there is greater reliance on neighbour’s connections in Northern Punjab, implying inequities in the distribution system.
- 2.7.5** Overall cost of schemes is greater in Northern Punjab Furthermore, in most cases in AJK and Mirpur, some form of community contribution was recorded.
- 2.7.6** High operational and maintenance costs were reported for Northern Punjab as opposed to Mirpur and AJK, putting into question the affordability of running the schemes
- 2.7.7** A higher number of “non-functioning” schemes were reported in Northern Punjab. The majority of schemes were seen to fail after the first two years of operation, ie, after they were handed to the Union Councils (with no prior involvement).
- 2.7.8** The focus on formal training is limited in all three areas and relates to “technical” inputs only.



## Description of the Project cycle<sup>5</sup>

---

Broadly defined, the project cycle falls under the following main phases:

- Initiation/Needs Identification phase
- Planning & Design phase
- Implementation & Construction phase
- Operation & Maintenance
- Monitoring and Evaluation
- Expansion

Under each of these broad categories, a number of essential categories can be clustered, which are in turn sequential or concurrent in their ordering. Similarly, some activities may be long-term and may be difficult to fragment chronologically. However, to clarify roles and responsibilities, it is important to understand the range and variety of sub-project activities under each phase (Please refer to Appendix 3 for a detailed framework of analysis for this Chapter) This Chapter will review the flow of decisions that fall under each phase and determine the implications for project design, planning and mechanisms for involving communities. Supporting Tables to this Chapter can be found in Appendix 1, ie, APP1 Table 1.11 to APP1 Table 1.32.

### **3.1 A STEP WISE APPROACH TO CHANGES IN THE VILLAGE WATER SUPPLY SYSTEM**

#### **3.1.1 The Initiation Process**

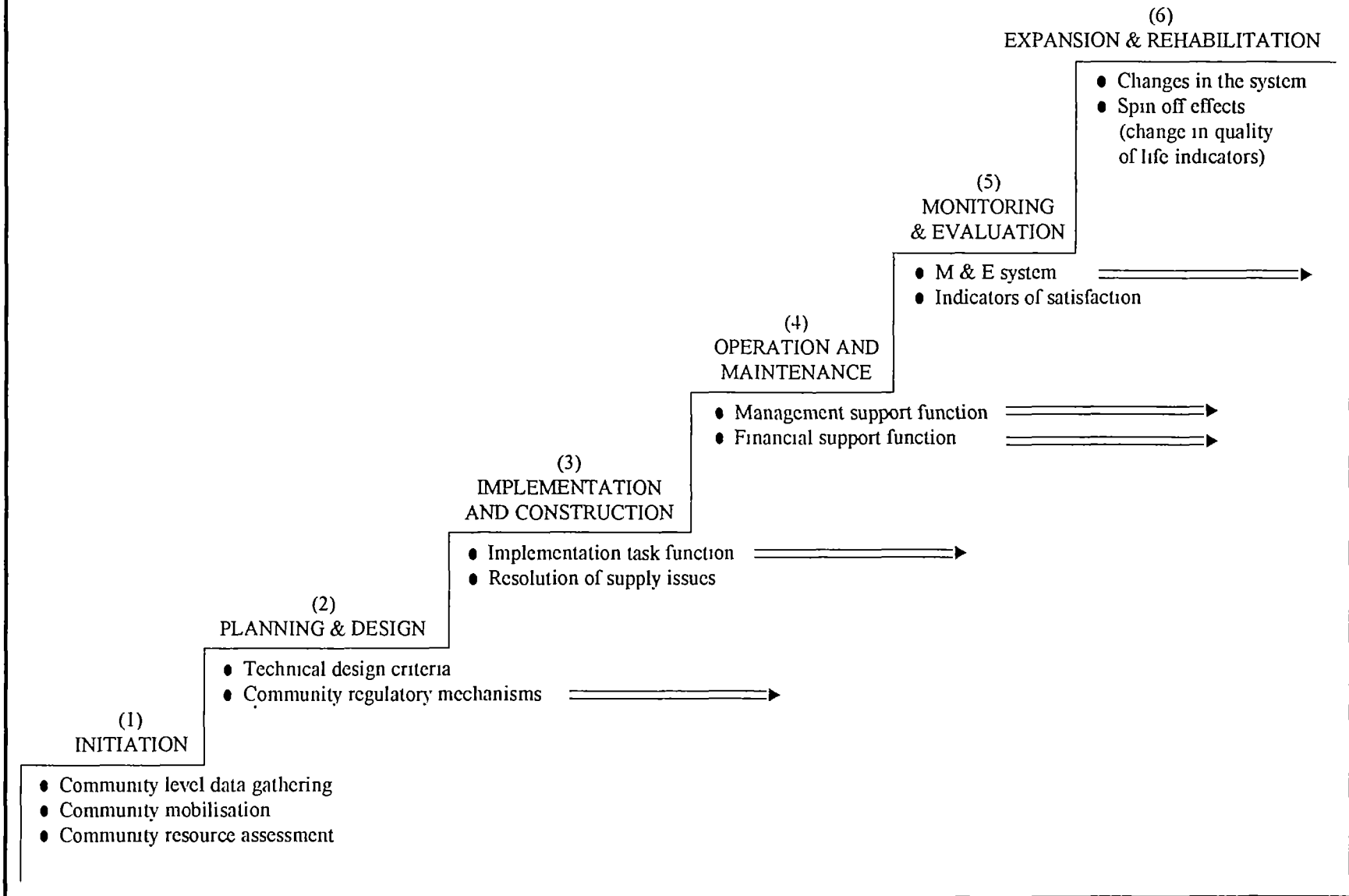
From Table 3 0 it can be seen that most schemes in Northern Punjab are approved within one to two years after the application is submitted to the authority in question, ie, 80% were reported to have been approved within this time period. The process of approval in AJK and Mirpur has a much longer lag period, 36% and 42% of the cases may take longer than 4 years to approve, as compared to only 16% in Northern Punjab.

A substantial number of schemes in Northern Punjab have been approved by the direct involvement of elected representatives at the MNA/MPA level (as will be seen later) as a

---

<sup>5</sup> The above categories have been derived from an intensive overview of actual projects, with some minor variations and additions. However, the above are the “ideal” stages and different projects may fall under different levels of intensity at each stage. The other issue that is subsumed in here is the “actual” roles and responsibilities of various actors within these phases, ie, who does what?

## STEP-WISE APPROACH TO A WATER SUPPLY PROJECT



way of influence peddling or gaining of votes and the possibility of circumventing official procedures is quite often exercised. In the case of AJK and Mirpur, the direct involvement of higher level elected representatives and the weightage of their informal relationships is less visible, and may therefore have relatively less impact on “speeding” up of the approval process

No of Years	Northern Punjab	AJK	Mirpur
1	63%	9%	37%
2	17%	36%	14%
3	4%	19%	7%
4+	16%	36%	42%

**Table 3.0: Length of the Approval process by Area**

Procedures between the two areas are also radically different, with a much more interactive community focussed approach being followed in AJK/Mirpur. Terms and conditions, the total funding and agency procedures are in most cases discussed with the community, as opposed to Northern Punjab where one sided information flows are common. This may be pronouncing the approval period differences. In other words, the “direct” involvement of community at this stage implies a more time consuming process of initiation.

Number per scheme	Northern Punjab	AJK	Mirpur
1	70%	93%	80%
2	25%	7%	13%
3	5%	0%	7%
Cases reported as % of Total Cases	77%	64%	68%

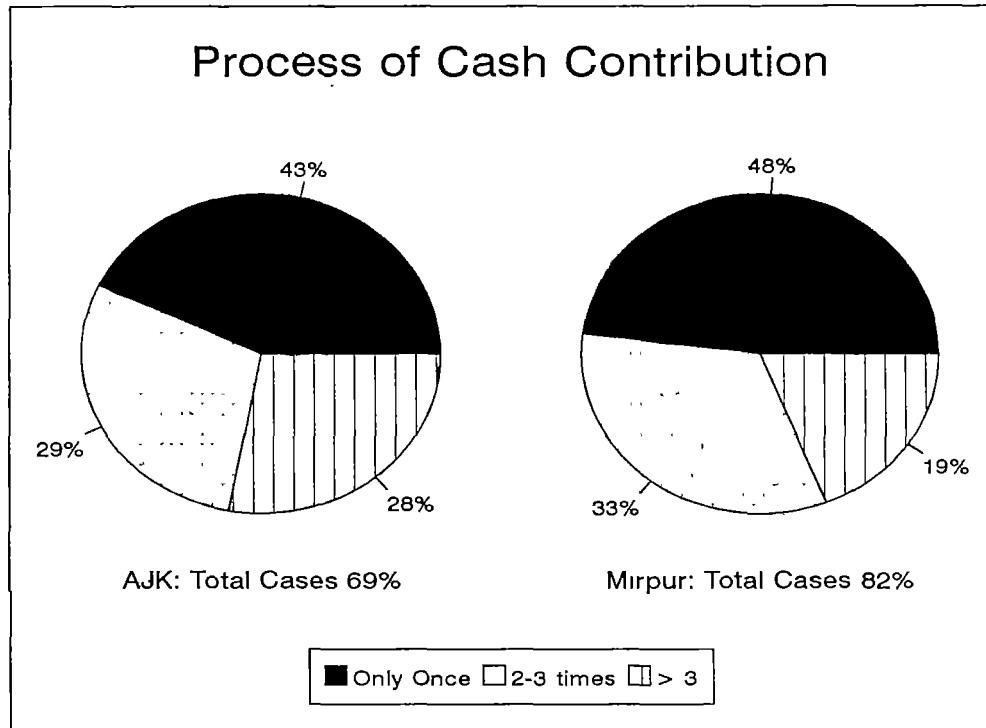
**Table 3.1: Number of Elected Representatives/Scheme by Area**

In the case of Northern Punjab, 77% of the total cases had at least one elected representative involved at the initiation/approval stage (See Table 3.1) For AJK it was 64% and for Mirpur it was 68% of the total reported cases. As has been mentioned, the role of the higher level elected representative is crucial in the reduction of the approval lag period. In terms of number of elected representatives as initiators, the majority of schemes in all three areas have one initiator, ie, 70% for Northern Punjab, 93% for AJK and 80% for Mirpur. 30% of the cases had more than 2 initiators in Northern Punjab and 20% were in this category in Mirpur.

### 3.1.2 Process of Per Household Contribution

As can be seen in APP1 Table 1.11, the incidence of direct contribution by the community is extremely low in Northern Punjab, ie, in only 8% of the cases was some form of con-

tribution noted Where contribution was made, it ranged from Rs 30-Rs 500 per household on average In the case of AJK, 69% of cases were reported to have made direct monetary contribution. In terms of per household contribution, 69% of the households contributed upto Rs 500 and below. Only 10% cases were reported to have contributed more than Rs1000/household. The distribution for Mirpur is quite different from the rest of the two areas (82% of incidence reported), with 55% of the cases reported falling within the Rs101-500 range However, 17% of the cases fell in the >Rs1000 range. Overall, as noted in APP1 Table 1.7, the total community contribution in Mirpur has been the highest out of all three areas.



**Figure 3.0: Process of Cash Contribution**

The process of cash contribution is influenced by a number of factors, especially the cashflow decisions at the household level. Once the total amount the community is to contribute has been determined, a number of mechanisms can be used, ie, household contributions can be fixed or variable (a function of each household’s financial capacity), money can be collected once/“upfront” or can be collected over the life of the project, ie more than once, households that cannot afford financial contribution may decide to provide free labour. A combination of all three was found in the three areas, however with very few cases reported in Northern Punjab (See Figure 3.0 and APP1 Table 1 12)

In terms of financial contribution, upfront mechanisms were fairly common with 43% in AJK and 48% in Mirpur (See Table 3.3) However, the norm is to spread the per household contributions over a period of time that is, in money was collected more than 2 times in 57% of the cases in AJK and 52% of the cases in Mirpur. In the future processes that are designed to enhance the cash contribution of the community should take the flow of money considerations into account

Reliance on free labour is lower in Mirpur as compared to AJK and may account for the differences in income through enhanced remittances, ie, a higher ability of households to make cash contributions and non-availability of males for providing free labour.

Accountability and transparency of cash contributions is another very crucial issue, which can also have an impact on project specific outcomes. The maintenance of correct and visible records is therefore an important function. In 73% of the cases in AJK and 71% of the cases in Mirpur, records had been maintained and were readily available (See Table 3.2).

Records Maintained?	Northern Punjab	AJK	Mirpur
Yes	60%	73%	71%
No	40%	27%	29%

**Table 3.2: Were records Maintained?**

### 3.1.3 Implementation and Construction

#### 3.1.3.1 Selection of Contractor

The selection of the contractor can be important for the implementation task function and for defining roles and responsibilities. It can be surmised that where the community is more involved in the selection of the contractor, the accountability of the contractor is higher both in terms of construction lag periods, quality of construction and costing of schemes.

The practice of tendering is common in Northern Punjab with 88% of the contractors being selected in this manner. For AJK and Mirpur the percentages are 33% and 20% respectively (See Table 3.3). 67% of the reported cases in AJK have some community involvement, either through the village influentials or the Project Committee. For Mirpur, the most common mode of selection is undertaken through the direct involvement of the agency, ie, 60% of the cases. A larger number of cases were reported in Northern Punjab with more than one contractor, absconding contractors were a more common feature of implementation in Northern Punjab, ie, 32% of the cases had more than one contractor. For AJK it was 9% and for Mirpur it was 14%.

Process	Northern Punjab	AJK	Mirpur
Through tender	88%	33%	20%
By Agency Representatives	3%	0	60%
By Village Influentials	9%	33%	0
By Community	0	34%	20%

**Table 3.3: Process of Contractor Selection**

### 3.1.3.2 Length of Construction Period

The lag period in construction was higher in both Mirpur and AJK, ie construction stopped in 54% of the cases in Mirpur and AJK respectively. In Northern Punjab, construction stopped in only 33% of the cases. However, the reasons given for this lag in the case of AJK and Mirpur were lack of community funds, supply of raw materials and under very rare cases was it the contractor's fault. In the case of Northern Punjab, issues related to the contractor like change in contractor, were the major causes of construction delays. Furthermore, the frequency of delays was higher in Northern Punjab, in 50% of the cases construction stopped more than 2 times, in AJK it was 33% and in Mirpur it was 40%.

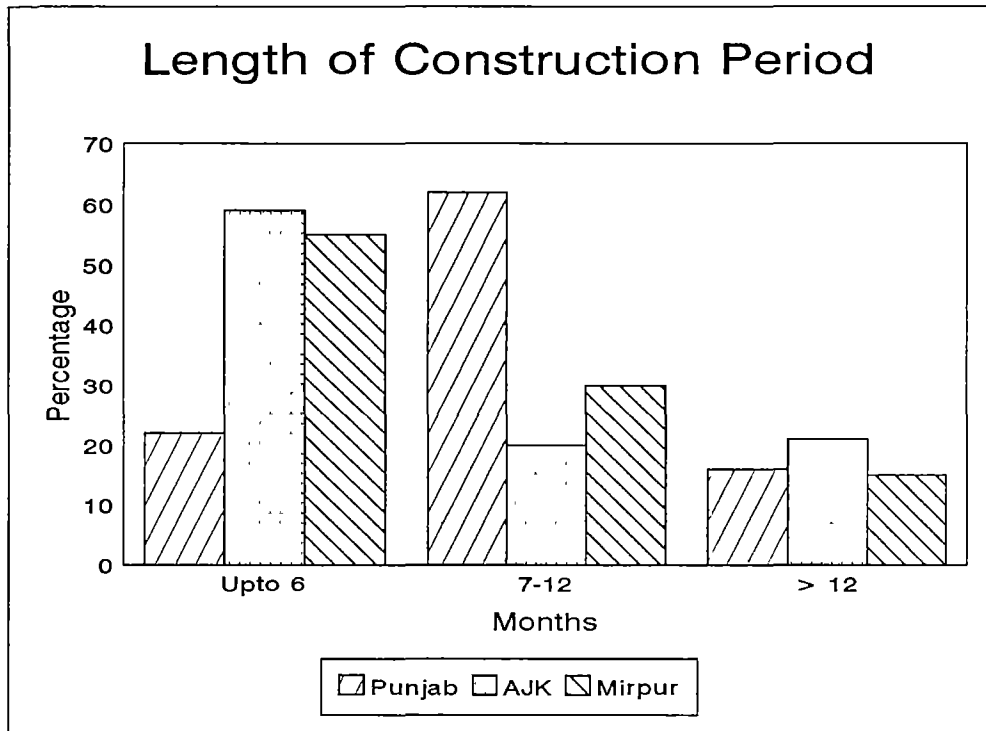


Figure 3.1: Length of Construction Period

In Northern Punjab 78% of the schemes took a year or longer to complete and reflects the high frequency of construction delays<sup>6</sup> (See Figure 3.1 and APP1 Table 1.13). In the case of AJK 59% of the schemes were completed within six months, while 55% of the schemes in Mirpur were within this category. Construction periods were on the whole longer in Northern Punjab than in AJK and Mirpur and may partially be attributed to relative scheme sizes APP1 Table 1.13 however, does not reflect adequately the phased nature of construction in Northern Punjab, ie, the equity issue of who gets piped water first in the village. In all three areas, the levels of satisfaction after completion were fairly high, ie, 93% in Northern Punjab, 92% in AJK and 100% in Mirpur.

### 3.1.4 Operation and Maintenance

Planned maintenance was not a common feature of any of the three areas in only 5% of the reported cases in AJK and 9% of the reported cases in Mirpur was there any type of

<sup>6</sup> The size of schemes could also be a possible qualifying factor for the length of the construction period

concession for planned maintenance. Planned maintenance included regular cleaning of source and storage tank, regular cleaning of well, chlorination, valve repairs etc. Timeliness of maintenance was therefore not being undertaken in any of the three areas and could therefore have an impact on repair costs.

### 3.1.4.1 Incidence of Common Faults

Figure 3.2 highlights the most common faults found in the three areas, ie faults in the mainline, in the distribution network and in the pumping system. In AJK, the most common fault that occurred was in terms of mainline failure and included mainline breakage and blockage (See APP1 Tables 14 -18). At least 45% of the cases in AJK had some mainline problems, of which breakage was the more common form, ie 78% of total cases. In most instances in AJK the mainline is not buried underground but exposed. Communities reported

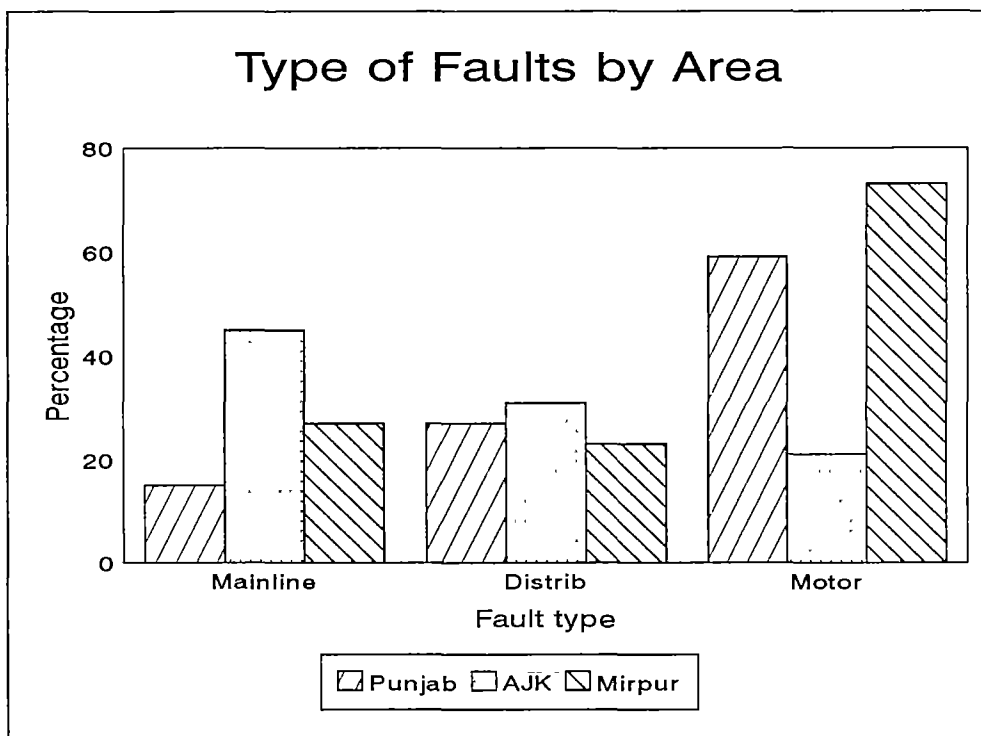


Figure 3.2: Type of Faults by Area

that usually livestock damages the exposed sections of the mainline. Blockage could be occurring due to the fact that debris and sediment may get into the pipes, especially during the rainy season. Other faults occurring in AJK included distribution pipe breakage (31% of total cases) and leaking joints (36% of total cases).

Three types of distinct faults were occurring in Northern Punjab, ie, breakage of valves with a frequency of 21%, distribution pipe failures 27% and motor failures 59%. Valve breakage can be attributed to a number of factors. It could signify lack of community cooperation in terms of water distribution, vandalism of valves, unreliability of supply which can

manifest itself through disputes over water. To the contrary no cases were reported in Mirpur, which may reflect the fact that communities are more receptive to managing the distribution of water.

The most common fault occurring in Mirpur was that of motor failure, ie 73% of the cases. However, information regarding specific faults in the motor was consistently not available at the community level. Overall, there appear to be less distribution system problems in Mirpur, that is, only 23% incidence. This can be due to better installation and proper maintenance of the distribution network.

#### **3.1.4.2 Frequency of Occurrence**

Faults in the mainline are a monthly occurrence in AJK, that is a frequency of 44% and can be attributed to the fact that pipes are not buried in AJK and that there are potential landslide problems (See APP1 Tables 19-26). Similarly, the seasonality trend is also higher for AJK, 45% as opposed to 31% and 17% for Northern Punjab and Mirpur. In other words, for Mirpur and Northern Punjab mainline faults are an annual problem.

Most cases of valve breakage are yearly in Northern Punjab, that is 54% (See Table 3 18). There is also a seasonal incidence, which may indicate that water disputes are more likely during the time when water is scarce. There is no clear pattern occurring for AJK.

The frequency of pipe breakage is greater in AJK, that is, it is a weekly phenomena and has a total reported cases of 32% (See Table 3 21). Compared to the AJK, the pattern of pipe breakage is a monthly or a seasonal problem in Northern Punjab that is 76% of the total reported cases are in this category. Underlying these differences, may be a number of factors, the soil instability problems in AJK may have exaggerated the incidence of pipe breakage. Pipe lines are normally exposed in AJK and this may increase the chances of pipe breakage.

Frequency of motor failure can be a measure of the quality and timeliness of maintenance in the three areas. Most cases in Mirpur are occurring yearly, ie, 49% as compared to 18% in Northern Punjab (See Table 3 25). Similarly 38% of the motor faults in Northern Punjab are weekly or monthly, with respect to 20% in Mirpur. It may be inferred that maintenance in Mirpur is both timely and superior.

#### **3.1.4.3 Overall Repair Time**

Breakage of the mainline is a complicated issue and involves the actual replacement of the damaged pipe with a new section. Logistically speaking, it can be a way of measuring the community's existing institutional and management capacity in terms of sustaining and/or accessing support networks.

In terms of efficiency of repair, it appears that communities in AJK and Mirpur have the capacity to undertake repair of the mainline within a day. This may be a result of the fact that the communities may have kept aside extra pipe for this very purpose or that the type of breakage occurring in AJK and Mirpur does not require replacement of pipes, like joint failures. In Northern Punjab repair work can take anywhere from a day to a month and could reflect differences in maintenance capacity.



Pipe breakage appears to be a minor problem and in terms of time can be fixed between 1-3 days. In terms of relative performance, 62% of total cases in AJK were repaired within a day, while 45% in Northern Punjab and 50% Mirpur were in this category

One valid observation at this stage maybe the quality of repair. Looking at the frequency figures, pipe breakage is a weekly problem in AJK. This may have resulted from the fact that repairs are being conducted informally, like tying plastic bags over the broken/ruptured pipe. So even though repair time may be less, quality of repair may not be upto standard in AJK.

In 70% of the cases in Mirpur and 63% of the cases in AJK repair of motor is undertaken within one week. For Northern Punjab the figure is 46%. Repair time, in this case would also depend on the type of fault occurring, and since data is not available, only inferences can be drawn

The process of repair and where repair is being undertaken is also an important determinant of repair time in the case of repairing a faulty motor. Under a number of instances it was noted that in Northern Punjab, where the fault required higher skilled input, the motor was repaired outside the village. In AJK and Mirpur, it was only under very rare circumstances that the motor was sent to the next district for repair. This practice could be influencing repair time between the three areas and supports the findings of App 4 Tables 1.14 and 1.15.

### **3.1.5 Community Regulatory Framework**

The regulatory framework that exists at the community level is essential for the smooth functioning of the water system. Three sets of specific rules existed, ie, rules regarding water use and distribution, rules regarding disconnection/connections (procedural regulations) and rules regarding maintenance. The most common under the first set were the following restrictions. piped water could not be used for growing vegetables (a common rule in Northern AJK), connection could not be obtained from the mainline, connection could not be obtained from the mohalla level (common) tank, electric motor pumps could not be installed in the house

The procedural regulations included. to obtain a connection households have to pay for the pipes from the street line to the house, an application must be submitted to the Chairman (Water Committee or Union Council) to obtain connection or to disconnect from the system, connection will be withdrawn upon non-payment of bill. Rules regarding maintenance included regular cleaning of tanks, payment of fines if pipes were broken deliberately.

Rules existed in all three areas, ie 56% of total cases reported in Northern Punjab, 75% in AJK and 90% in Mirpur. In the case of Northern Punjab, there was a heavy concentration on procedural rules, while in AJK the first two rule sets existed. Only in Mirpur were the maintenance regulations present

The effectiveness and impact of regulations can be determined by looking at their implementation. In the case of Northern Punjab, even though procedural rules exist they are being implemented in only 1/3 of the total cases reported. The opposite is true for both AJK and Mirpur with a 2/3 implementation level (See Table 3.4). The enforcement of rules and

the issue of conflict resolution, is another very important area for understanding the dynamism of the regulatory framework. In only 21% of the cases in Northern Punjab, 27% of cases in AJK and 6% of the cases in Mirpur, did conflicts arise over rule implementation. The low incidence of conflicts in Mirpur, could be the result of better information sharing in the community, ie, rule transparency. Other reasons could include historical factors, like the displacement of population in the Mirpur area, which encouraged homogeneous groups to re-settle on higher ground and led to community cohesion.

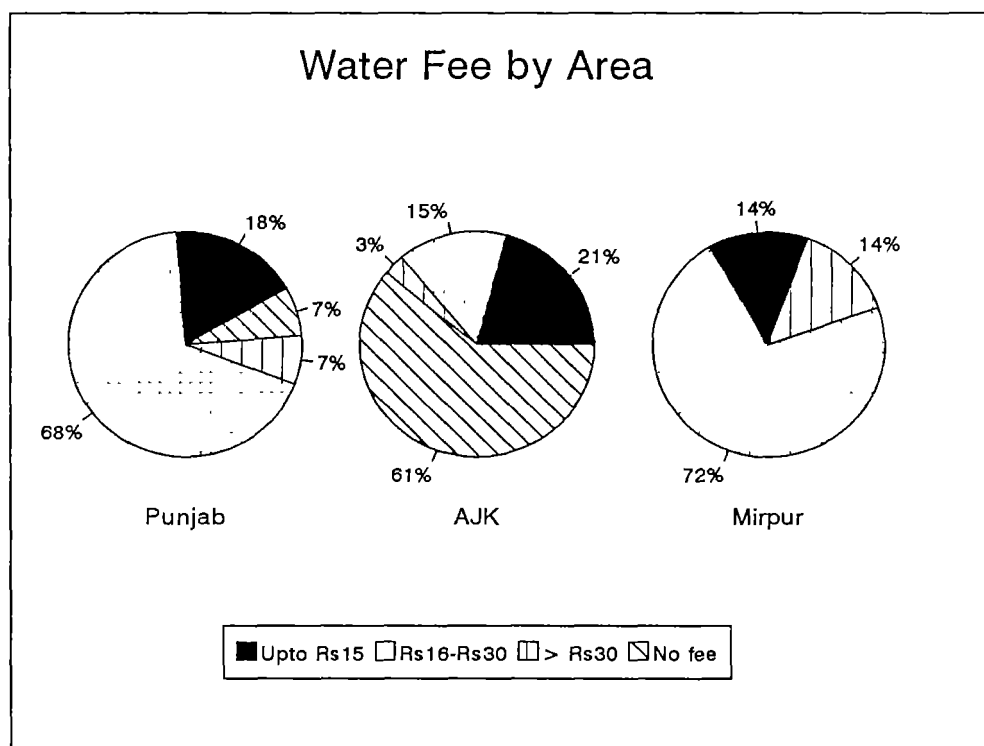
Were Rules Implemented?	Northern Punjab	AJK	Mirpur
Yes	36%	70%	63%
No	64%	30%	37%

**Table 3.4: Implementation of Rules by Area**

### 3.1.6 System of Water Fee Collection

#### 3.1.6.1 Amount of Water Fee

Paying for services, is one of the keys to the financial sustainability of any water supply project APP1 Table 1 27 and Figure 3.3 highlights the distribution of the water fees In most cases in Northern Punjab and Mirpur, the average range for the water fee was between Rs15-Rs30, ie, 68% and 72% respectively. The AJK case is slightly different, since there



**Figure 3.3: Water Fee by Area**

are a large number of gravity flow schemes, 61% of the cases had no regular water fees. In the remaining cases, the average amount of the water fee was upto Rs 15.

In APP1 Table 1.8 and Table 2.3, extremely high operational and maintenance costs were noted for Northern Punjab; one conclusion that may be drawn at this stage is that the actual fee may be inadequate to cover the running expenses of the scheme and it is legitimate to assume that this will impact on service levels, eg, amount of water available, quality of maintenance (as already seen in the previous sections) etc.

Period	Northern Punjab	AJK	Mirpur
Monthly	83%	100%	82%
Quarterly	14%	0	0
Biannually	0	0	9%
Annually	3%	0	9%

**Table 3.5: Process of Water Fee Payment by Area**

The process of water fee payment was quite uniform among the three areas (See Table 3.5). In all three areas the majority of cases were within the category of monthly payments, ie, 83% for Northern Punjab, 100% for AJK and 82% for Mirpur. More payment options are available in Northern Punjab and Mirpur and may be reflecting the flow of remittances from home and abroad.

### 3.1.6.2 Process of Deciding Fee Amount

Process	Northern Punjab	AJK	Mirpur
Open Village wide Meeting	35%	78%	75%
Meeting w/ selected community representatives	25%	0	19%
LGRD/PHED decided	40%	22%	6%

**Table 3.6: Process of Deciding Water Fee by Area**

The process of deciding the water fee will determine how accountable the community is towards paying the water fee and may also have an impact on fee collection. If communities have not been consulted in the selection of the fee amount how willing are they to pay this amount? Three main "process" methods of decision making were noted. The first form, ie, an open village wide meeting is the most representative one with 35% of cases in Northern Punjab reported in this category, 78% in AJK and 75% in Mirpur. The second less egalitarian form is that of holding a meeting with selected community representatives, with 25% in Northern Punjab, none in AJK and 19% in Mirpur. The least representative is the case where the agencies decide the appropriate water fee, 40% of the cases in Northern Punjab.

job, 22% in AJK and 6% in Mirpur. From Table 3.6, it becomes clear that the process of fee selection is the least open and consensus focussed in Northern Punjab.

APP1 Table 1.28 shows the distribution of water fee payment by number of households. An estimate of the non-payment deficit can be made here by comparing the above table with Table 2.5. The following three diagrams listed as 3.4, 3.5 and 3.6 can shed some light on the relative deficits in the three areas as a function of number of connections. It appears that non-payment is not a major issue in either AJK or Mirpur, a visible non-payment deficit exists in the case of Northern Punjab, as can be seen in Figure 3.4.

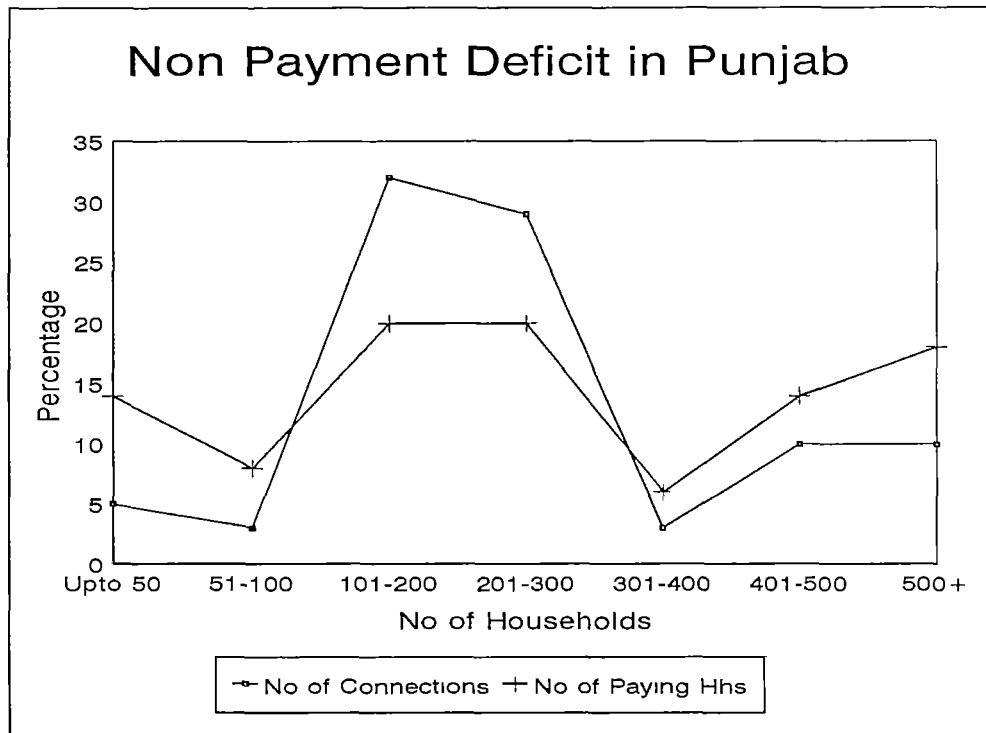


Figure 3.4: Non Payment Deficit in Punjab

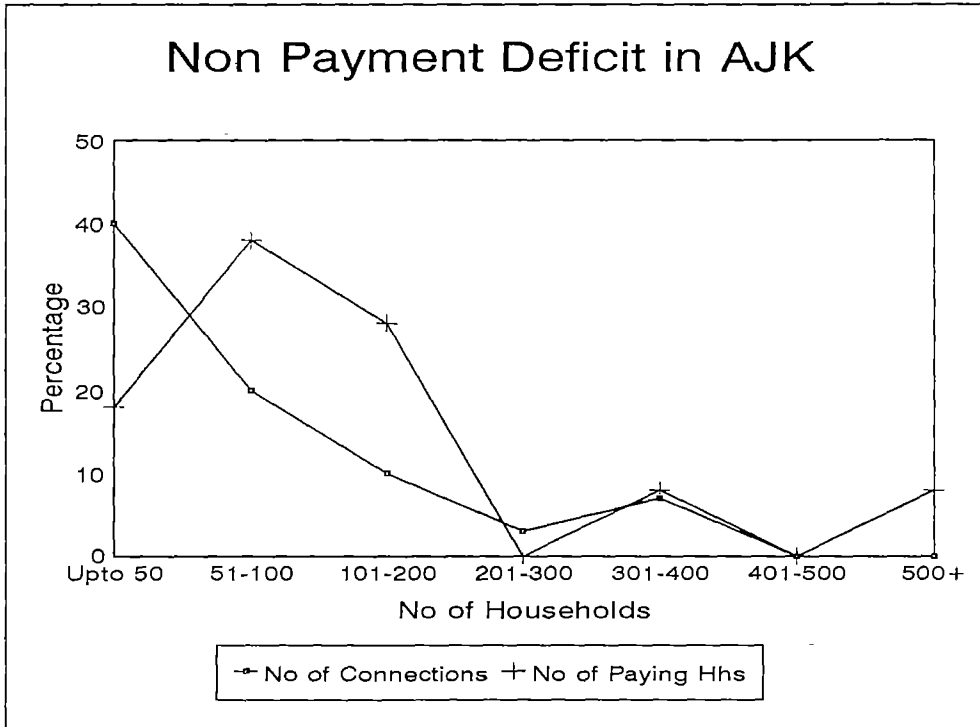


Figure 3.5: Non Payment Deficit in AJK

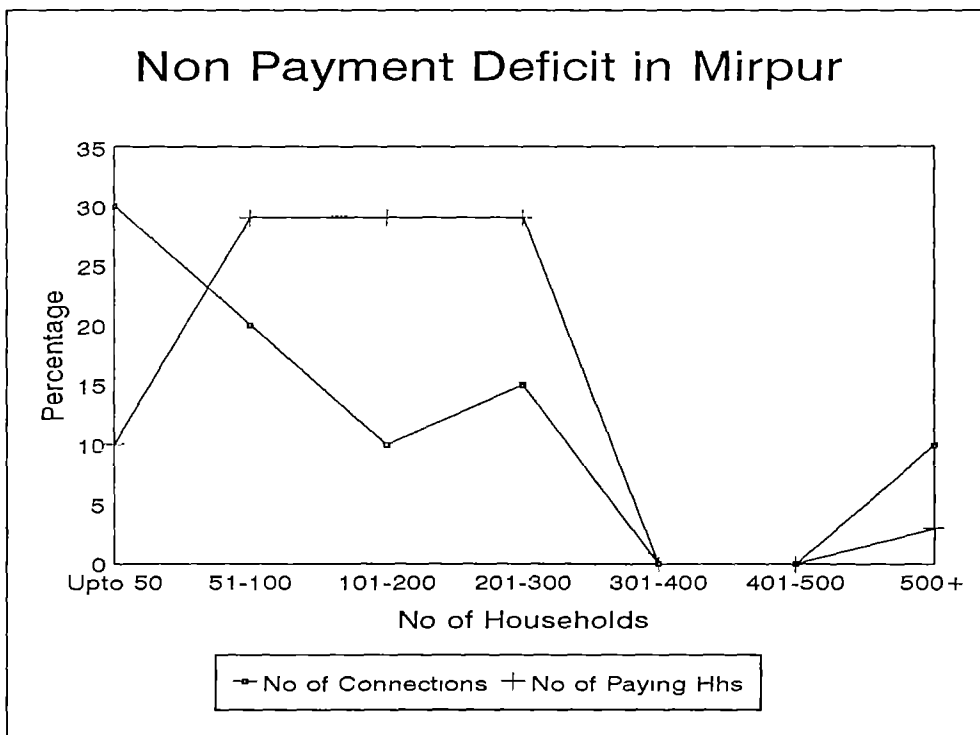


Figure 3.6: Non Payment Deficit in Mirpur

### 3.1.6.3 Changes in the Water Fee

The dynamism of the organisational system and structures to meet the changing environment, can be assessed by changes in the water fee and the process of initiating these changes. In Figure 3.7 it can be seen that in 81% of the cases in Northern Punjab, 42% of the cases in AJK and 77% of the cases in Mirpur, water fee was changed at least once. The low change rate in AJK can be attributed to the differences in technology options and maybe even lower service levels where lift pump schemes exist (standposts vs household connections)

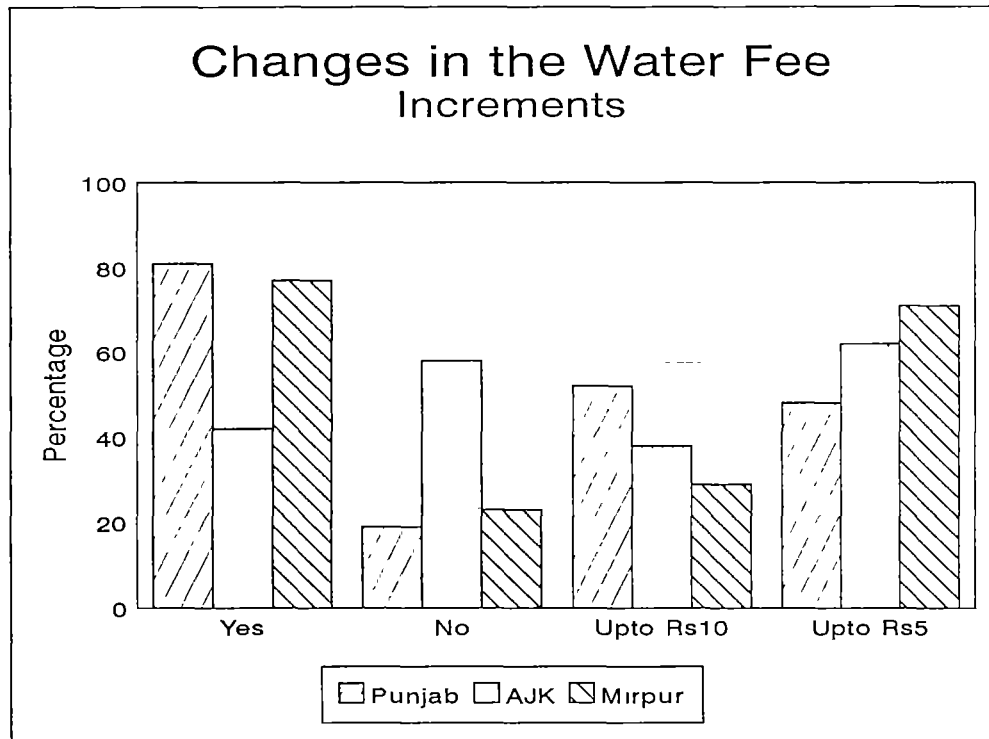


Figure 3.7: Changes in the Water Fee

In Northern Punjab the incremental change was higher at Rs 10, ie 52% of the total cases reported (See Figure 3.7 and APP1 Table 1.30). For AJK and Mirpur the increments of Rs 5 were more common, ie, 62% and 71% respectively. However the frequency of change was higher in both AJK and Mirpur, implying that the overall change in the water fee was similar in all three areas. The common frequency of change, since the scheme had started, was one time only in 58% of the cases reported in Northern Punjab, 37% for AJK and 41% for Mirpur; thus implying that changes were more than 2 but less than 5 in a majority of the cases for AJK and Mirpur.

The main reason given for changing the water fee in Northern Punjab was the inadequacy of the previous amount in covering operational costs, ie 63% of the cases, combined with the lack of maintenance cost coverage, ie 24% of the cases. Minor reasons in all three areas were reported as the need to cover the increase in the salary of the operator/valveman (important for Northern AJK), the replacement of diesel engine with an electric motor etc.

The direct involvement of government functionaries in determining the changes in the water fee are the least in Mirpur (9%), followed by AJK (15%) and by Northern Punjab (35%) (See APP1 Table 1 29). Similarly the role of the community and the Water Committee is most visible in Mirpur, 38% in both cases, ie the majority of changes are decided in consultation with the community. The structure is most non-representative in Northern Punjab and where communities are being consulted, in 30% of the cases it is through the village influentials or selected village representatives. As noted in the previous section, the non-payment deficit is largest in Northern Punjab and can be attributed to the non-representative process of fee change, combined with the larger incremental hike ie Rs 10.

### 3.1.7 Availability of Water and Satisfaction with Water Quality

Rudimentary indicators of satisfaction include the quantity and the quality of water. As can be seen in Figure 3 8 the frequency outcomes of water availability are more diverse in the case of both AJK and Northern Punjab. In all three cases the majority of schemes are re-

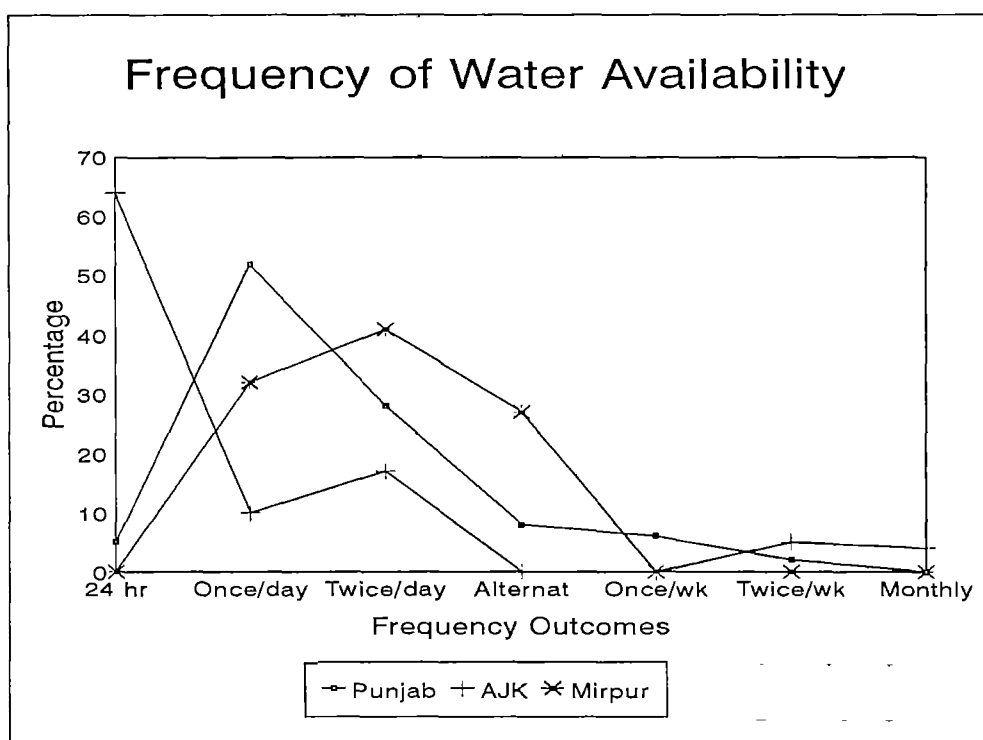


Figure 3.8: Frequency of Water Availability

ceiving water at least once a day, ie 85% in Northern Punjab, 91% in AJK and 73% in Mirpur. The high incidence of a 24 hour supply in AJK requires some clarification. Most water supply schemes surveyed in AJK were gravity flow schemes fed by natural springs. There may be chances of seasonal variation in supply in terms of total quantity available, which is not being reflected in these figures. Within Northern Punjab, there is a higher unreliable supply, and 16% of reported cases get water from alternate days to once after every 20 days. In Northern Punjab, unreliability of the water supply may also justify the higher reliance on neighbour's connections (APP1 Table 1 5). For AJK the comparable figures are 9%

The interesting thing to note in Mirpur is the concentration on just three types of outcomes, with 27% of the cases in the Alternate days category, 40% receiving water Twice a day and the remaining at least Once a day. This may be implying that communities are trying to keep operational costs down by water rationing or that water is being shared from one source amongst different communities/villages (this was common in both Mirpur and certain areas of Northern Punjab). Moreover, within Mirpur, water sharing and distribution is formally regulated and communities have more resources to invest in on-site storage facilities like water tanks. This provides the community with the option of phasing the flow of water to different areas within the village, since households can store water to meet their daily requirements

Duration in Minutes	Northern Punjab	AJK	Mirpur
0-30 Minutes	77%	97%	90%
91-120 Minutes	22%	3%	10%

**Table 3.7: Duration of Supply by Area**

Majority of cases reported in all three areas were receiving water for at least half an hour, that is 97% in AJK, 90% in Mirpur and 77% in Northern Punjab. If Northern Punjab is compared to Mirpur, the incidence of 91-120 minutes duration is greater, 22% and 10% respectively. This could once again reflect the fact the communities in Mirpur are more attuned towards addressing cost reduction issues.

It appears that communities are generally satisfied with the existing water quality (See Figure 3.9 and APP1 Table 1.31). Communities in Mirpur have the highest satisfaction level that is 82%. The interesting issue to note is that in terms of duration and availability people in Mirpur are receiving less water, however, satisfaction levels are still relatively high. This may imply that Mirpur communities are carefully evaluating the pros and cons of different scenarios and based on costs of operation are willing to compromise on water availability and timings. The other thing to note is that despite 64% of cases having a 24 hour supply in AJK, satisfaction with water quality is the lowest at 67%. One reason for this could be the seasonal turbidity of water. Communities often complained that the source tank was uncovered therefore the water would get muddy especially during the rainy season.

### 3.1.8 Expansions in the System

Changes?	Northern Punjab	AJK	Mirpur
Yes	70%	56%	60%
No	30%	44%	40%

**Table 3.8: Changes in the System by Area**

The highest incidence of changes in the system were reported in the case of Northern Punjab, ie 70% of the total reported cases. For AJK and Mirpur the numbers are 56% and



60% respectively. In APP1 Table 1.32 it can be seen that the most common form of changes in Northern Punjab are related to changes in the distribution network (42%) and the replacement of the motor. Similarly, the most common form of system change in Mirpur is the increase in the number of connections (27%) and replacement of pipe sizes (14%).

Furthermore, for AJK the construction of additional tanks is the most common change (26%). Another interesting fact that is illustrated in APP1 Table 1.32 is the multiple system of changes in Northern Punjab, i.e., in most cases more than one system change has occurred. For AJK and Mirpur, system changes on average if reported are one per case. This may be related to who is paying for these changes? In Northern Punjab in most instances, changes were financed through the agency, while in both AJK and Mirpur changes were primarily being funded by the communities themselves.

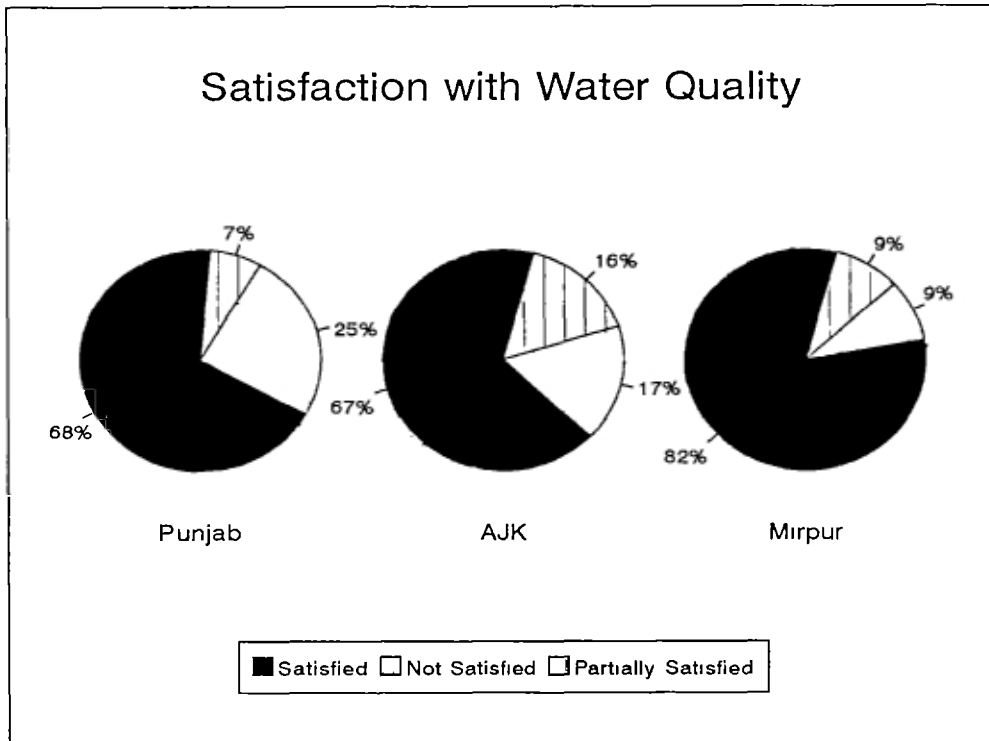


Figure 3.9: Satisfaction with Water Quality

### 3.2 Conclusions:

- 3.2.1 The approval period in AJK and Mirpur is double that of Northern Punjab in most cases.
- 3.2.2 The total cash contribution reported was the highest in Mirpur.
- 3.2.3 The existence of three types of rules was the highest in Mirpur, however, in the Northern Punjab there was a greater concentration on procedural regulations. Implementation of rules was higher in AJK.

- 3.2.4** In a majority of cases in AJK, there was no regular water fee. The average fee amount varied between Rs15-30 in both Northern Punjab and Mirpur. The process of fee selection was the most “open” in AJK and Mirpur as compared to the Northern Punjab. Infact, in 40% of the cases; in Northern Punjab, the fee was decided by the Agency.
- 3.2.5** Non-payment of water fee is not a major issue in AJK and Mirpur. However, a major non-payment deficit exists in Northern Punjab, which in turn impedes the functioning of the system.
- 3.2.6** Most contractors were selected through tenders in Northern Punjab, while the involvement of the community in contractor selection was the highest in AJK. Lag periods in construction were more common in AJK and Mirpur.
- 3.2.7** Planned maintenance was reported in very few cases in all three. The quality of repair is also very inferior in AJK as compared to Mirpur in particular.
- 3.2.8** Reported frequency outcomes of water availability were more diverse in Northern Punjab and AJK. The duration of supply was however extremely limited in all three areas, with water available for half an hour each time. Communities were however most satisfied with the current system in Mirpur.
- 3.2.9** The highest incidence of expansions or changes in the system were reported in Northern Punjab, ie, in 70% of the cases and primarily involved changes in the distribution network or replacement of motor. The majority of cases of changes reported in AJK and Mirpur were financed by the community, the opposite was true in Northern Punjab.

## Key Stakeholders in Water Supply

---

The incentive to participate is a prime motivator for the key stakeholders and will determine the community level outcomes, both in terms of project level decision making and organisational outcomes. The first set of questions to ask is:

- Who are the main stakeholders?
- What roles are they performing?
- What are their reasons for participation?
- What are the direct and indirect advantages and costs of participation?
- What are the socio-economic cultural barriers to participation?
- What is the extent and intensity of participation and how sustainable is it?

This Chapter will attempt to answer some of the above listed questions by evaluating the role of each set of stakeholders at different stages of a water supply project. However, the last two questions will be taken up in the next chapter. Supporting Tables to this Chapter can be found in Appendix 1 i.e., APP1 Table 1.33 to Table 1.37.

### 4.1 ROLE OF INFLUENTIAL COMMUNITY MEMBERS/LEADERS DURING THE WS PROJECT

No of Leaders	Northern Punjab	AJK	Mirpur
1	38%	36%	43%
2	34%	26%	43%
3	17%	26%	14%
4+	11%	12%	0

Table 4.0: Number of Leaders by Area

#### 4.1.1 Types of Leaders and Revealed Leadership Qualities

Supportive leadership is essential for the sustainability of any community based organisation. One prognosis that can be articulated relates to the dampening effect of non-supportive leaders on community involvement -- if non-supportive leadership structures exist, it is possible that the role of the community in any major development will be marginalised. Fur-

Furthermore, the process of selecting leaders, the evolution of leadership patterns and the role of the leaders in village development can have an impact on project outcomes and equity issues

In any rural community, there are at least two sets of leaders, ie, the traditional leaders like the numberdar, the biraderi elders and the elected representatives, like the union councillors. Consistently, in all three areas the identification of numberdars as leaders was low. It appears, that with changes in the economic profile of the area and with better access to infrastructure ie roads, the profile of leaders has also undergone a transformation. This new class of leaders has primarily emerged as a result of international migration, especially in areas like Mirpur and Kotli in AJK and can be termed as “community activists”, ie community members who do not hold any political office or traditional status in the community, but who have been involved in public activities (Refer to Section 4.3) Furthermore, in Northern Punjab, the elected representatives are more strongly entrenched and under a number of cases the numberdar had been elected as the Union Council representative, implying a synergy in the traditional and elected leadership patterns

The number of leaders, can be one way of viewing the accountability of the leaders and the issue of power sharing and decision making at the community level. There is a slight variation amongst the three areas in terms of number of leaders, however a majority of cases reported had at least 2 leaders, ie, 62% in Northern Punjab, 64% in AJK and 57% in Mirpur (See Table 4.0) However, it is necessary to understand the perceptions of the community with respect to existing leadership, so that a consensus can be reached regarding the quality and type of leadership that communities desire

Communities identified five main quality attributes of good leadership, ie, commitment, honesty, selflessness, rationality and sensitivity to the poor (See Table 4.1) However, all were ranked differently in the three areas. Sensitivity to the poor, ie focussing on alleviating the problems of the poor was ranked high in Northern Punjab, while honesty and commitment were ranked medium and selflessness was ranked low. In AJK, more emphasis was placed on selflessness and commitment as opposed to the other three attributes. Mirpur was similar to Northern Punjab, with respect to ranking selflessness and sensitivity to the poor as necessary leadership qualities. Two other “skills” were mentioned, ie decision making and contacts with the outside agencies. However, these were given low rankings in all three areas. Communities were of the perception, that the last two could be developed, while the first five are prerequisites for good leadership. In other words, a good leader is honest, committed and sensitive to the needs of the poor.

Quality	Northern Punjab			AJK			Mirpur		
	Hi	Med	Low	Hi	Med	Low	Hi	Med	Low
Commitment		✓			✓				✓
Honesty		✓				✓			✓
Selfless (no self-interest)			✓		✓			✓	
Rational & Non-Emotional			✓			✓			✓
Sensitivity to the poor	✓					✓		✓	
Good Decision Making skills			✓			✓			✓
Have Contacts			✓			✓			✓

**Table 4.1: Leadership Quality Scale<sup>7</sup>**

The role of the leader in village level activities can be seen in Table 4 2, which identifies the main tasks of a leader. In more general terms, the main job of a leader as identified by communities is to solve village level problems (ranked high in Northern Punjab and AJK and medium in Mirpur). Overall, it appears the role of the leader is seen to be that of an agent of change in the area of development. Interestingly enough the leader was also seen to be critical for the smooth functioning of the water supply system in all three areas, ranked high in Northern Punjab and medium in AJK and Mirpur.

Task	Northern Punjab			AJK			Mirpur		
	Hi	Med	Low	Hi	Med	Low	Hi	Med	Low
Obtain Facilities for Village/Work for betterment of village	✓			✓				✓	
Solve O&M issues of water supply	✓				✓			✓	
Provide assistance to the poor			✓			✓		✓	
Solve village level problems	✓			✓				✓	

**Table 4.2: Leadership Task Scale<sup>8</sup>**

<sup>7</sup> Qualitatively implying that high attributes were necessary prerequisites for good leadership, medium were important but not necessary and low were neither important nor necessary.

<sup>8</sup> Ranking implies priority tasks/primary area of function of leaders as perceived by community members.

#### 4.1.2 Role of Leaders in the Initiation Process

As mentioned in Table 3.1, 77% of schemes in Northern Punjab, 64% of the schemes in AJK and 68% of schemes in Mirpur had at least one elected representative involved in the initiation process. APP1 Table 1.33 highlights the actual initiators, i.e. the most “active” representatives are at the union council level, either the members or the Chairman. It is interesting to note that out of these 94% of them were residents from the village in Northern Punjab, 95% in AJK and 83% in Mirpur. In other words, where the initiators are at the level of the union council, they are also residents of the area. High level representatives have the highest incidence in Northern Punjab (17%) and includes MPA and MNA initiated schemes.

The reasons for initiation illustrate the incentives for participating at this stage. In the case of the union council representatives, they were involved in the initiation because of their contact with government agencies or because of their need to obtain votes. The same reasons were given for the higher level representatives as well. At this level, developments in the water sector are being channelised for winning and strengthening political affiliations.

#### 4.1.3 Role of Leaders in Technology Choice

APP1 Table 1.34 illustrates the role of the elected representatives in terms of deciding technology options. In Northern Punjab, the involvement of the representatives at all three levels in selecting technology is marginal. There are some differences in the case of both AJK and Mirpur, where at the level of the union council, representatives are involved in source selection decisions. In decisions regarding storage tanks and service levels the role of Union Council representatives is more visible in both AJK and Mirpur as compared to Northern Punjab.

#### 4.1.4 Role of Leaders in Financial Management

Financial Decision	Northern Punjab			AJK			Mirpur		
	UC	DC	MPA MNA	UC	DC	MPA MNA	UC	DC	MPA MNA
Collection of per hh contribution	2%	0	0	17%	0	0	27%	14%	0
Decision regarding amount per hh	3%	0	0	12%	0	0	0	5%	0
Responsibility of record maintenance	0	0	0	17%	0	0	9%	5%	0
Decision regarding amount of water fee	42%	3%	0	7%	0	0	13%	9%	0
Changes in Water fee	47%	3%	0	2%	0	0	0	5%	0

**Table 4.3: Leaders and Decisions regarding Financial Management by Area**

The scaling of financial decisions, during the life cycle of the project involve three types of decisions, i.e. collection of household contribution during the implementation of the project, record maintenance tasks and water fee collection decisions.

The involvement of elected representatives during the first two levels is negligible in Northern Punjab (maybe because community contribution is negligible) and marginal in both AJK and Mirpur and at the Union Council level only (See Table 4 3).

The order is dramatically reversed in Northern Punjab with respect to water fee decisions, ie an incidence of 42% in Northern Punjab at the Union Council level. In almost half the cases decisions regarding the water fee are the responsibility of Union Council representatives in Northern Punjab and may be reflecting the policy level decision of handing over the scheme to the Union Council after two years of operation. In 9% of the cases in Northern Punjab, the fee was being collected directly by the Union Council representatives, the figures were 7% and 5% for AJK and Mirpur respectively.

#### **4.1.5 Role of Leaders in Conflict resolution**

The process of conflict resolution can highlight the role and efficacy of leadership in reaching consensus decisions and in dealing with confrontational issues. One measure of this can be reviewing the role of leaders in conflict resolution as a result of rule implementation. In terms of conflict resolution, in AJK the role of the traditional leaders appears to be more significant, ie the biraderi elders were more involved in resolving community level disputes.

### **4.2 ROLE OF LINE DEPARTMENT OFFICIALS DURING THE WS PROJECT**

The success of any project will be determined by the community agency fit. Like the issue of supportive leadership, the issue of responsive extension agents is equally important. Front-line workers provide appropriate signals to community members and can thus mould the responses of community action. In other words, the level of participation and the intensity of involvement of communities is related to the role of the line department agents. It has been demonstrated, that where communities are more involved in decision making, the project outcomes in terms of ownership and functioning will be better. It is necessary to trace the role of government agents at each stage of the project, in order to understand the agency-community function.

#### **4.2.1 Role of Line Department Officials in the Initiation Process**

In all three areas, as seen in APP1 Table 1.35, the role of the line department officials in the initiation process is marginal. This supports the existing selection processes of the three areas, ie, schemes are forwarded through the elected representatives to either the LGRDD or the PHED. From APP1 Table 1 35, it can be presumed that need articulation is the responsibility of either the elected representatives or the community and does not fall within the mandate of the line department. The primary reason for involvement of government representatives at this stage related to their residency in the village or their established contacts within the line departments.

#### 4.2.2 Role of Line department officials in Technology Choice

Technology Option	Northern Punjab	AJK	Mirpur
Well	44%	2%	10%
Spring	9%	36%	9%
Pump/Motor	85%	17%	59%
Storage Tank	56%	45%	23%
Main Line	79%	60%	45%
Household Connection	44%	10%	10%
Standposts	18%	19%	5%

**Table 4.4: Role of Line Department Officials in Technology Selection by Area**

In Table 4.4, a top heavy role of the line department in terms of technology choice is visible in the case of Northern Punjab. In Northern Punjab, the role of the agency is apparent in terms of source selection, pumping systems, storage and distribution networks. In other words, most of the agency level inputs go in the technological design of the scheme and in determining the feasibility of the technological options.

In the case of AJK, the critical decisions (since the majority of the cases reported are gravity flow systems), regarding spring selection, storage tank and the main line, are being undertaken by the government officials.

Compared to Northern Punjab, in Mirpur there appears to be less agency involvement or control over technological decisions, especially in the case of source selection and storage options. In Mirpur and to a lesser extent in AJK, the figures reveal the underlying interactive processes, in other words, communities are more likely to be involved in planning and design in Mirpur and AJK, than in Northern Punjab.

#### 4.2.3 Role of Line Department Officials in Financial Management

The role of the line department is again more visible in Northern Punjab in terms of decisions regarding the water fee (See Table 4.5). In 47% of the total cases, the fee amount was decided by line department officials (usually the SDO or the Overseer). In 12% of the reported cases in Northern Punjab, the fee was being collected by the government representatives directly, there were no such instances reported in AJK or Mirpur.

Water fee decision	Northern Punjab	AJK	Mirpur
Amount of water fee	47%	15%	4%
Changes in water fee	24%	12%	5%

**Table 4.5: Role of Line Department Officials in Water fee selection by Area**



### 4.3 ROLE OF COMMUNITY DURING THE WS PROJECT

Community involvement can be measured in terms of a general input or in some cases as a more specialised input -- to understand the relative features of different types of involvement, three types of community groups have been identified, ie, community members collectively (with no distinguishing characteristics), community activists and last a specialised group which primarily includes retired officials or ex-military persons. In a number of instances, the involvement of retired individuals, graduates into the role of community activists -- so where specialised groups exist, they are community activists in the making.

#### 4.3.1 Role of Community in the Initiation Process

Type of Group	Northern Punjab	AJK	Mirpur
Community Members	15%	31%	18%
Community Activists	20%	52%	64%
Specialised Members	6%	10%	5%

Table 4.6: Role of Community in the Initiation Process by Area

The direct involvement of community members in the initiation phase is almost double that in AJK than in Northern Punjab or Mirpur. However, the involvement of the community in Mirpur is in the form of greater community activist participation, ie at least 64% of the total cases. Overall figures reveal, (See APP1 Table 1.11), that in both AJK and Mirpur at least 2 individuals have been responsible for the initiation of the water supply scheme, ie, an elected representative along with a community member or community activist. In Northern Punjab the role and maturity of the community is at an incipient level, most initiation decisions as revealed by the above table are being undertaken by elected representatives. In all three areas, the role of specialised members is quite marginal at this stage.

The difference in literacy levels between AJK/Mirpur and Northern Punjab is one qualifying factor for direct community involvement. It appears that the literate community members are more likely to take on the role of spokespersons at this stage, as has been demonstrated in AJK and Mirpur. However, literacy is not a prerequisite for community participation in decision making; as mentioned, among other factors like the agency-community fit, the type of leadership etc will determine roles and responsibilities.

In the case of community activists, contact with agencies was an important social role, combined with their exposure to other communities through working abroad. Education was also seen as a strong source of "respect" for community activists. Wealth status and availability of time were important factors for the involvement of specialised members -- retired men were more likely to fall in this category for they had available time. The interesting transition to note is that most specialised members were only termed as community activists after they had demonstrated their commitment to the community by active involvement in village activities.

The occupation of the community activists reveal some interesting socio-economic differences between the three areas. 33% of the community activists were landlords in the case

of Northern Punjab, 50% were retired government servants and the remaining were small enterprise owners (like shopkeepers etc) In AJK professionals like teachers comprised of 25%, retired government servants comprised another 25% and the remaining 50% were persons who had returned from abroad. The distribution for Mirpur was similar to AJK

### 4.3.2 Role of Community in Technology Choice

In terms of technology selection, the role of the community in Northern Punjab is only apparent in the case of deciding service levels, ie, selecting household connections (See APP1 Table 1 36) In AJK community involvement occurs at each stage ie at the source selection level, at the storage tank siting and size decisions and at the decision of service level selection Furthermore, the role of the community activist is also more pronounced in the case of AJK. Similarly, in Mirpur, community members are involved in source selection, tank siting and service level selection. The following figures visually show the relative involvement of the three main categories of stakeholders in technology choice

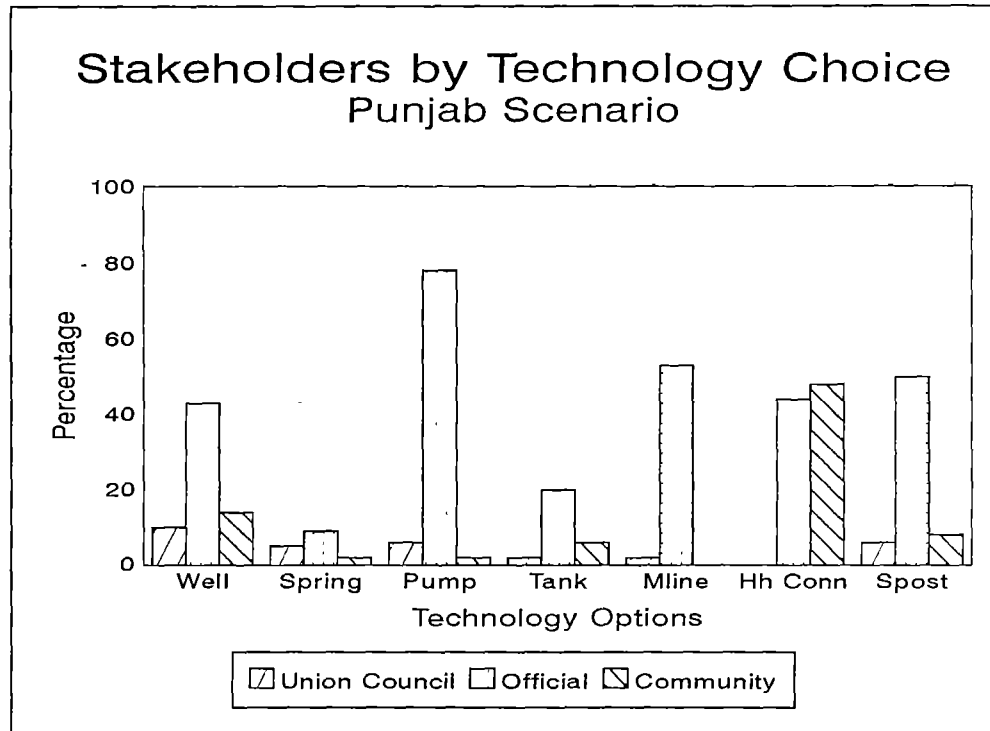


Figure 4.0: Stakeholders by Technology Choice Punjab Scenerio

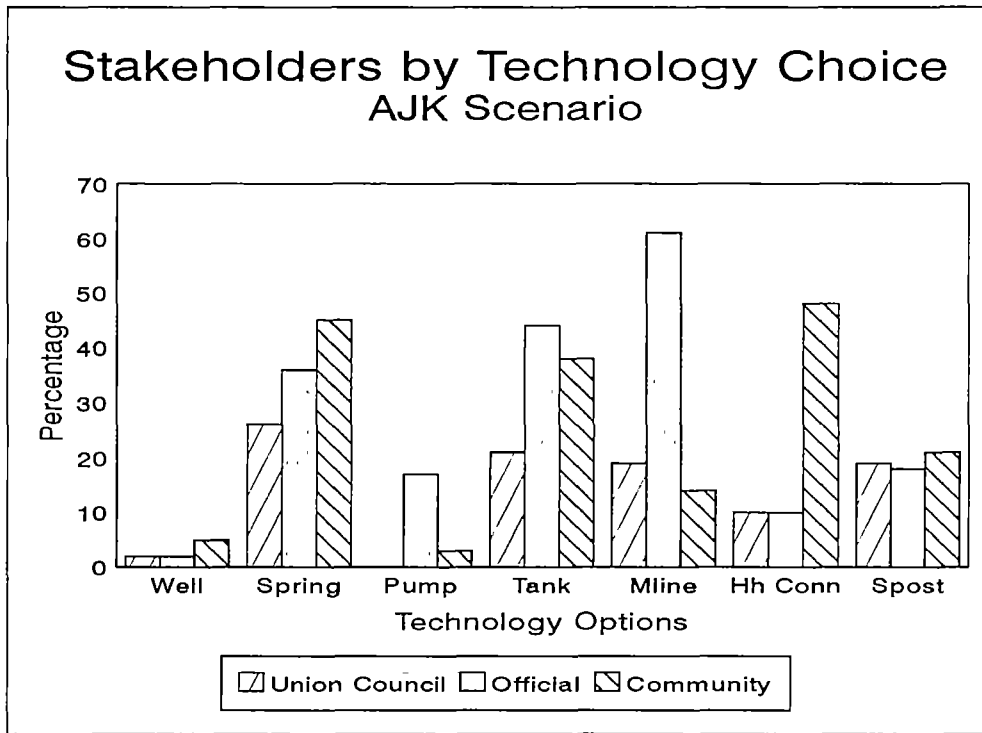


Figure 4.1: Stakeholders by Technology Choice AJK Scenerio

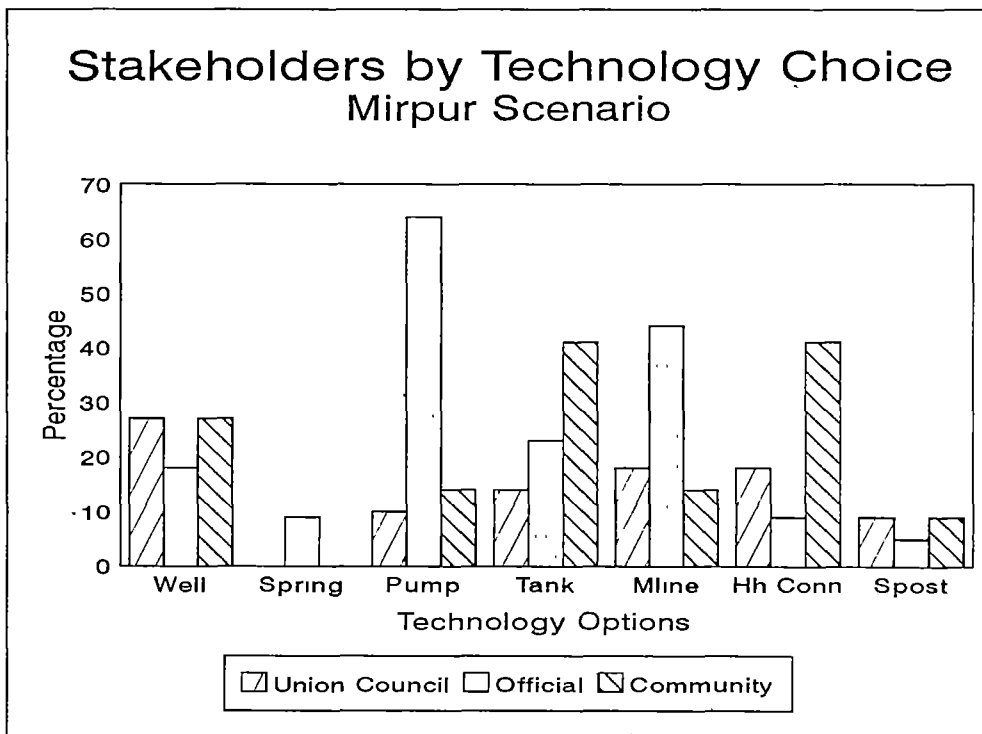


Figure 4.2: Stakeholders by Technology Choice Mirpur Scenerio

### 4.3.3 Role of Community in Financial Management

Decisions	Northern Punjab			AJK			Mirpur		
	Com Mem	Com Act	Spe Mem	Com Mem	Com Act	Spe Mem	Com Mem	Com Act	Spe Mem
Collection of per hh contribution	2%	2%	5%	33%	33%	7%	32%	23%	0
Decision of per hh contribution	2%	0	0	36%	24%	5%	23%	0	0
Responsibility of Record Maintenance	0	2%	3%	5%	19%	0	5%	14%	0
Water fee amt	2%	0	5%	37%	18%	0	52%	14%	0
Changes in water fee	5%	0	5%	0	5%	5%	10%	10%	0

**Table 4.7: Community and Decisions regarding Financial Management by Area**

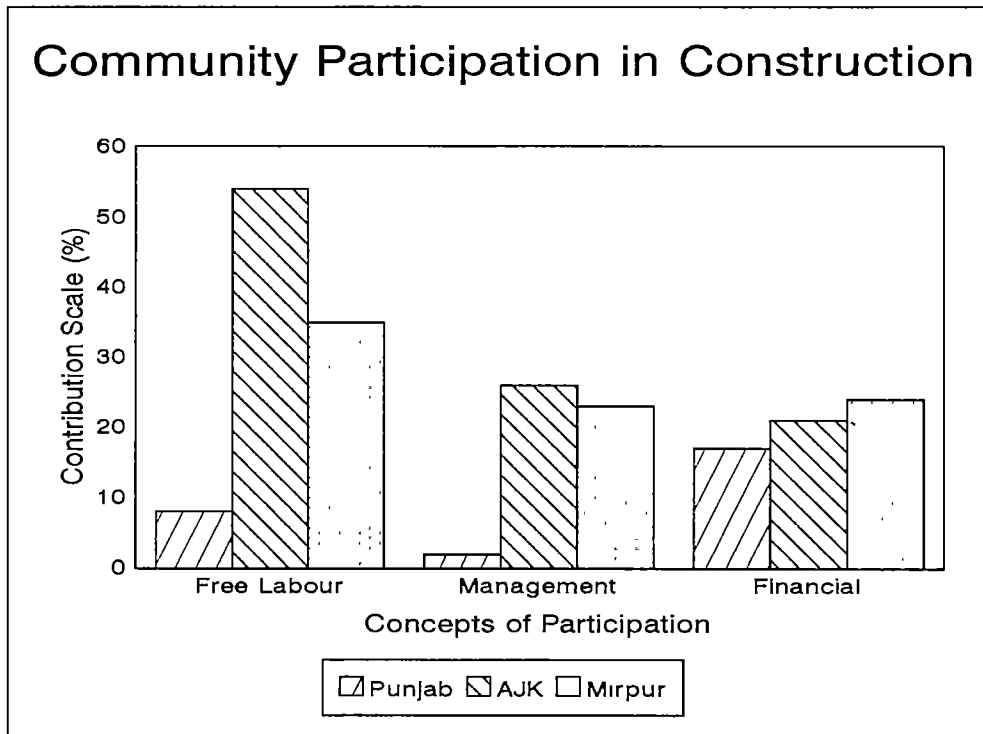
The role of the community in any form in financial management issues is negligible in Northern Punjab and supports the fact that community financial contribution is extremely rare (See Table 4.7). In AJK and Mirpur community involvement at the first two levels is quite high, ie community members and activists, especially in the area of collection and per household contribution decisions. This relates to the trust that the community is able to place in certain members of the village and their pronounced role in the initiation of schemes. Credibility of community activists appears to have been built over time, since in all three areas there is less involvement of community members in record maintenance (refer to Table 3.2).

In a majority of the cases decisions regarding water fee in Mirpur are being undertaken by community members (52%) or community activists (14%). In other words, in both AJK and Mirpur there is direct involvement of communities in deciding the amount of the water fee and for recommending changes. The opposite is true for Northern Punjab. In 12% of the cases in Northern Punjab, 29% of the cases in AJK and 55% of the cases in Mirpur the fee was being collected by community members and/or activists.

### 4.3.4 Role of Community in the Construction phase

APP1 Table 1.36 highlights two on-going and highly contested views of community participation, ie, the free labour concept versus the broader decision making/management oriented point of view. In APP1 Table 1.36, the supervisory/management role of the community is apparent in both AJK and Mirpur and non-existent in Northern Punjab. Construction decisions are therefore beyond the ken of communities in Northern Punjab

The free labour concept is visible from the four types of labour inputs being provided, ie, general labour, transportation of materials, laying of pipes and provision of skilled inputs like masonry/plumbing (which is highest in AJK). In both AJK and Mirpur, communities in all



**Figure 4.3: Community Participation in Construction**

cases have been providing at least one kind of labour input. The financial contribution concept of community participation is also revealed in the above table, with cash contributions more common in AJK and Mirpur (72% for Mirpur) and in-kind land transfers occurring in Northern Punjab.

Figure 4.3 illustrates that in terms of free labour and management roles, communities in AJK have a wider role during construction than communities in Mirpur or Northern Punjab and may have something to do with existing skill levels as well (APP4 Tables 1.14 and 1.15). However, financial contributions of communities in Mirpur are higher. The amount for Northern Punjab includes contributions in terms of free land. There is very little decision making capacity being demonstrated by communities in Northern Punjab.

#### 4.4 CONCLUSIONS:

The following conclusions can be drawn from the findings of this chapter:

- 4.4.1 The role of the community leaders in the smooth functioning of the system is viewed to be critical by the communities. There is direct involvement of Union Council level representatives in the initiation phase of the water supply scheme in all the three areas. Community members and activists are playing a pivotal role in the area of need articulation in AJK and Mirpur.
- 4.4.2 In terms of technology choices, the role of the line department comes out very clearly in the case of Northern Punjab, especially with respect to decisions re-

garding choice of pumps, main line and distribution networks. Communities in both AJK and Mirpur are actively involved in source selection, tank decisions and service level decisions

- 4.4.3** Financial management is being undertaken by either elected representatives or line department officials in Northern Punjab. In AJK and Mirpur this responsibility is being shared amongst community members and/or elected representatives.
- 4.4.4** The role of the community during the construction phase is broader in both AJK and Mirpur as compared to Northern Punjab.

## Water Committees: Multi-purpose or Uni-function?

---

This Chapter will evaluate the organisational and institutional implications of agency-community interaction as illustrated in the previous chapters and how it relates to the functioning of Water Committees. The sustainability of organisational outcomes, in the light of Water Committee functions, performance, size, representation and process of decision making, will be analysed. Supporting Tables to this Chapter can be found in Appendix 1, ie, APP1 Table 1.38 to Table 1.44.

### 5.1 EXISTENCE AND TYPOLOGY OF WATER COMMITTEES

The process of water committee formation between the two main areas, ie, AJK and Northern Punjab varies. Within the context of AJK, the Water Committee is perceived to be an integral part of any water project that is initiated by the LGRDD. The actual formation of the village level Water Committee is a phased process, involving direct community interaction with the Union Council Secretary. Organisationally, the Water Committee is preceded by a Project Committee, which is exclusively formed to undertake project implementation and construction. After the completion of the project, the Project Committee is dissolved and is replaced by a Water Committee consisting of male community members. The existence, effectiveness and the process of selection of Water Committee members varies from village to village, as will be seen in the following sections. As a result of this conscious strategy, 71% of villages in AJK and 80% of villages in Mirpur had Water Committees, as compared to 44% in Northern Punjab (See Table 5.0).

Existence of Water Committees	Northern Punjab	AJK	Mirpur
Yes	44%	71%	80%
No	56%	29%	20%

**Table 5.0: Existence of Water Committee by Area**

It is interesting to note, that the typology of the Water Committees is linked to the technology. In Northern AJK, most schemes are gravity flow systems, which require less day to day supervision and management. As a result the incidence of “informal” Water Committees was higher in these areas, ie 40% of the total reported cases as opposed to no reported cases in Mirpur. Most Water Committees, in AJK begin as formalised village committees with a clear cut mandate of managing the water supply scheme, but as time passes the intensity of effort peters out and the committee dissolves into a more cluster specific entity,

where pipe repairs (the most common form of faults/breakdowns) is undertaken informally by men of the effected area. The 40% “informal” committees fall within this spectrum of effort.

Type of Water Committees	Northern Punjab	AJK	Mirpur
Formal	57%	60%	100%
Informal	43%	40%	0

**Table 5.1: Water Committee Typology by Area**

There are no formal mechanisms for constituting Water Committees in Northern Punjab. Since 1985, the PHED has been operating under the directive of handing over schemes to the Union Councils after two years of operation. No prior arrangements or contacts are made with the community and the assumption is made that the Union Council will adequately address the needs of the village water supply for it is perceived to represent the community. However, this poses a organisational dilemma, for each Union Council represents at least 5-6 villages. Moreover, the Union Council is ill equipped to take on the managerial responsibility of running water supply schemes and are usually over burdened since water is only one part of their mandate, which encompasses rural development as a whole. The Water Committees that exist in Northern Punjab are usually ad-hoc organisations, which have been quickly organised and are non-representative of the village (See the following sections). Water Committees are mostly constituted for the sole purpose of accessing a limited pool of O&M funds, which are provided by the PHED to the Union Council once schemes are transferred. In only 44% of the total cases Water Committees were reported, out of which 43% were informal committees based on mohallas.

APP1 Table 1.38 highlights the lag period between the three areas in terms of Water Committee formation. In Northern Punjab, the lag period is the longest, ie, most schemes (76%) were completed in 1981-85, while the majority of Water Committees were formed after 1985, an approximate lag period of 2-3 years (See Figure 5.0). In AJK there is a lag period of a few months especially within the 1981-85 bracket and may be reflecting the process of Project Committee formation and the formulation of the Water Committee after construction has been completed (See Figure 5.1). Interestingly enough there is no lag period visible in Mirpur. Water Committees and Project Committees are non-distinguishable in terms of formation and this in turn may have an impact on the performance and functioning of the committees, in terms of decision making, ownership and project outcomes.



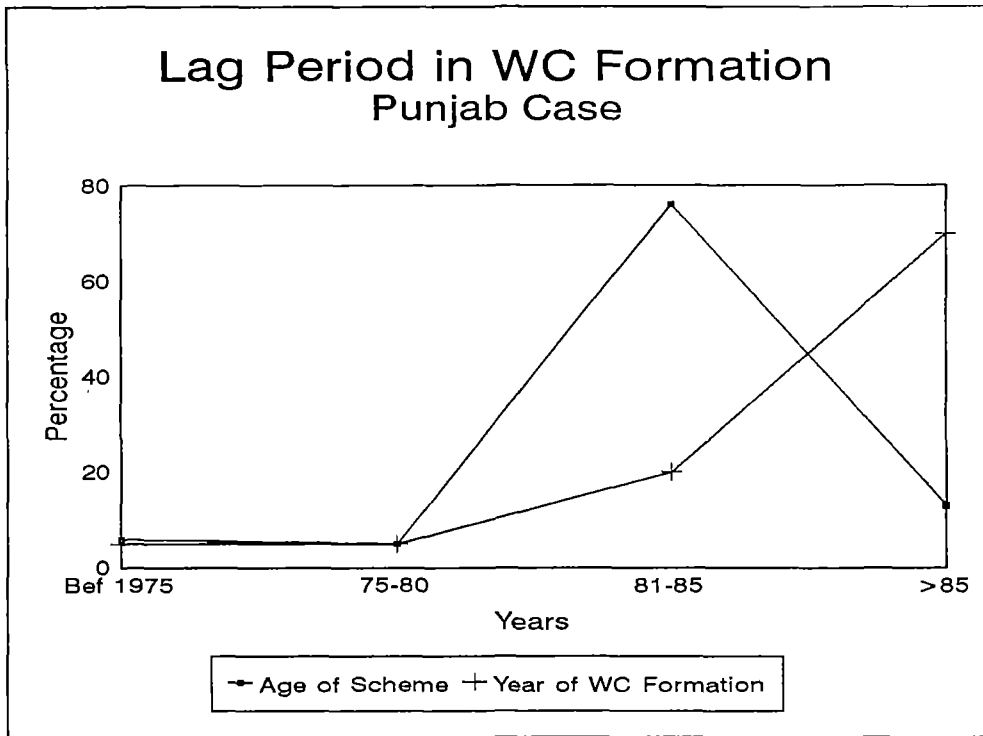


Figure 5.0: Lag period in WC Formation (Punjab Case)

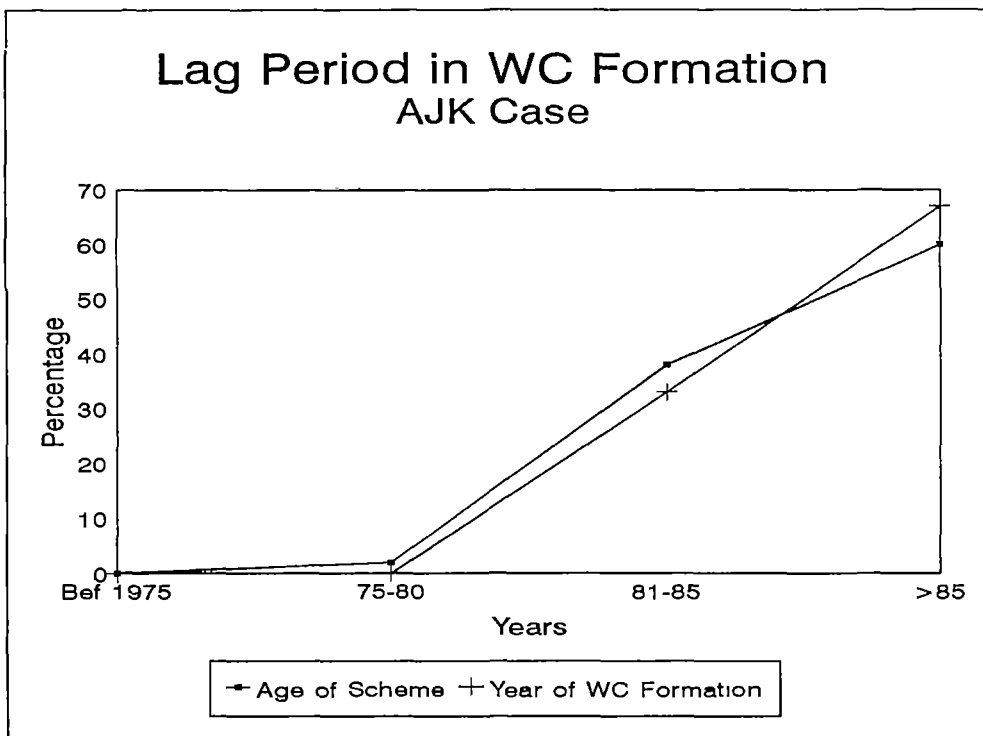


Figure 5.1: Lag period in WC Formation (AJK Case)

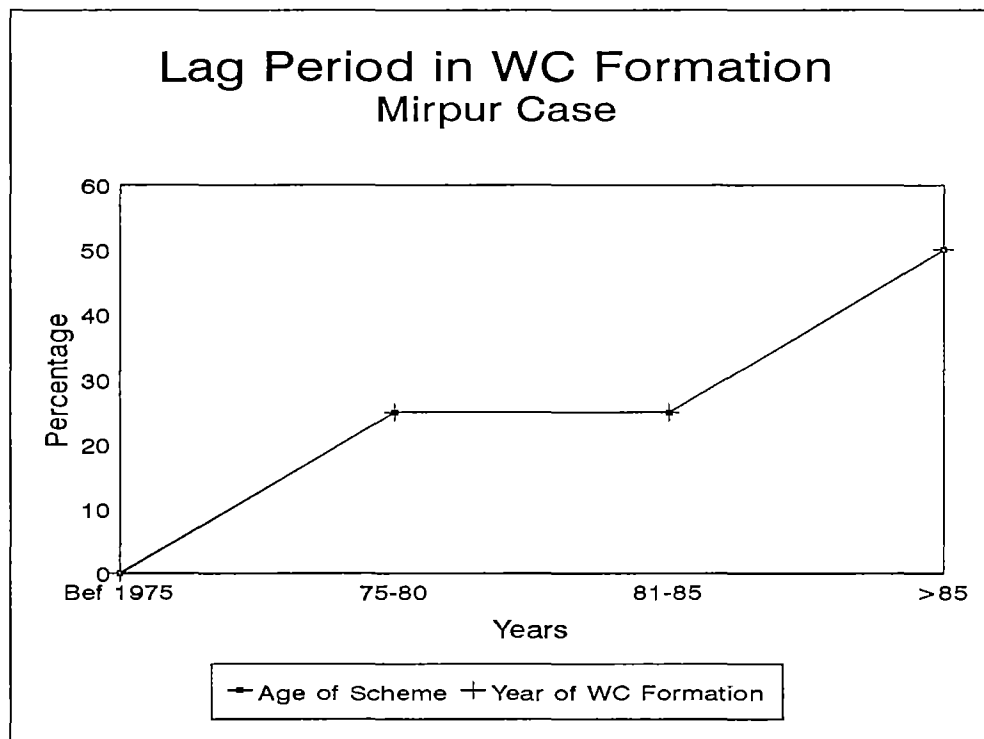


Figure 5.2: Lag period in WC Formation (Mirpur Case)

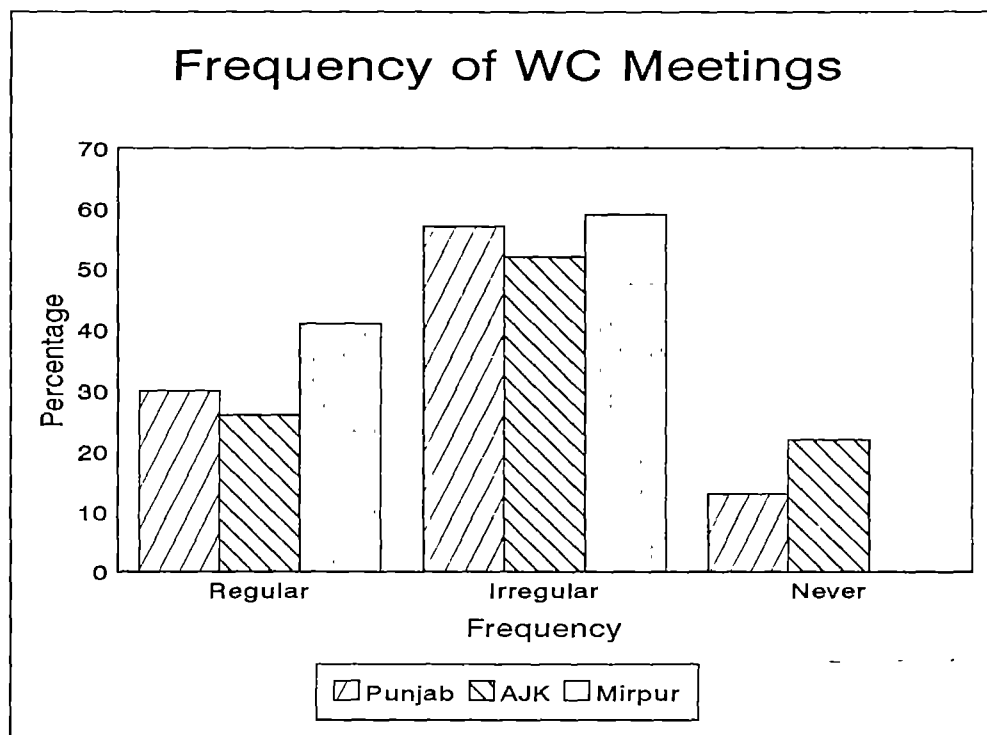
## 5.2 WATER COMMITTEE FUNCTIONS

Underlying the performance of Water Committees is the existence of a consistent framework or fundamental organisational principles, including issues like the holding of regular meetings, the clarity of roles and responsibilities, the functions of the committee, selection of members and size etc. Issues of sustainability include remuneration for the services being offered by the committee members, ie, are they working on a voluntary basis or are they being paid for their services?

### 5.2.1 Regular Meetings

The holding of regular meetings is essential for establishing an accountable organisational framework, where each member can share information and provide feedback. The incidence of holding weekly meetings was the lowest in Northern Punjab with only 4%, 17% for AJK and 21% for Mirpur (See Figure 5.3 and APP1 Table 1.39). The process of information sharing and decision-making is more regularised in Mirpur as compared to the other two areas, ie, committees meet at least once a month in 42% of the cases.

Special occasions include system breakdowns and in all three cases the majority of committees meet when it is of utmost necessity, ie, 57% in Northern Punjab, 52% in AJK and 59% in Mirpur. For AJK the difference in technology, may deem it less important to hold weekly or monthly meetings. The defunct nature of Water Committees is visible in 13% of the cases in Northern Punjab and 22% of the cases in AJK. As mentioned earlier, with time the intensity of participation of the Water Committee is reduced, especially in areas with gravity flow systems.



**Figure 5.3: Frequency of WC Meetings**

The other issue that can be raised at this stage is the nature of these organisations, ie, Water Committees are expected to function within a narrow band of operations, with time these functions become repetitive and may be taken for granted. The incentives and interests of the Water Committee members also wane, (in most cases the committee members were not being remunerated for their services and were providing their time on a voluntary basis). The cohesion of the committee therefore begins to suffer with time and if the members do not change, the static nature of the committee is reinforced.

### 5.2.2 Task Function of the Water Committee

Perceptions regarding the functions of the Water Committee varied from generalised tasks to more specific activities (See APP1 Table 1 40) In Mirpur, in 72% of the cases the main role of the committee was seen as solving all water related problems. The same was true in 59% of the cases in Northern Punjab and 45% of the cases in AJK. The other major job of the Water Committee was seen to be maintenance of the system, 41% in Northern Punjab and 28% in both AJK and Mirpur. The perceived role of Water Committees is therefore linked only to “post” system decisions and this may hinder the decision making ability of the committee as a whole. It needs to be asked at this stage, what is the range of decision-making within the Water Committee? How autonomous are these decisions? Are these decisions being implemented?

Specifically, within the context of Northern Punjab, Water Committees have been established for a definite purpose, that is, to facilitate the process of bill collection, ie 51% of the cases. An inherent dilemma in Northern Punjab context, that is the sustainability and accept-

ability of Water Committees, is a result of the existing policy environment. As mentioned, since 1985 PHED manages the schemes for two years and then hands them over to the Union Council. However, during the first two years of the scheme operation, there are no direct incentives for the PHED to recover the costs or to charge a tariff, for the recurring costs of the schemes can be built into the annual budgets. Once the schemes are transferred to the Union Council, the issue of tariffs becomes integral to the functioning of the scheme, since there are no longer any government subsidies (direct or indirect, indirect subsidies arise from the fact that PHED engineers and mechanics are paid below market salaries which are unaccounted for). From paying no tariffs, communities have to pay between Rs15-30 in order to keep the system functioning. In Northern Punjab, the Water Committees are generally disliked for they are perceived to be bill policing mechanisms and have no real mandate within the community.

### 5.2.3 Autonomy in Decision Making

Water Committee decisions depend upon their perceived and actual roles, that is, whether they are policing mechanisms or more broad based dynamic organisations. APP1 Table 1 41 and Figure 5 4 illustrates the entire range of decisions undertaken by Water Committees in all of the three areas. The involvement of Water Committees in the planning and design stage is marginal, with 17% cases reported in Northern Punjab, 41% in AJK and 25% in Mirpur in terms of deciding technology options. In AJK and Mirpur the figures may be high due to the existence of Project Committees during this stage. Since the Project Committee is usually a precursor to most Water Committees, there is some decision specific overlap. These include site selection, service level selection, tank size etc.

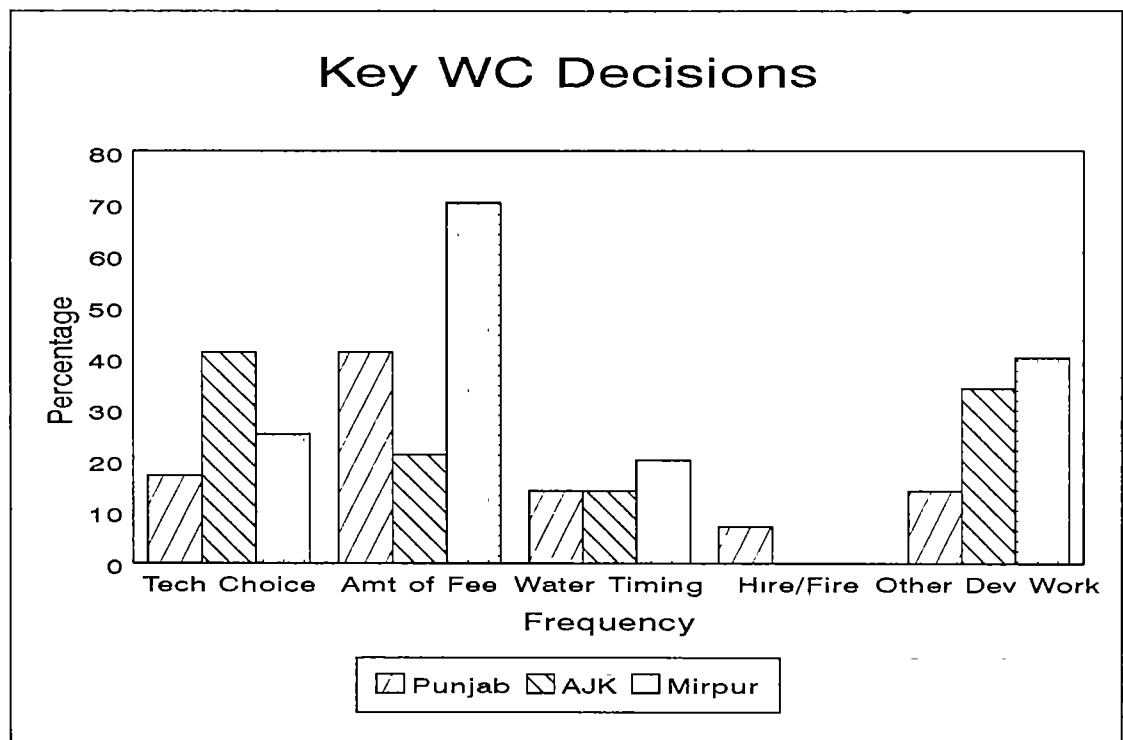


Figure 5.4: Key WC Decisions

Financial decisions include decisions regarding household contribution and amount of water fee. In all three cases the involvement of committees in deciding cash contributions is low. In Mirpur, the decisions regarding water fee amount and changes appear to be the primary responsibility of the Water Committee, ie 70% and 55% respectively. Given the difference in technology, water fee decisions do not appear to be that important in AJK and subsequently the involvement of Water Committees in this area is low as well. In Northern Punjab in 41% of the cases, the amount of the fee is decided by the committee, however, in a majority of cases in consultation with elected representatives or line department officials. In other words the decision of introducing and changing the water fee may not be an autonomous decision in Northern Punjab (See APP1 Table 1.29).

In all three cases if O&M decisions like water timings, hiring and firing of employees and changes in maintenance are evaluated, the role of the committees is marginal. This necessarily implies that either the functions of O&M are being taken on "informally" by other groups (like concerned mohalla groups) or other stakeholders like the elected representatives/influentials of the village or the line department are performing these tasks. This puts into question the efficacy and viability of the Water Committees for performing O&M tasks. Similarly the role of the Water Committees in deciding the expansion of the scheme is also marginal and again illustrates the lack of organisational viability and the inadequacy of independent decision making, within the existing structures of the Water Committee. The incidence of Water Committee involvement in other development areas is higher in both AJK and Mirpur (34% and 40% respectively) as compared to Northern Punjab. Involvement includes collaboration with the mosque committee in building a mosque, constructing a village school, processing applications to obtain other services and solving disputes like land disputes etc.

There may be two factors contributing to this lack of institutional maturity -- the role of the agencies in both instances. In the case of AJK and Mirpur, the establishment of the Water Committee after the project has been implemented, ie after the construction stage, may be creating dependent committees. When schemes are handed over to the Water Committees they are inexperienced and in a way disenfranchised by the system for they have not been involved in the previous phases. In the case of Northern Punjab, the long lag period, has a direct impact on creating dysfunctional organisations.

The other issue relates to the quality of field staff and their orientation towards institutional development -- the attitudes, beliefs, methods of the frontline workers have a link with facilitating or debilitating community development. A worker armed with answers and solutions will never provide villagers with the opportunity for making independent choices.

Furthermore, organisational development is a long term process. The inputs at each stage become the outputs at the next level. The process of forming Water Committees, the extent and depth of their mandate, the process of selecting members and defining their roles and responsibilities, translate into the efficiency of the organisation. Theoretically, it is necessary to build up the community in order to take on these roles and responsibilities. The question remains whether in both scenarios the procedures being followed by the agencies are conducive to building up the community?

### 5.3 PROCESS OF SELECTING WATER COMMITTEE MEMBERS

The process of member selection is important for determining the issues of representation. The process of selection of the Water Committee is not uniform and depends on the

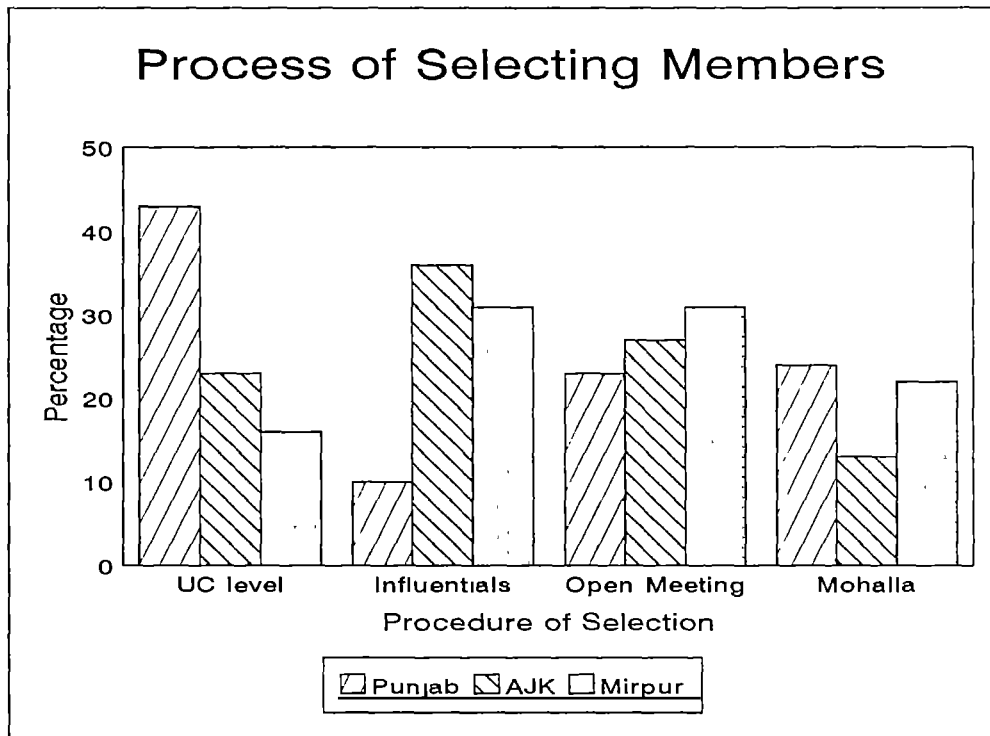


Figure 5.5: Process of Selecting Members

existing social structures within the village. The presence of local elected representatives, usually implies that they will be able to influence the process of selection. Selection of committee members can therefore range from direct nomination by the elected representatives to a process of open consensus taking with the community.

Figure 5.5 and APP1 Table 1.42, illustrate the four main type of selection processes -- i.e. selection by UC, by village influentials, in an open forum or representation based on mohalla level. The last mode of representation implies that members are selected from each mohalla as representatives of the Water Committee. The involvement of Union Council representatives is the highest in Northern Punjab (i.e. 43%) and supports the existing policy level structures. However, the role of the village level influentials is strongest in AJK and highlights the underlying power structures. The process of selecting members is most open in Mirpur with 31% of the selection of members being conducted in open meetings.

Have members changed?	Northern Punjab	AJK	Mirpur
Yes	29%	19%	50%
No	71%	81%	50%

**Table 5.2: Change in Membership by Area**

The dynamism of any organisation can be evaluated by the turnover of its members or whether there exist transparent and accountable systems for the change in membership. In both Northern Punjab and AJK, membership change was not common, only 29% and 19% of reported cases (See Table 5.2). In Mirpur members were changed in 50% of the cases and may have something to do with the migratory pattern of labour. Common reasons given for membership change were demise of member, migration of member (incidence of 50% in Mirpur), poor performance of member (reported only in Northern Punjab), fund embezzlement (rare), unresolved conflicts within the Water Committee and changes in membership due to new councillor elections (reported only in Northern Punjab).

The low acceptance of women as members on the Water Committee was apparent in all three areas (See Table 5.3), however the reasons for non-participation varied. Where female members existed<sup>9</sup> they had been selected because of the absence of men or because they were related to the Union Councillor of the village. Economically they were from a wealthy background and under both instances were educated. One of the most common barriers identified for the non-participation of women was their lack of education. Cultural barriers were stronger in Northern Punjab and the role of women was perceived to be domestically inclined, ie, an issue of purdah and segregation. In AJK and Mirpur women's lack of time was given as a major reason for non-participation. Women themselves in all three areas perceived the responsibility of the Water Committee as a "man's job". Furthermore, the capability of women was questioned by both males and females, ie, since women had never demonstrated the ability of working together, their working together in a formal environment was perceived to be debateable.

Are there any female members?	Northern Punjab	AJK	Mirpur
Yes	3%	5%	0
No	97%	95%	100%

**Table 5.3: Acceptance of Female members by Area**

#### 5.4 PROFILE OF MEMBERS

There is a slight variation within the three areas regarding the type of member (See APP1 Table 1.43). The presence of elected representatives, like Union Council Chairman and members of the Union Council, is greater in Northern Punjab, and represents the non-representative nature of the Water Committee (48%). Former Union Council members, however, are more active in water management in AJK, as can be seen by the higher involvement of community activist (55%), out of which quite a few were retired or had been

<sup>9</sup> Only one such case was reported in Northern Punjab and one case in AJK.

involved in politics (See Section 4.3). In AJK, participation in the Water Committee can be a way of re-entering the village level political process

The pace of social transformation in AJK and Mirpur has been extremely rapid. A relatively new commercial class has emerged, which relies on providing services like transportation. This has been combined with the impact of remittances through migration to other parts of the country and abroad. The profile of Water Committee members in AJK and Mirpur is therefore more representative of the existing village level structures and includes a large number of community activists, that is, villagers who have volunteered their time in undertaking village activities

The other tacit criteria that has emerged in selecting Water Committee members in AJK and Mirpur, is their financial capacity. During emergency repairs, committee members contribute to the costs of the repairs and indirectly subsidise the O&M of the schemes. These contributions are usually made in the form of a loan, which is paid back each month as a percentage of the total water bill amount that is collected. Other criteria of selection include credibility and trustworthiness, technical competence, contacts in cities or with the LGRDD and a demonstration of their managerial abilities through past involvement in village activities

Given similar processes of selection, the high presence of community members may not be a sufficient indicator of representation. The issues that would need to be assessed could include decision making power within the group, ie if elected representatives are present are they likely to dominate the decision making process? How equitably is information shared within the various groups?

### 5.5 SIZE OF WATER COMMITTEE

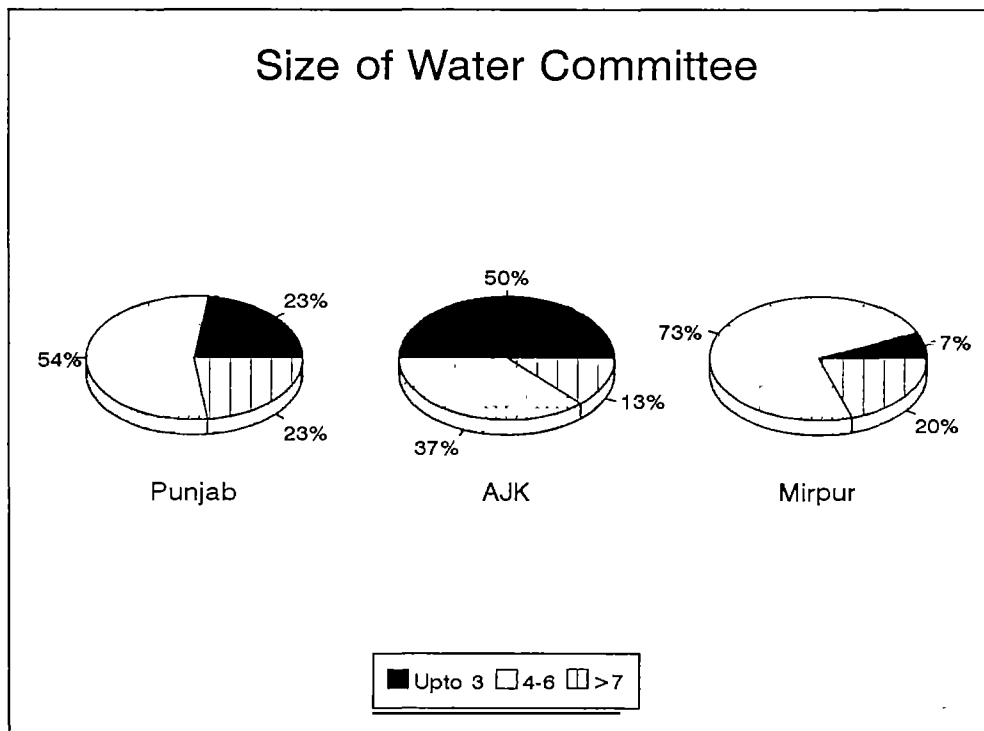


Figure 5.6: Size of Water Committee



The average size of the Water Committee varied from 4-6 members (See APP1 Table 1.44 and Figure 5 6). Some differences emerged between Northern Punjab, AJK and Mirpur that is, the average size was 5 members in Northern Punjab, 4 members in AJK and 6 members in Mirpur. There can be a number of reasons for this difference. Clarity and transparency of roles and responsibilities within the Water Committee are emphasised in the context of Mirpur. The Water Committee Chairman (similar to the Project Committee structure) is responsible for the overall financial performance of the committee. He maintains and monitors the monthly accounts and occasionally supervises the activities of the other members. Roles of the other members range from being responsible for bill collection, overseeing breakdown and repairs, hiring the operator and valveman. The area of bill collection is usually a very significant responsibility and is shared between various members. Each member represents a particular segment of the community and is responsible for collecting the water fees from his section of the village.

## 5.6 PERFORMANCE OF WATER COMMITTEE

The level of satisfaction with the Water Committee performance is highest in Mirpur, ie 93% and could be linked to the relative clarity in the roles of the members, the relative openness of the process of selection, the greater turn over of the members and greater accountability (See Table 5.4). Community level satisfaction with Water Committees was lowest in Northern Punjab ie 48%. This supports the lack of involvement of the community in the entire process of the project, ie from the design and implementation to the selection of Water Committees and the overall management of the system. The relatively lower level of satisfaction in AJK (as compared to Mirpur) can be linked to the “informal” nature of Water Committees and the lower intensity of effort with time.

Is the Committee performing well?	Northern Punjab	AJK	Mirpur
Yes	48%	57%	93%
No	52%	43%	7%

Table 5.4: Performance of Water Committee by Area

## 5.7 CONCLUSIONS:

- 5.7.1 The existence of Water Committees is lowest in Northern Punjab. Furthermore, the lag period in committee formation is also the longest in Northern Punjab, ie, on average 2-3 years as compared to that of a few months in AJK and none in Mirpur.
- 5.7.2 The process of holding meetings was most regularised in Mirpur. The “defunct” non-functioning Water Committees were highest in AJK, followed by Northern Punjab. No “defunct” committees existed in Mirpur.
- 5.7.3 The perceived role of Water Committees was linked to “post” system decisions involving O&M only, in all three areas.

- 5.7.4 Relative to Northern Punjab, committees in Mirpur and AJK have been involved in technology choice decisions. The role of Water Committees in Mirpur focusses on asset management like fee decisions etc. However, in all three areas, the role of the Water Committees in O&M is negligible and reflects the lack of institutional maturity of the Water Committees
- 5.7.5 The process of selection of Water Committee members is most egalitarian in Mirpur. Furthermore, in terms of member turnover, in 50% of the cases membership changed in Mirpur (the highest turnover rate). The acceptance of female members was low in all three areas.
- 5.7.6 The size of the Water Committee was largest in Mirpur and can be attributed to greater clarity in terms of member roles and responsibilities.
- 5.7.7 Consequently, the level of satisfaction with Water Committees was highest in Mirpur and lowest in Northern Punjab.

# Participatory Evaluation of Water Supply Schemes

---

A simple 3 scale matrix was developed in order to enable community members to conduct an evaluation of water supply schemes and to understand the perceived performance of water supply systems. Schemes were rated by community members, according to the following indicators.

Project outcomes Quantity of water

Management Task Function indicators Process of repair, Process of fee collection

Community Development Indicators Process of Water Committee selection, Ability of people to work together to solve water related issues

Equity of Benefits Indicators: The impact on women's lives.

The following chapter will analyse the data from 114 reported cases and will attempt to understand the justification provided by the communities for the various ratings.

## 6.1 PROJECT OUTCOMES:

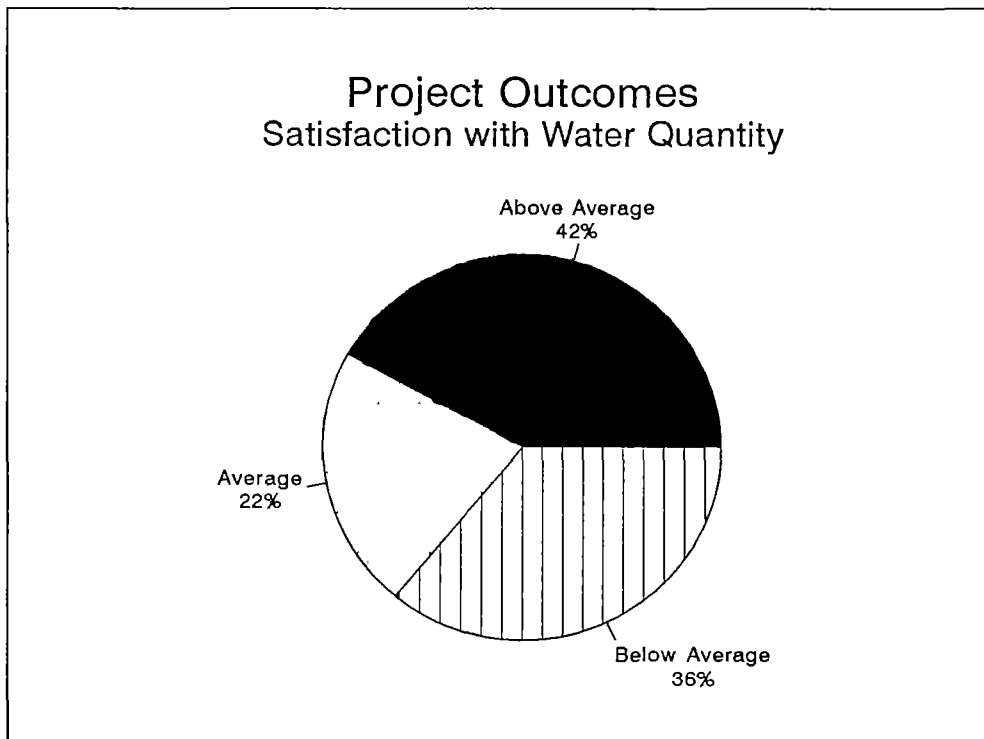


Figure 6.0: Project Outcomes

A range of project specific outcomes have already been discussed in Chapter 3. The quantity of water is a visible and measurable indicator of the project's performance -- subsumed behind this indicator is the entire range of choice and management variables, ie, appropriate source selection, reliable distribution networks, proper installation, repair and maintenance, adequate bill collection etc. In Figure 6.0, the indicator scale illustrates that 42% of the respondents were very satisfied with the availability of water, while 22% were satisfied and 36% were dissatisfied.

81% of those respondents in the average bracket were of the opinion that the water quantity available was adequate to meet household needs. The remaining felt that they were satisfied because their needs were "partially" being met by the water supply, as compared to the time before the advent of the piped system. The reasons for dissatisfaction included the following: the first major reason, 88% of the cases in this bracket felt that water availability was inequitable across the village, ie, certain areas of the village were receiving water while others were not. Problems with technology choice were also seen as a major source of dissatisfaction and included small water tanks, improper pipe sizes, lack of valves and in some cases power outages.

## 6.2 MANAGEMENT TASK FUNCTION INDICATORS:

The complexity of the management task function was simplified by looking at two concrete sets of activities, ie the process of repair (refer to Chapter 3) and the process of fee payment (including the amount of fee). The overall performance as can be seen in Figure 6.1 was 41% above average, 30% average and 29% below average.

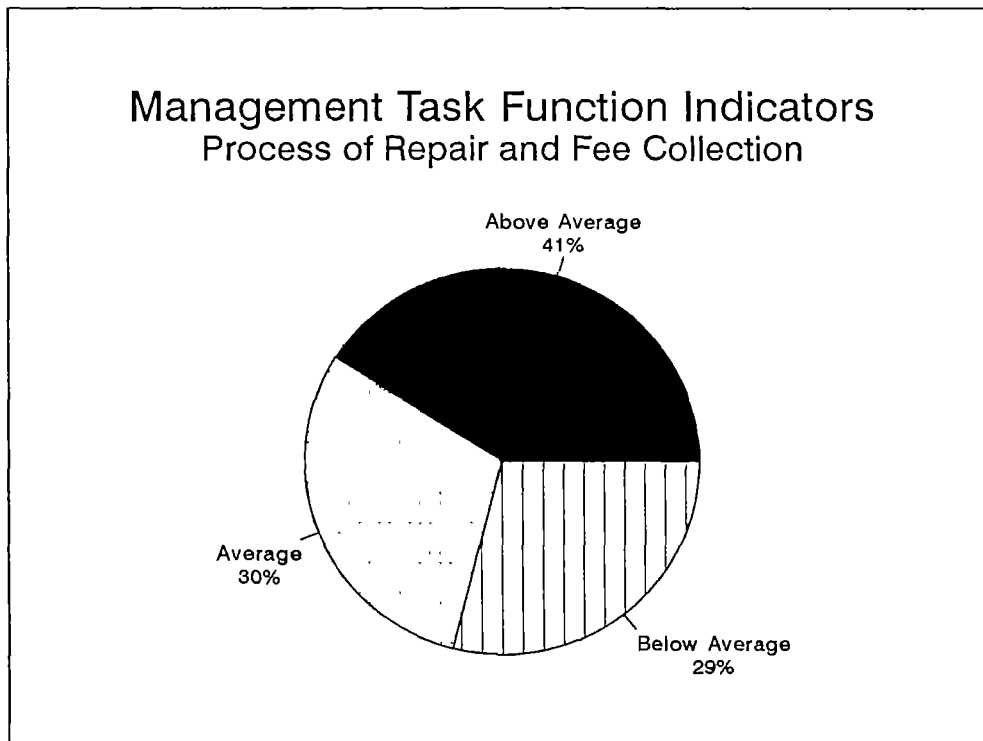


Figure 6.1: Management Task Function Indicators

For the repair indicator, the high ranking (29%) was attributed to the following reasons: the job for maintenance was clearly the responsibility of the operator and immediate repair was undertaken whenever a fault arose. Justification for average ranking included the following main reasons: “informal” repair committees were functioning to take care of spatial problems in the system, however repair was undertaken at the discretion of villagers’ time availability. Sharing of responsibility between Water Committee members was also linked to efficient repair of the system. Where communities were willing to contribute to the repairs (if funds were not available) this was also seen to support the repair function. Common factors that hindered repair included no proper system of repair, nepotism (repair was only undertaken if the committee member/elected representative was not receiving water), when malfunctioning sections of the system like leaking pipes etc were never repaired, when the Water Committee kept increasing the tariff to meet repair costs and proper repair was not conducted etc

The existing options and systems of collection were seen to be directly linked to performance in the area of fee collection. Most communities preferred house to house collection of bills as opposed to having to submit the bill in a bank (especially if it meant travelling to another village) However, accountability and the maintenance of records, the provision of receipts etc were all seen as positive indicators. The frequency of the bill, ie whether it was quarterly or annual was important in certain areas, like Mirpur and Kotli. The amount of the bill was a major source of contention and resulted in negative rating. The poor payment record of the influentials, was also putting the credibility of the bill system into question.

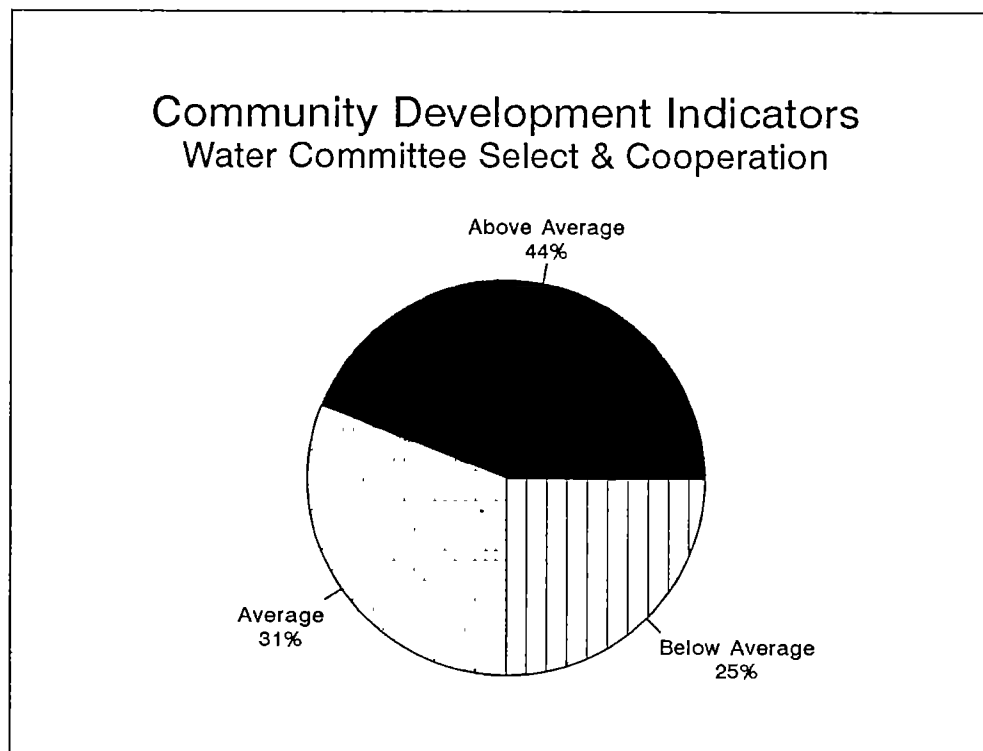
### 6.3 COMMUNITY DEVELOPMENT INDICATORS:

The spectrum of measuring community development is wide, varied and freestyle, however, two very simple concepts were used, with overall rankings of above average 44%, average 31% and below average 25% (See Figure 6.2). As mentioned in the previous chapter the process of selecting members of Water Committees is integral to the representation, the accountability and the acceptability of the Water Committee. Interestingly enough a majority of the respondents (48%) felt that they were very satisfied with the selection process. Reasons for satisfaction included the fact that villagers felt that they had been included in the process of selection of the members (88% of the total respondents in this category). Furthermore, where the selection was not based on political influences, the communities were more liable to be satisfied with the outcomes. Another variable of satisfaction was adequate *biraderi*<sup>10</sup> representation (sometimes based on *mohallas*<sup>11</sup>). The existence of rich and poor members was also seen to be a positive factor. The formality and informality, the frequency and in-frequency of meetings were all seen as a way of measuring the satisfaction with the committee’s members (satisfaction with members was low if they were only meeting when a problem arose). Where elected representatives were involved in member selection, in other words were seen to dominate the process, the satisfaction with the member selection was low.

The ability of working together, of cooperating over water problems, can be viewed in a number of different ways. The basic premise involves identifying prerequisite attributes for

<sup>10</sup> Biraderi literally means tribe or clan.

<sup>11</sup> Mohallas can be loosely defined street clusters within a village.



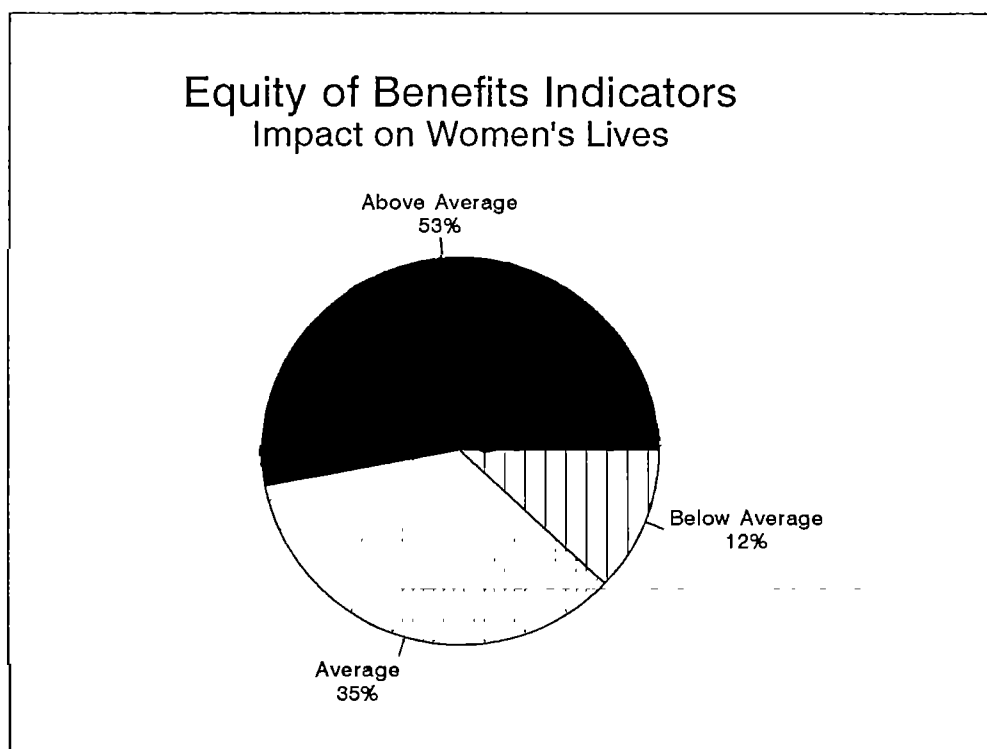
**Figure 6.2: Community Development Indicators**

community development, ie, whether it is necessary for a community to demonstrate the ability of working together, in order that community participation is successful or the water supply project functions properly. What is the potential link between the existing set of community attributes and maturity of existing community organisations, like Water Committees? In 40% of the cases the ability to work together was ranked as above average, 29% ranked it as average and 31% as below average. Positive factors were seen to be cooperation with the Water Committee and the operator over bill payment and water timings, the openness to provide feedback and share opinion with each other over water related issues, the lack of political rivalry. However, it is interesting to note that the role of cooperation was seen as secondary, ie, in most cases respondents perceived that cooperation implied accepting the decisions of the Water Committee or of those running the water supply system. This supports the top-down delivery measures being exercised by agencies particularly in Northern Punjab but also to a much lesser degree in AJK and Mirpur. Cooperation was therefore seen as a “conflict avoidance” strategy as opposed to a “conflict resolution” strategy. Lack of cooperation or poor performance in this case was viewed in terms of irregularity in bill payment, poor enforcement of regulations, lack of direct involvement in water supply related issues.

#### **6.4 EQUITY OF BENEFITS INDICATORS:**

One indicator was used to understand sharing of benefits, ie, the impact on women’s lives as a result of improved water supply systems. It is a well established fact that women

carry the main burden of transporting water and for managing the household level water consumption and for influencing storage practices etc. In AJK and Mirpur, women on average were spending 3-5 hours daily on water collection (this figure was similar in Northern Punjab). However, the quality and reliability of the service will determine the final “relief” of women’s burden with respect to water collection tasks. In Figure 6.3, the following rankings were given, 53% were ranked above average, 35% ranked average and 12% ranked below average. In terms of comparison with the other indicators, the impact on women’s lives has been extremely positive. The reasons for the high ranking were the following:



**Figure 6.3: Equity of Benefit Indicators**

the manifestations of time savings included spending less time on household chores, allocating more time to child care and increasing leisure, an indirect advantage noted was the release of young girls from such chores so they could pursue their education. The service level was also viewed as a positive indicator, ie, with piped water available in the houses, women were seen to benefit most for they did not have to leave the environs of the house and could now perform all household chores (like washing clothes) at home. Direct health benefits including the physical strain of carrying water (usually on their heads), increased incidence of accidents during pregnancy etc, were all quantified. Children’s health in terms of better hygiene practices and personal cleanliness was also listed as a major reason for the “positive” impact. The unreliability of the system (ie breakdowns in the system) and the inadequacy of water quantity, which made it imperative for women to continue collecting water from other sources to meet household needs, were justifications for the low ranking. Overall, however in most cases the “positives” were seen to outweigh the “negatives” with respect to the change in women’s lives

## 6.5 CONCLUSION:

A brief look at the overall ranking shows that with respect to the above mentioned set of indicators, the schemes are ranked as performing between the average and above average scale. However, in 28% of the cases the schemes were performing below average.

Indicator	Above Average	Average	Below Average
Satisfaction with water quantity	22%	42%	36%
Process of Repair	29%	34%	37%
Process of Fee payment	52%	26%	22%
Process of Water Committee selection	48%	33%	19%
Ability of working together	40%	29%	31%
Impact on Women's lives	53%	35%	12%
Overall Ranking	39%	33%	28%

**Table 6.0: Water Supply Rating Scale**

The areas that require improvement are the following:

- 6.5.1** To improve the performance of water projects with respect to the quantity of water more attention needs to be paid to technology choice (in consultation with communities) and to the equitable sharing of benefits within the village.
- 6.5.2** The Management Indicators like bill collection and repair systems need to be more formalised, more accountable and in accordance with the needs of the community. There is a need for role responsiveness and clarity within the spectrum of water project management, ie, those responsible for repairs should also be accountable to the community
- 6.5.3** The maturity index of the community needs to be enhanced by a less top down/directive approach being adopted at the field level and by a more egalitarian Water Committee selection process.
- 6.5.4** The impact on women's lives is positive and can be improved by their direct involvement in selecting service levels and by improving the reliability of the system.



# **Recommendations**



# Recommendations

---

The previous chapters have highlighted the dilemmas, paradoxes and experiences of developments in the water sector in AJK and Northern Northern Punjab. Based on this analysis certain lessons can be derived, that will be important for the future sustainability of water supply projects.

## IMPLICATIONS FOR POLICY

- 1 A policy environment, which is transparent and consistent is essential for creating effective delivery mechanisms. The consistency in policy in AJK in terms of community "financial" contribution and their role in O&M, has contributed towards creating functioning schemes. Conflicting policy in Northern Punjab, to the contrary has resulted in a larger number of non-functioning schemes and defunct community organisations.

## IMPLICATIONS FOR HUMAN RESOURCE DEVELOPMENT

- 2 However, from the above analysis it is also clear that community contribution in terms of "financial" input is not an adequate means to achieve long term community development. Alternatively, training and hrd (both technical and non-technical) needs to be an integral part of the process, to ensure autonomy in decision making, cost internalisation and improved quality of O&M, at the level of the community.
- 3 As mentioned, the interactive process between the agency and the community, the community-agency fit, will determine the ultimate community level outcomes and their longevity and appropriateness. There is a need for re-orienting frontline extension workers through training in community development. However, no such attempt can ever be successful in isolation -- within the forum of the agencies, a common understanding of the principles of community development needs to be promoted.
- 4 Attention needs to be paid to the existing gender balance of extension workers with in the staff profile of the implementing agencies. In the future, employment of females should be promoted at all levels, in particular at the level of the extension worker, to ensure that the needs of rural women are addressed adequately

## **IMPLICATIONS FOR PROJECT IMPLEMENTATION**

- 5 Community development requires patience, flexibility and the need for concessionary targets. In the case of AJK and Mirpur from the approval stages to the construction and the O&M, lags have been demonstrated. Any project cycle needs to visibly account for these lags in order to achieve sustainability
- 6 The timing of Water Committee formation is important for determining the final intensity of community development. The case of both AJK and Northern Punjab has shown that even a 6 month lag in the formation of the Water Committee can lead to lack of effort and poor intensity of involvement with time. In Mirpur this was not demonstrated and in a number of cases (See Case Study 5) the Water Committees have graduated into becoming peri-urban utilities.
- 7 Water Committee performance as a viable community organisation has not been very positive. Water Committees as they are constituted perform within an extremely narrow spectrum. With time member enthusiasm and incentives begin to fade. There is need for building sound incentive structures for participation through direct remuneration to Water Committee members. With time, there may also be a need for linking the Water Committee to developments and changes in other sectors (as noted in 40% of the cases in Mirpur Water Committees were undertaking developments in other areas), in other words there is a need for creating opportunities with time for "broadening" the mandate of committees.
- 8 The process of selecting Water Committee members and of establishing the water fee etc needs to be open and egalitarian with very little official involvement. This will ensure accountability and will reduce the incidence of fee defaulters, as can be seen in AJK and Mirpur.

## **IMPLICATIONS FOR TECHNOLOGY CHOICE AND WOMEN'S INVOLVEMENT**

- 9 Where communities are given the choice, they will go for the least costly option, as can be seen in the operating of schemes in Mirpur and the high levels of consequent satisfaction with water availability. To achieve such efficient outcomes, *ceteris paribus*, the role of communities in technology selection should be enhanced
- 10 The role of women in the management of water supply schemes has been negligible, however it has been established that the impact on their lives is extremely positive. To further strengthen these linkages, there is a need for determining mechanisms that will ensure greater female involvement in the planning, design and siting stages. Furthermore, innovative integrated strategies for enhancing the potential of women, ie linking developments in water to other sectors (credit and income generation) etc, should be developed.

11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100

