

IPP501
v. 3

SOCIAL ASSESSMENT REPORT

**ACCELERATED DEVELOPMENT OF MINOR IRRIGATION PROJECT,
WEST BENGAL**

Final Report

September 2010

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Abbreviations

ADMIP	-	Accelerated Development of Minor Irrigation Project
BC	-	Beneficiary Committee
BDO	-	Block Development Officer
BCWD	-	Backward Classes Welfare Department
CI	-	Cropping Intensity
CCA	-	Culturable Command Area
DTW	-	Deep Tube well
DL & LRO	-	District Land & Land Reform Officer
DPD	-	District Project Directorate
DM	-	District Magistrate
EC	-	Executive Committee
FGD	-	Focused Group Discussion
GOWB	-	Government of West Bengal
GP	-	Gram Panchayat
GDI	-	Gender Development Index
GDP	-	Gross Domestic Product
HDTW	-	Heavy Duty Tube well
HDI	-	Human Development Index
IBRD	-	International Bank for Rural Development
IDA	-	International Development Association
IDGI	-	In Depth Group Interview
IPM	-	Integrated Pest Management
INM	-	Integrated Nutrient Management
LDTW	-	Light Duty Tube well
MI	-	Minor Irrigation
MDTW	-	Medium Duty Tube well
MOU	-	Memorandum of Understanding
MLE	-	Monitoring, Learning and Evaluation

NGO	-	Non-Government Organization
OP	-	Operational Procedure
O&M	-	Operation and Maintenance
OMM	-	Operation, Maintenance and Management
PRI	-	Panchyati Raj Institution
PS	-	Panchayat Samiti
PW	-	Para Worker
PDW	-	Pump Dug well
PRDD	-	Panchayat and Rural Development Department
ROG	-	Redressal of Grievances
RLI	-	River Lift Irrigation
SO	-	Support Organization
SICO	-	Self Initiated Community Organizer
ST	-	Scheduled Tribe
SC	-	Scheduled Caste
SDMP	-	Scheme Development & Management Plan
SHG	-	Self Help Group
SCA	-	Spout Command Area
SSC	-	Spout Sub-Committee
STW	-	Shallow Tube well
SFMIS	-	Surface Flow Minor Irrigation Scheme
TDP	-	Tribal Development Plan
TC	-	Territorial Constituency
TOR	-	Terms of Reference
WUA	-	Water Users Association
WDS	-	Water Detention Structure
WRI&DD	-	Water Resources Investigation and Development Department
WRDD	-	Water Resources Development Directorate
ZP	-	Zilla Parishad

INTRODUCTION

1.1 GENERAL

West Bengal is on the Eastern part of India, stretching from the Himalayas in the North to the Bay of Bengal in the South. The State has a total area of 88,752 sq km which is 2.7% of the country's area and a population of 80,176,197 which is 7.86% of the population of India. The present population density being 903 per sq.km is the highest in the country.

1.1.1 Administrative Units

The State is divided into three Administrative Divisions and 19 Administrative Districts including Kolkata District, the State capital. The districts of Darjeeling, Jalpaiguri, Coochbehar, Uttar Dinajpur, Dakshin Dinajpur and Malda comes under Jalpaiguri Division while the districts of Murshidabad, Nadia, Howrah, South 24 Parganas and North 24 Parganas and Kolkata (state capital) falls under Presidency Division. The Burdwan Division has its jurisdiction over the districts of Hooghly, Burdhan, Birbhum, Bankura, Paschim Medinipur, Purba Medinipur and Purulia

The Darjeeling Himalayan hill region in the northern extreme of the state belongs to the Eastern Himalayas. The narrow terai region separates the himalayan region from the plains, which in turn transits into the Ganga Delta towards the South. A small coastal region is on the extreme south, while the Sundarban mangrove forests forms a remarkable geographical landmark at the Gangetic delta. The Administrative map of West Bengal is given in **Plate 1**.

1.2 PROJECT

The Government of West Bengal (GoWB) has initiated the Accelerated Development of Minor Irrigation Project (ADMI) with financial assistance from the World Bank. The project development objective is to enhance agricultural production of small and marginal farmers. This would be achieved through accelerated development of minor irrigation schemes, strengthening community-based irrigation management, and support to agricultural development, including provision of agricultural services, encouraging diversification and use of new technologies, facilitating market access, and creating income generating opportunity. The total project cost is estimated at US\$300 million, to be financed through a mix of IBRD loan and IDA Credit of US\$125 million each (about 83.3 percent of the project costs), with the balance to be financed by the Government. The investments will focus on investments targeted towards: (i) strengthening community-based institutions to assume responsibilities for the management of minor irrigation schemes created under the project; (ii) development of surface and ground water based irrigation systems in 18 of the 19 districts of West Bengal; and (iii) agricultural development and providing improved support services to farmers, including support for enhancing marketability of agricultural produce. Overall, the project is expected to bring 138,901 ha of additional agricultural lands under assured irrigation through developing 4660 Minor Irrigation structures spread over 18 districts.

1.3 PROJECT BACKGROUND

The state of West Bengal is mainly dependant on Agriculture. Minor Irrigation plays a major role in development of agriculture in increasing agricultural productivity, ensuring food security and enhancing rural income and livelihood options there by reducing poverty. Farmers of the state are also aware of it. With their active participation, the cropping intensity has increased from 155% in 1991-92 to 184% in 2007-08 in the state. Considering these aspects, the Government of West Bengal formulated a programme, Accelerated Development of Minor Irrigation Project (ADMIP), to expand irrigation facilities with focus on community managed minor irrigation systems. It is proposed to be achieved by developing various minor irrigation schemes with individual command area ranging from 5 ha to 200 ha by sustainable development and management of surface and ground water resources.

Minor Irrigation schemes sustain the interest of wide range of stake holders at various levels starting from different social groups in the village where these are installed. Past experiences indicate that while many schemes run efficiently, many other schemes do not yield expected result and or remain idle due to reasons other than technical in nature. It is important that the schemes should be socially viable and acceptable though it is technically feasible. The project provides to explore the social viability and acceptability of various schemes under it based on the clear understanding of relationships among the various social groups including socially vulnerable groups, particularly SC / ST communities and women and level of their participation.

In rural West Bengal, agricultural and allied activities cannot be thought of without women participation. Right from sowing of paddy, a principal crop, to its weeding and harvesting in the field and storing of crops including animal husbandry in the domestic front, every where women play a significant role. But in the planning of such facilities their requirements and expectations are not mostly considered.

Scheduled Castes and Scheduled Tribes form a significant part of the population of the state. Growth rate in the development of Agriculture and Minor Irrigation have been significant but these sections of the communities continue to be poorer. Usually Scheduled Tribes settlements are away from that of other communities in a village. They mainly live on Agriculture and Forest. In the matter of Minor Irrigation development their expectations are required to be given more importance.

In the light of the above aspects, a Social Assessment study has been taken up to assess the existing social situation in the rural areas of the state through Minor irrigation schemes in Villages of different Agro-Climatic Zones. The aim is to complete the project with the understandings from the studies to ensure over all social development.

The study also provides inputs on formulating a Tribal development Plan for their participation in the project. The study would also provide inputs on the participatory implementation of the project at the grass root level, particularly the Panchayat Raj Institutions.

II. Social Assessment Study

2.1 OBJECTIVES OF THE PROJECT

The objective of proposed Social Assessment is to identify the likely social impact in consultation with stakeholders, ensure that the benefits of the proposed project are distributed equitably and sustainably and that adverse impacts, if any, are identified and mitigation measures incorporated in the project design. The specific objectives of the Social Assessment are:

- ⌚ To carry out a socio-economic, cultural and political / institutional analysis to identify potential social impacts of the proposed development of the project.
- ⌚ To identify principal stakeholders, carryout consultations that are well documented and develop institutional framework for transparent and participatory implementation.
- ⌚ Screen the proposed investments and assess whether there will be any adverse social impacts and to determine the applicability of policies relating to involuntary resettlement and Indigenous Peoples policies and
- ⌚ To ensure that results of the Social Assessment provide inputs for participatory implementation.

2.2 IDENTIFICATION AND CONSULTATION WITH STAKEHOLDERS were conducted on matters relating to:

- Assessment of potential, social and economic impacts of project design
- Identify key social issues and risk relevant to the project
- Development of consultation framework for participatory implementations
- Developed criteria for social screening of the sub-project proposals.

The consultation process led to detailed stakeholders analysis outlining interests, expectations, potentials and implications for project design. These consultations and stakeholder analysis were carried out to provide specific recommendation to avoid/minimize high social risk (e.g. activities where it is advisable not to proceed), specify the projects social development outcomes, criteria for screening and selection of sub-projects, mechanisms to ensure demand responsiveness and promote community driven developments.

2.3 IDENTIFICATION OF VULNERABLE GROUPS AND THE ROLE OF WOMEN IN THE PROPOSED PROJECT and specific provisions to ensure their proactive participation in the decision making process in the community management of Minor Irrigation systems and associated income generation activities. Vulnerable groups (e.g. women, tribal and landless) within a community and also the tail end farmers are traditionally marginalized from the local decision making for a variety of complex reasons (e.g. caste dynamics, local perspectives on gender based division of labour etc). The consultant examined the issues concerning these vulnerable sections, and recommended strategy in which decision-making was more transparent and vulnerable groups are given more voice in planning, implementation and monitoring of various activities under the project.

2.4 ASSESSMENT OF IMPACTS ON TRIBAL POPULATION AND THE POSSIBLE NEED TO DEVELOP TRIBAL DEVELOPMENT PLAN: The project covers some

of the Scheduled Tribes (ST) areas of the state. Consultations were carried out with Scheduled Tribe population in the project area.

- 2.5 INSTITUTIONAL ASSESSMENT AND DEVELOPMENT OF PARTICIPATION FRAMEWORK:** The objective of the project is to ensure a long-term sustainability and equitable flow of benefits. So ownership and empowerment of beneficiary groups is a key to success. The SA was conducted, in consultation with local communities, exploring suitable institutional and process mechanisms for enhancing ownership and empowerment of beneficiaries.
- 2.6 ASSESSMENT OF PHYSICAL AND / OR ECONOMIC DISPLACEMENT CAUSED BY THE PROJECT AND THE development of Resettlement Action Plan (RAP):** The project will use approaches that minimize, if not avoid, involuntary land acquisition. The SA was conducted to identify likely physical and/or economical displacement as a result of project interventions. The MI projects do not require such land acquisition as farmers come forward to part with their land as and where required
- 2.7 LEGISLATIVE AND REGULATORY CONSIDERATION:** The consultants undertook a review of all relevant national and state legislation and regulations pertinent to the project as well as broader policy and reform context within which the project comes. SA reviewed the aspects of all the legal and regulatory systems to facilitate programme implementation.

The results of the social assessment study are presented in the following sections of the document:-

- 🕒 **Section-I: Introduction**
- 🕒 **Section-II: Social Assessment Study**
- 🕒 **Section-III: Study Methodology**
- 🕒 **Section-IV: Socio-Economic and Cultural Profile of West Bengal**
- 🕒 **Section-V: Minor Irrigation Systems in West Bengal: Challenges and Opportunities**
- 🕒 **Section-VI: Existing Governance and Operational Arrangements in Respect of Minor Irrigation Development**
- 🕒 **Section-VII: Stakeholder Analysis**
- 🕒 **Section-VIII: Lands for Minor Irrigation Facilities**
- 🕒 **Section-IX: Issues Significant for the Project**
- 🕒 **Section-X: Design Elements to approach the Issues**
- 🕒 **Section-XI: Pilot Study**
- 🕒 **Section-XII: Photo Gallery**

III. STUDY METHODOLOGY

3.1 GENERAL

Social Assessment (SA) of any project is a technique to identify the best possible implementation process of the project by analyzing the potential strength and weaknesses of the proposed project through a participatory process involving all stakeholders and enhance the success rate of the project to its optimum and thereby minimize or mitigate risks and adverse effects on the people and area. It also gives direction for project's future sustainability and ownership by the beneficiaries. The SA tries to evolve a process of people's participation at every step of the project since its designing to long term maintenance, management and sustainability. In the process it gives birth to community functioning and ways and means of conflict resolutions that may arise during its implementation.

The methodology includes collection of both primary and secondary information. The primary data is collected through field surveys carried out in selected sample Minor Irrigation schemes in different Agro-climatic regions of the state. In addition to the survey of the schemes, concerned village surveys and some household surveys were also carried out to obtain characteristics of minor irrigation practices. The secondary data in the information collected from various agencies and is in the form of documents, project reports, census etc.

3.2 SAMPLE MINOR IRRIGATION SCHEMES AND VILLAGES

The state of West Bengal is spread over 6 agro-climatic regions. It has 18 districts with 339 blocks excluding the city of Kolkata. It is pertinent to select sample blocks in each district for field survey. The ADMIP Directorate under the Water Resources Investigation and Development Department, Govt. of West Bengal provided a preliminary list of 60 blocks covering all the 18 districts of the state to take up field survey in one scheme in each of those blocks for the Social Assessment study under the project. District wise representative list of sample blocks in different Agro-climatic regions, soil Groups and Hydro geological status are given in **Table 3.1**. The Administrative map and Agro-climatic maps are given in **Plate 1 & 2** respectively.

Table 3.1
District Wise list of representative blocks in different agro-climatic regions.

Sl. No.	District	Agro-Climatic Region	Soil Group	Hydrological Status of the Block	Block or part of Block covered by respective Zones	No. of Schemes
1	Coochbehar	Terai Teesta Flood Plain	Acidic soils / Sandy Loam	Recent to subrecent Alluvium	Coochbehar - I	1
				Recent to subrecent Alluvium	Tufanganj - II	1
				Recent to subrecent Alluvium	Holdibari	1
				Total No. of Schemes:		3
2	Darjeeling	Terai Teesta Flood Plain	Acidic soils / Sandy Loam	Piedmont Zone	Matigara	1
				Total No. of Schemes:		1
3	Jalpaiguri	Hill Zone	Acidic soils / Sandy Loam	Piedmont Zone	Nagarkata	1
				Piedmont Zone	Madari Hat	1
		Terai Teesta Flood Plain		Recent to Subrecent Alluvium	Dhupguri	1
				Recent to Subrecent Alluvium	Alipurdwar II	1
				Recent to Subrecent Alluvium	Falakat	1
		Total No. of Schemes:		5		
4	Uttar Dinajpur	Terai Teesta Flood Plain	Acidic soils / Sandy Loam	Recent to Subrecent Alluvium	Islampur	1
				Gangetic Alluvial Zone	Recent to Subrecent Alluvium	Karandighi
		Recent to Subrecent Alluvium			Hemtabad	1
		Recent to Subrecent Alluvium			Itahar (P)	1
		Total No of Schemes:		4		
5	Dakshin Dinajpur	Terai Teesta Flood Plain	Acidic soils/Sandy Loam	Older Alluvium	Banshihari	1
				Older Alluvium	Tapan	1
		Gangetic Alluvial Zone		Younger Alluvium	Gangarampur	1
				Younger Alluvium	Balurghat	1
				Total No of Schemes:		4
6	Malda	Vindhya Alluvial	Alluvial/ Sandy loam/	Older Alluvium	Bamangola	1
				Older Alluvium	Gajol	1

Sl. No.	District	Agro-Climatic Region	Soil Group	Hydrological Status of the Block	Block or part of Block covered by respective Zones	No. of Schemes
		Zone	Loamy clay	Recent to Subrecent Alluvium	Harishchandrapur I	1
		Gangetic Alluvial Zone	Alluvial/Sandy loam/Loamy clay	Recent to Subrecent Alluvium	Ratua II	1
				Recent to Subrecent Alluvium	Kaliachak I	1
		Total No of Schemes:				
7	Murshidabad	Vindhya Alluvial Zone	Alluvial/Sandy loam/Loamy clay	Older Alluvium	Sagardighi	1
		Gangetic Alluvial Zone	Alluvial/Sandy Loam	Recent to Subrecent Alluvium	Lalgola	1
				Recent to Subrecent Alluvium	Beldanga I	1
				Recent to Subrecent Alluvium	Raninagar I	1
		Total No of Schemes:				
8	Nadia	Gangetic Alluvial Zone	Alluvial / Sandy Loam	Recent to Subrecent Alluvium	Karimpur I	1
				Recent to Subrecent Alluvium	Nakashipara	1
				Younger Alluvium	Haringhata	1
		Total No of Schemes:				
9	24 Parganas (N)	Gangetic Alluvial Zone	Alluvial/Sandy Loam	Younger Alluvium	Bagdah	1
				Younger Alluvium	Habra I	1
				Younger Alluvium	Barrackpore I	1
		Coastal Saline Zone	Coastal/Saline/Loam/Clay	Coastal Saline Tract	Minakhan	1
				Coastal Saline Tract	Sandekhali II	1
		Total No of Schemes:				
10	24 Parganas (S)	Coastal Saline Zone	Coastal/Saline/Loam/Clay	Coastal Saline Tract	Kultali	1
				Total No of Schemes:		
11	Howrah	Gangetic Alluvial Zone	Alluvial/Sandy Loam	Younger Alluvium	Amta I	1
				Total No of Schemes:		
12	Hooghly	Gangetic Alluvial	Alluvial/Sandy Loam	Recent to Subrecent Alluvium	Panndua	1

Sl. No.	District	Agro-Climatic Region	Soil Group	Hydrological Status of the Block	Block or part of Block covered by respective Zones	No. of Schemes
		Alluvial Zone		Recent to Subrecent Alluvium	Chinsura-Mogra	1
				Younger Alluvium	Chanditala I	1
				Younger Alluvium	Goghat I	1
				Younger Alluvium	Khanakul II	1
				Total No of Schemes:		
13	Burdwan	Gangetic Alluvial Zone	Alluvial/Sandy Loam	Younger Alluvium	Ketugram II	1
				Coal Belt	Faridpur-Durgapur	1
				Total No of Schemes:		
14	Birbhum	Vindhya Alluvial Zone	Alluvial / Sandy loam / Loamy clay	Younger Alluvium	Bolpur-Santiniketan	1
				Marginal Strips & Older Alluvium	Rampurhat I	1
		Undulating Red Lateritic Zone	Weathered Laterite / moorum /Sandy Loam	Marginal Strips & Older Alluvium	Nalhati II	1
				Total No of Schemes:		
15	Paschim Medinipur	Vindhya Alluvial Zone	Alluvial / Sandy loam / Loamy clay	Younger Alluvium	Keshpur	1
				Older Alluvium & Lateritic	Garbeta I	1
				Younger Alluvium	Debra	1
		Undulating Red Lateritic Zone	Weathered Lateritic/moorum/Sandy Loam	Older Alluvium, Lateritic, Marginal Strip	Jhagram	1
				Hard Rock	Binpur I	1
				Total No of Schemes:		
16	Purba Medinipur	Vindhya Alluvial Zone	Alluvial/Sandy loam/Loamy clay	Younger Alluvium	Potashpur II	1
				Coastal & Saline Tract	Tamluk	1
				Coastal & Saline Tract	Contai I	1
				Total No of Schemes:		
17	Bankura	Vindhya Alluvial Zone	Alluvial/Sandy loam/Loamy clay	Older Alluvium & Lateritic	Onda	1
				Younger Alluvium	Kotulpur	1
		Undulating Red Lateritic Zone	Weathered Lateritic/moorum/Sandy Loam	Hard Rock	Chhatna	1
				Hard Rock	Ranibandh	1
				Total No of Schemes:		

Sl. No.	District	Agro-Climatic Region	Soil Group	Hydrological Status of the Block	Block or part of Block covered by respective Zones	No. of Schemes
18	Purulia	Undulating Red Lateritic Zone	Weathered Lateritic/moorum/Sandy Loam	Hard Rock	Bagmundi	1
				Hard Rock	Hura	1
				Total No of Schemes:		2

TOTAL IN ALL DISTRICTS 60

Accordingly, a list of 60 MI schemes were identified but the list does not adequately cover the SC/ST habitations. To provide adequate representation for SC/ST habitation and to ensure proper coverage of the sample, consultants and experts from World Bank have suggested inclusion of additional villages comprising of SC/ST habitations. Hence, 109 sample schemes in 89 Blocks covering of 18 districts of the state, representing all regions, including SC/ST habitations have been visited to have an overall glimpse of the beneficiaries, success of the schemes, changes in the economic scenario of the area, migration pattern, availability of other social infrastructures like education, health etc., opportunities and avenue of alternative income and other social issues like women's participations, planning and implementing process of the scheme, the ownership component of the scheme by beneficiary etc. The list of 109 MI Schemes visited by the Social Assessment Team is given in **Table 3.2**.

**Table 3.2
List of MI Scheme visited**

Sl. No.	Name of Districts	Name of M.I. Schemes	Type of Scheme	Maintenance
1.	Coochbehar	Dalua Dasgir Coochbehar-I	Major RLI	Department
		Monjarampur Tufangunj-II	PDW	Farmers
		Bosmansingh Haldibari	STW	Beneficiary
		Chilakhana / Tufangunj-I	MDTW	Beneficiary
		Dalua Dasgir Coochbehar-I	Major RLI	Department
		Monjarampur Tufangunj-II	PDW	Farmers
2	Jalpaiguri	Niranjanpara, Dhupguri	RLI	Beneficiary
		Kodal Kathi	STW	Beneficiary
		Jena Para, Kabirajpara, Sen Para I, II, III. Dholabari, Malbazar	STW Cluster	Beneficiary
		Debijhora Dhupguri	SFMI	Beneficiary
		Dakshin Bhuskadanga Maynaguri	Mini RLI	Beneficiary
		Lalitabari / Rajgunj	MDTW (Proposed)	
		Uttarmajgram / Mal	STW	Beneficiary
		Uttardangapara	STW (Proposed)	
		Kalabari / Nagrakata	Mini RLI	Farmers

Sl. No.	Name of Districts	Name of M.I. Schemes	Type of Scheme	Maintenance
		Mujnai Madarihat	WDS	Beneficiary
		Chaparerpar Alipurduar-II	STW	Beneficiary
		Deomali / Falakata	STW	Beneficiary
3	Darjeeling	Falash, Phansideyao	Mini RLI	Beneficiary
		Hatiram	RLI	Department
		Alokjhari / Kharibari	Sprinkler	Beneficiary
		Rajajhar / Naxalbari	PDG	Farmers
		Bandargach Phansidewa	RLI	Department
		Sukna / Matigara	WDS	Farmers
		4	Uttar Dinajpur	Fulatti, Kaliaganj
Aliganj Islampur	STW			Beneficiary
Haria Karandighi	INWB			Farmers
Jatapur Hemtabad	WHT			Farmers
Jamalpur Itahar	Major RLI			Department
5	Dakshin Dinajpur	Katapukur Bill (Lake), Gangarampur	Lift Irrigation from stored water.	Beneficiary
		Gouripara / Banshihari	STW	Beneficiary
		Jamalpur / Tapan	WHT	Farmers
		Paranpur / Balurghat	Major RLI	Department
6	Malda	Mandirpur, Old Malda	HDTW	Department
		Musadanga, Bhabanipur, Gajol	HDTW	Beneficiary
		Kanchamitha Khari	Canal Irrigation	Beneficiary
		Khushakhari(Maraghat), Bamongola	Canal Irrigation	Beneficiary
		Kahartta Harischandrapur -I	STW	Beneficiary
		Gobindopur / Ratua-II	Major RLI	Department
		Baliadanga Kalichak-I	STW	Beneficiary
		Atgama Gajol	SFMI	Farmers
		Bamangola Bamangola	SFMI	Farmers
		Kahartta Harischandrapur -I	STW	Beneficiary
7	Murshidabad	Ratanpur, Bendanga I	RLI, Major	Department Run
		Bhapta, Bendanga I	DTW	Department
		Dighirpar, Raninagar	RLI	Department
		Dasturhat, Sagardighi	RLI, Major	Department
		Basumati, Niamatpur, Lalgola	RLI	Department
8	Nadia	Bhomrapara Haringhata	RLI	Department
		Dahakula Karimpur-I	RLI Major	Department
		Uttar Bahirgachha Nakashipara	HDTW	Department
9	24 Parganas (North)	Deara, Malipota Bagda	RLI-Mini-II	Beneficiary
		Aira, Habra-I	HDTW	Department

Sl. No.	Name of Districts	Name of M.I. Schemes	Type of Scheme	Maintenance
		Mamudpur, Barrackpore-I	MDTW	Beneficiary
		Debitala, Minakhan	Canal Minor Irrigation	Beneficiary
		Patkulpota, Sandeshkhali	Canal Minor Irrigation	Ready for Handover
10	24 Parganas (South)	Alghara, Baruipur	MDTW	Department
		Kerolberia Bhangar-II	Major RLI	Department
		Godabar / Kultali	WHT	Farmers
11	Hooghly	Hatipukur, Masat, Chanditala-I	Water Harvesting Tank	Beneficiary
		Tarajit, Kotalpur, Khanakul-II	Medium RLI	Beneficiary
		Damodarpur, Goghat	Major RLI	Beneficiary
		Multi, Pandua	DTW	Department
			Multi, LDTW	
		Basna, Balaragh	Watershed Tank	Beneficiary
		Debanandapur, Chinsura	DTW	Department
12	Howrah	Ghoshpur, Amta	RLI, Major	Beneficiary
13	Purba Medinipur	Chakbhabani, Potashpur-II	DTW	Department
		Lochubad, Potashpur II	HDTW	Department
		Gobardhanpur, Potashpur II	LDTW	Department
		Aklabad, Egra-I	MDTW	Department
		Barakumarda, Potashpur II	HDTW	Department
		Sirkantha Kalagonda Tamluk - I	Major RLI	Department
		Raghunandanpur Contai - III	Major RLI	Beneficiary
14	Paschim Medinipur	Amrakuchi, Keshpur	MDTW	Department
		Sonadiha, Keshpur	MDTW	Department
		Paschim Dharasol, Debra	HDTW	Department
		Abdalipur, Debra	HDTW	Department
		Kamalapur, Medinipur	MDTW	Beneficiary
		Panchkhuri, Medinipur	MDTW	Department
		Velaijuri, Jhargram	WHT	Farmers
		Nutandihi, Binpur - I	WHT	Farmers
		Ghosalband, Garbeta - I	INWB	Farmers
		Velaijuri, Jhargram	WHT	Farmers
15	Birbhum	Gara, Dubrajpur	DTW, Minor	Department
		Ramnagar, Ilambazar	DTW	Department
		Kharui, Dubrajpur	DTW	Department
		Sarparajpur, Lavpur	RLI, Major	Beneficiary
		Laldaha, Srineketan	Mini RLI	Beneficiary
		Mahisadal / Bolpur-Srinikatan	RLI & STW	Department & Private

Sl. No.	Name of Districts	Name of M.I. Schemes	Type of Scheme	Maintenance
		Darpasil / Bolpur-Sriniketan	WDS & STW	Beneficiary & Private
		Dam Dama / Bolpur-Sriniketan	Surface flow Schemes	Farmers
		Amgachi Suri - I	Un irrigated	-
		Bhola / Nalhati - I	Dug Well	Govt.
		Kutubpur / Rampmhat - I	Major RLI	Department
		Mahisadal / Bolpur-Sriniketan	RLI & STW	Department & Private
16	Burdwan	Bharpeta, Memari I	HDTW	Department
		Shankarpur, Memari I	LDTW / HDTW	Beneficiary
		Chaupira / Memari-I	LDTW	Farmer
		Jot Chaitan / Memari-I	LDTW	Society
		Teora / Ketugram-II	Dugwell	Farmer
		Dhobani / Faridpur-Durgapur	WHT	Farmer
17	Bankura	Bonkathi, Bishnupur	Mini RLI	Beneficiary
		Hazrapukur, Bishnupur	MDTW	Department
		Parasia , Chhatna	RLI	Department
		Malpur, Bishnupur	HDTW	Department
		Radhamadhabpur, Bishnupur	DTC	Department
18	Purulia	Nildi, Raghunathpur	Major RLI	Department
		Solanchi	Major RLI	Department
		Belguma, Purulia	Dug Well	Beneficiary
		Jambad, Hura	SFMI	Farmers
		Kushumtikri Bagmundi	SFMI	Farmers
		Belguma, Purulia	Dug Well	Beneficiary
		Jambad, Hura	SFMI	Farmers
Total schemes visited = 109				

Map of West Bengal showing approximate location of the sample M.I. scheme is given in **Plate 3**.

3.3 SURVEY OF VILLAGE AND VISIT TO MI SCHEMES

MI Schemes were visited through participatory approaches such as group discussions with beneficiary farmers, walks in the command area, meetings with community level stake holders to assess benefits available from the existing schemes and likely benefits from the proposed schemes. The majority schemes were visited and surveys were carried out during November, 08 to February, 09 and again the remaining was covered in April, 2010.

3.3.1 Stages of Surveys

Survey of villages and visit to MI Schemes were conducted in 3 stages and are noted in brief below.

First Stage: On entering the village in which the sample scheme was situated, the team members met the Gram Panchayat (GP) Member and his / her representatives. They introduced themselves and the project. A brief presentation was made on the project parameters to elicit their issues and expectations on the project. In this informal meeting some detailed information about the village were gathered, particularly, Minor Irrigation scenario in the village based on both surface and ground water was assessed. Constraints, if any, on availability of surface water and ground water in lean months were also understood. The role of Gram Panchayet in the development of the village and its participation in the project were discussed.

Second Stage: In this stage, overall status of the village was gauged by conducting cross sectional look through different hamlet in the village. Different sub-groups were identified. Their habits, income level, education, general health and environment, cattle and other physical infrastructure were assessed through participatory discussions.

Third Stage: In this stage, command areas of the schemes were physically visited, discussions with beneficiary committees and also beneficiary farmers were held. Information on O&M, water rates, accounting systems, major problems both in respect of O&M and source of water were noted. Discussions with share croppers, agricultural labours, Self Help Groups were also held.

3.3.2 House Hold Survey:

House hold survey were carried out to collect information on the Socio-economic profile of general population and also to note minor irrigation practices adopted by them and their expectations for further development. The house hold survey was conducted in 2 districts covering 7 villages. Total house hold covered for the survey was 1211 of which 492 belonged to Scheduled Tribe community.

The surveys focused on occupational pattern, education, health, house conditions, employment, income, irrigation practices, cropping strategies during lean months etc.

3.4 CONSULTATIONS

3.4.1 State Level:

Consultations and meetings were held with policy making authorities and senior level officials of some line departments and corporations. Their inputs on the programmes under WBADMI project were noted and discussed. Such consultations and meetings were spread over the period of August, 08 – June, 2009. The list of officials consulted includes:

1. Principal Secretary and Engineer in Chief, Department of WRI&D
2. Chief Engineers, WRDD
3. Managing Director, WBSMIC Ltd.
4. Director, Agriculture
5. Officials of BCWD
6. Director, Agril. Marketing
7. Director, Horticulture
8. Director (Distribution), West Bengal State Electricity Distribution Co. Ltd.
9. Professors of Calcutta University
10. Project Director, WBADMIP
11. Officials of Animal Resources Department
12. Officials of Fisheries Department

13. Officials of Sericulture
14. Director, State Water Investigation Directorate (SWID)
15. Superintending Geologist, SWID

3.4.2 District Level Consultation:

In all the 18 districts consultations were held with District Level officials of some line departments and Zilla Parishad members. The salient features of the project were introduced to the Karmadhyakshyas of the Krishi Sech O Samabay Sthayee Samity in the Zilla Parishad (highest tier of the PRI in the district). All matters related with agriculture, Irrigation and Co-operatives in the Districts were discussed in this level and issues are settled. These inputs on the programmes under ADMI Project were noted and discussed apart from discussing with other officials in the districts. The Executive Engineers of both Agri-Irrigation and Agri-mechanical wings of the Water Resources Development Directorate (WRDD) and their Assistant Engineers and others, being the implementing authorities, were consulted from time to time. Such consultations, discussions and meetings were spread over 27.11.2008 to 13.04.2010. The list of officials consulted in the districts includes:

- Executive Engineer WRI&DD & SWID
- Principal Agriculture Officer
- District Magistrate
- District Fishery Officer
- Sabhadhipati and Mmbers of Zilla Parishad
- District Welfare Officer, BCWD
- Chief Medical Officer of Health
- NGO Functionaries
- District Officers of Agro Industries Corporation
- Divisional Engineers WBSEDCL
- Divisional Engineers, WBSMICL

Moreover, District level stake holders' meetings were organized at the district Head Quarters in Bankura and Jalpaiguri District (two of the tribal dominated districts of the state). The most important objective of the consultation was to assess community willingness towards O&M. Members of Beneficiary Committee, SHGS, Community based organizations and representatives of civil society and functionaries from ITDP, WRD Directorate, Agriculture, Fishery, Forest, Revenue etc. participated in the consultation during the meeting.

3.4.3 Block Level Consultations:

Panchayat Samity, the middle tier of the three tiers PRI, operates its activities at the block level. The Sabhapati of the Samity, its Executive officer, Agriculture Officer, Sub-Assistant Engineers in the BDO Office particularly of WRDD were consulted in the time span of December, 08 – March, 09. They were apprised of the elements of the ADMI Project. Their inputs were noted and discussed.

3.4.4 Village Level Consultation

Village level consultations were made in 109 villages covering all 18 districts of the state except Kolkata. In the village level consultation it is reflected that, the Pradhan of the Gram Panchyat co-ordinates the implementation of different Infrastructure Development

Programme including tribal areas. The tribal people express their views for their development in both financially and socially in this body.

IV. SOCIO-ECONOMIC AND CULTURAL PROFILE OF WEST BENGAL

4.1 SOCIO-ECONOMIC PROFILE OF THE STATE

4.1.1 Introduction

West Bengal is on the eastern bottleneck of India, stretching from the Himalayas in the north to the Bay of Bengal in the south. The Darjeeling Himalayan hill region in the northern extreme of state belong to the Eastern Himalayan. The narrow Terai region separates this region from the plains, which in turn transitions into the Ganges delta towards the south. The Rarh region intervenes between Ganges delta in the east and western plateau and high lands. A small coastal region is on the extreme south, while the Sundarbans mangrove forests form a remarkable geographical landmark at the Ganges delta.

The state is bounded by Latitude 21°31' North to 27°31' North and Longitude 85°45'20" East to 89°53' East. It is bordered by Nepal and Bangladesh and the states of Orissa, Jharkhand, Bihar, Sikkim and Assam in different directions. The Administrative map of West Bengal is given in **Plate 1**.

The state is divided into three Administrative Divisions and 19 Administrative Districts including Kolkata District, the state capital. The Districts of Darjeeling, Jalpaiguri, Coochbehar, Uttar and Dakshin Dinajpur and Malda comes under Jalpaiguri Division while the districts of Murshidabad, Nadia, Howrah, North & South 24 Parganas and Kolkata (state capital) falls under Presidency Division. The Burdwan Division has its jurisdiction over the districts of Hooghly, Burdwan, Birbhum, Bankura, Paschim and Purba Medinipur and Purulia.

The state is divided into 3 Agro-climatic Regions, viz, Eastern Himalayan Region (Zone-II), Lower Gangetic Plain Region (Zone-III) and Eastern Plateau and Hill Region (Zone VII) as classified by Planning Commission, Govt. of India.

4.1.1.1 Demographic Profile

As per 2001 Census, the total population of the state is 80.176 million when compared to 68.078 million in 1991 registering a decadal (1991-2001) growth rate of 17.8%. The density of population in the state is 903 persons per sq.km. in 2001, as against 767 in 1991 and 615 in 1981.

Out of total population of 80.176 million in 2001, rural population accounts for 57.748 millions contributing to 72% of the total population. The urban population is only 28% of the total population in 2001. The state witnessed an overall growth rate of 17.8% during 1991-2001 which is almost 17% below the national average growth rate of 21.34%. The growth rate of rural population in the same period was 21.5% which is almost 13% more than the national average rural population growth rate of 19% in 1991-2001. Table 4.1 presents the comparison of population growth in West Bengal and the country during the last decade.

Table 4.1: Comparison of Population Growth - India and West Bengal

Parameters	1991			2001	
		India	West Bengal	India	West Bengal
Total Population	Millions	838	68.078	1025	80.176

Rural Population	Millions	622	49.370	740	57.748
Population growth rate - Total	%	23.85	24.73	21.34	17.77
Population growth rate - Rural	%	20.01	23.00	19.00	16.97

Source: Primary Census Abstract Volume 1, West Bengal (Census of India, 2001)

4.1.1.2 Growth of Rural Population

The rural population as a percentage of the total population has been consistently declining. In 1901, the rural population was 88.50% of the total population. This had declined to 76.08% in 1951. The declining trend continued in the post-independence period and in 2001 is at 72% of the total population.

4.1.1.3 Sex Ratio

The important indicator for measuring the extent of gender equity at a given point of time is sex ratio. In 2001 census, the sex ratio of total population in the state has improved to 934 from 917 recorded in 1991. The ratio has improved both in rural and urban areas of the state during the decade. In rural areas it has increased from 940 to 950 while in urban areas it has increased from 858 to 893. Among the districts, the highest sex ratio has been recorded in Paschim Medinipur (961) while Howrah has the lowest sex ratio of 906 in 2001 census. District wise sex ratio is given in **Table 4.2**.

Table - 4.2: District wise sex ratio, West Bengal as per Census 2001

Sl. No.	District	Sex Ratio		Sl. No	District	Sex Ratio		Sl. No	District	Sex Ratio	
		1991	2001			1991	2001			1991	2001
1.	Darjeeling	913	937	8.	Birbhum	946	950	15.	Paschim Medinipur	939	947
2.	Jalpaiguri	927	942	9.	Burdwan	848	922	16.	Purba Medinipur	948	961
3.	Coochbehar	934	949	10.	Nadia	935	946	17.	Howrah	881	906
4.	U. Dinajpur	920	938	11.	24 Parganas (North)	907	926	18.	24 Parganas (South)	929	937
5.	D. Dinajpur	944	951	12.	Hooghly	917	947	19.	State	917	934
6.	Malda	938	948	13.	Bankura	951	952				
7.	Murshidabad	943	952	14.	Purulia	946	954				

Source: Census 2001 and 1991

The sex ratio among the scheduled castes population for the state has also increased from 931 in 1991 to 949 in 2001. Hooghly district has the highest sex ratio for the scheduled castes (977) whereas South 24 Parganas has the lowest (937) as per census 2001.

Among the scheduled Tribes population, the sex ratio has increased from 964 in 1991 to 982 in 2001. At the district level, the highest sex ratio of Scheduled Tribes population has been noted in Hooghly (1011) and Coochbehar with 917 has the lowest.

4.1.1.4 Birth and Death Rate

The Birth Rate of the state as per Report of Ministry of Health and Family Welfare, Govt. of India was 20.7 in 2000 as against the all India level of 25.8.

The Death Rate in the state as per the same report was 7.0 as against the all India level of 8.5.

The Birth and Death Rates of some states are given in **Table 4.3**.

Table - 4.3: Birth and Death Rate in selected states-2000

Sl. No.	States	Birth Rate / 1000	Death Rate / 1000
1.	India	25.8	8.5
2.	Andhra Pradesh	21.3	8.2
3.	Assam	26.9	9.6
4.	Bihar	31.9	8.8
5.	Gujarat	25.2	7.5
6.	Haryana	26.9	7.5
7.	Karnataka	22	7.8
8.	Kerala	17.9	6.4
9.	Madhya Pradesh	31.4	10.3
10.	Maharashtra	21	7.5
11.	Orissa	24.3	10.5
12.	Punjab	21.6	7.4
13.	Rajasthan	31.4	8.5
14.	Tamil Nadu	19.3	7.9
15.	Uttar Pradesh	32.8	10.3
16.	West Bengal	20.7	7

Source: Ministry of Health and Family Welfare, Govt. of India.

4.1.1.5 Profile of Scheduled Castes Population

The Scheduled Castes population of the state has increased from 16.1 million in 1991 to 18.5 million in 2001. In percentage terms it has decreased marginally from 23.6% in 1991 to 23.01% in 2001. Among the states and union territories, West Bengal has third highest population of scheduled castes in percentage terms.

Among the districts, highest proportion of Scheduled Castes population to total population in 2001 census has been recorded in Coochbehar district (50.1%) followed by Jalpaiguri (36.7%). Both in 1991 and 2001 Census, Coochbehar district has the highest proportion of Scheduled Castes population among all the districts of the country. The lowest percentage of Scheduled Castes population has been reported in Murshidabad (12%). Percentage of Scheduled Castes population is more than 10% in 2001 in all the districts except Kolkata.

4.1.1.6 Profile of Scheduled Tribes Population

The Scheduled Tribes population in the state has increased from 3.8 million in 1991 to 4.4 million in 2001 constituting 5.5% of the total population. Among the districts, Jalpaiguri has the highest proportion of 18.9% of Scheduled Tribes population, followed by Purulia (18.3%) and Dakshin Dinajpur (16.1%). Howrah has the lowest percentage of Scheduled Tribes population at 0.4%.

Comparison of SC/ST population in India and West Bengal is given in **Table 4.4**.

Table 4.4 : Comparison of SC and ST Population - India and West Bengal

Parameters	India	West Bengal
Population (SC + ST)	530,422,415	22,859,349
Population growth rate (Decadal)	19.08	15.07
Sex ratio	946	934
% of SC population (1991)	16.48	23.62
% of ST population (1991)	8.08	5.59
% of SC population (2001)		23.015
% of ST population (2001)		5.496

Source - Primary Census Abstract Volume 1, West Bengal (Census of India, 2001)

4.1.2 Economic Profile:

4.1.2.1 Work Participation Rate (WPR):

The work participation rate is defined as the proportion of total workers (i.e., main and marginal workers) to total population. In the state, 29.5 million population forming 36.8 percent of the population have been returned as workers in 2001 against 21.9 million (32.2 percent) in 1991. The state has, thus, recorded increase in the number as well as percentage of workers in 2001.

Among the districts, Bankura with 44.7 percent accounts for the highest overall work participation rate followed closely by Purulia 44.5 percent. South 24 Parganas with 32.5 percent has the lowest work participation rate in 2001 Census.

4.1.2.2 Male Female Work Participation Rate:

The overall male work participation rate at the state level is 54.0 percent. The corresponding percentages for the Scheduled Castes and Scheduled Tribes are 54.4 percent and 53.8 percent respectively. At the state level, 7.1 million females (18.3 percent) have been recorded as workers in 2001. The corresponding percentages of female workers in case of Scheduled Castes and Scheduled Tribes are 22.3 percent and 43.7 percent respectively. The female work participation rate has increased from 11.3 percent in 1991 to 18.3 percent in 2001. The difference in male – female work participation rates has marginally narrowed down from 40 percentage points in 1991 to 36.7 percentage points in 2001 Census.

4.1.2.3 Main and Marginal Workers

Out of the total workers in the state, 23 million accounting for 78.1 percent are main workers and 6.5 million (21.9 percent) are marginal workers. In absolute terms, the number of main workers has increased from 20.6 million in 1991 to 23.0 million in 2001. However, the proportion of main workers has decreased from 93.9 percent in 1991 to 78.1 percent in 2001. The sharp decline in the proportion of main workers is due to increase in the proportion of marginal workers which may be for improved netting of marginal workers in 2001. The decline is discernable in case of both male and female main workers. For males, it has declined from 98.6 percent to 87.1 percent and females from 70.8 percent to 49.7 percent.

The state has registered a considerable increase in number of marginal workers from 1.3 million in 1991 to 6.5 million in 2001. Overall the proportion of marginal workers among persons, males as well as females, has increased from 6.1 percent, 1.4 percent and 29.2 percent in 1991 to 21.9 percent, 12.9 percent and 50.3 percent in 2001 respectively. This may be attributed to a better coverage of paid or unpaid work in farm and family enterprises in 2001 Census.

In case of the Scheduled Castes, though absolute main workers have increased during 1991 to 2001, their proportion has declined from 31.1% to 28.7% in 2001. Among the Scheduled Castes males also, the percentage main workers has declined from 51.3% in 1991 to 46.1% in 2001. However, among females the proportion has increased from 9.4% to 10.3%. The corresponding increase in the marginal workers is sharp from 0.8% to 8.3% for males and 3.8% to 12% for females during 1991 – 2001.

Contrary to the rising trend in total and the Scheduled Castes population, main workers among the Scheduled Tribes have registered a decline both in terms of absolute numbers and percentages. The percentage of main workers among the Scheduled Tribes has declined from 43.1% in 1991 to 32% in 2001. Similar decline has been noted among the males from 52.6% to 42.1% and among females from 33.3% to 21.8% during 1991 – 2001. There has been corresponding increase in the percentage of the Scheduled Tribes marginal workers from 4.6% in 1991 to 16.7% in 2001. The increase is very sharp among the Scheduled Tribes female marginal workers from 7.7% to 21.9% while among males it increased from 1.5% to 11.6% during 1991 – 2001.

The WPR related to 1991 and 2001 census is presented in **Table 4.5**.

Table 4.5: Size of Work Force and Work Participation Rates in West Bengal

Category	No. of workers and non-workers (in million)		% of workers and non-workers to total population	
	1991	2001	1991	2001
No. of workers	21.9	29.48	32.2	36.8
(i) Main	20.58	23	30.23	28.69
(ii) Marginal	1.33	6.5	1.97	8.10
Non-workers	46.16	50.69	67.78	63.23
Total Population	68.10	80.17	100	100
WPR (Male)	26.81	27.92	51.41	54
WPR (Female)	5.38	8.85	11.23	18.3
WPR (Total)	32.19	36.77	32.15	36.77

Source: Census 2001

4.1.2.4 Per Capita Income:

West Bengal is the fourth largest populated state in the country and its density of population is highest. Despite of the pressure of population, the state has managed to raise its per capita income owing to massive investment plans in sectors like steel, real estate, power, retail and IT. The average income per person was recorded at Rs. 20,896 in 2003-04, as per Report of Development and Planning Department, Govt. of West Bengal.

4.1.2.5 Poverty Levels:

The estimates of poverty made by the union planning Commission in 1999-2000 show that 27.02% of the state's population lives below the poverty line against the all India average of 26.10%.

In Rural Area 31.85% and in Urban Area 14.86% of the respective population of the state live below poverty line as per the same estimate. The status of poverty in the state has improved significantly as evident from the table presented below. It could manage the negative gap from that of national average due to steady growth in the state.

Table - 4.6: Trend of Population Below The Poverty Line

States	1973-74	1977-78	1983	1987-88	1993-94	1999-2000	2004-05 (at URP)*
West Bengal Rural	73.1%	68.3%	63.1%	48.3%	40.8%	31.9%	28.6%
West Bengal Total	63.4%	60.5%	54.9%	44.7%	35.7%	27%	24.7%
India Rural	56.4%	53.1%	45.7%	39.1%	37.3%	27.1%	28.3%
India Total	54.9%	51.3%	44.5%	38.9%	36%	26.1%	27.5%

Source: Planning Commission, Govt. of India

* Calculated from Uniform Reference Period Distribution of NSS 61 Round of Consumer expenditure.

4.1.2.6 Human and Gender Development Index:

The Human Development Index (HDI) for West Bengal stands at 0.61 as compared to 0.59 for India. Relative position of the state with National average in respect of various parameters is presented in **Table 4.7**.

Table 4.7: Relative Position of West Bengal and India

Indicators	Ref. Year	India	West Bengal	
Decadal Pop. Growth Rate (%)	1991-2001	21.34	17.8	
Sex Ratio	2001	933	934	
Literacy Rate (%)	2001	65.38	68.6	
Work Participation Rate (%)	1991	37.46	36.8	
Poverty Rate (%)	2000	26.1	27	
Life Expectancy at Birth (Years)	2001-2005	62.3(M) 63.9(F)	63.9(M) 65.5(F)	
Infant Mortality Rate (Per 000)	2001	58	38	
Death rate (Per 000)	2001		7	
Birth Rate (Per 000)	2001		20.7	Kerala
HDI	2006	0.61	0.64	0.76
GDI	2006	0.59	0.62	0.75

Source - 1. Primary Census Abstract , WB Volume - 1

4.2 PROFILE OF THE DISTRICTS

The state of West Bengal has now (2010) 19 districts including Kolkata which is completely urban. However, during independence, the state was formed with 14 districts. Coochbehar became a district of the state from the princely state of Coochbehar on 19th January 1950. Puruila district was formed on 1st November 1956 from parts of the Manbhum district of Bihar. Later three large districts were divided into smaller districts. On 1st March 1986 the district of 24 Parganas was bifurcated into two districts, North and South 24 Parganas. On 1st April, 1992, the West Dinajpur District was splitted into North and South Dinajpur. On 1st January 2002, Medinipur was bifurcated into Purba and Paschim Medinipur. Chandernagore, a part of French India, became a part of Hooghly district on 2nd October 1954.

4.2.1 Demographic Profile – Growth rate and Composition of Rural Population

All the 18 districts (leaving Kolkata being entirely urban) have recorded a positive growth (more than 9%) of rural population during 1991 – 2001. 6 districts experienced higher growth rate than the state average of rural growth rate of 16.97%. Uttar Dinajpur has recorded highest growth of 23.44% followed by Malda (19.64%), Dakshin Dinajpur (18.37%), Nadia (17.79%), Murshidabad (17.30%) and Darjeeling (16.98%). The Burdwan district has recorded the lowest growth (9.68%) followed by Hooghly (10.65%). Remaining 10 districts have recorded growth rate ranging between 11.18% and 16.78%. The districts of Malda, Bankura, Birbhum and Coochbehar have the highest proportion of rural population to total population at 92.68%, 92.63%, 91.43% and 90.90% respectively. The rural population to total population in 13 of 18 districts is higher than that of state average of 72%. North 24 Parganas have recorded the lowest proportion at 45.70% closely followed by Howrah at 49.64%. Such proportions in remaining 3 districts are between 63.06% and 67.65%. The district wise growth rate and composition is presented in **Table 4.8**.

Table 4.8: District wise Growth Rate and Comparison of Rural Population, 2001

Sl. No.	Name of District	Total population	Growth rate (%)	Population		% of population	
				SC	ST	SC	ST
1	Darjeeling	1088740	16.98	207422	178878	19.05	16.43
2	Jalpaiguri	2794291	16.18	1124404	625585	40.24	22.39
3	Coochbehar	2253537	11.18	1197449	13136	53.14	0.58
4	Uttar Dinajpur	2147351	23.44	623649	122110	29.04	5.69
5	Dakshin Dinajpur	1306324	18.37	397599	236271	30.44	18.09
6	Malda	3049528	19.64	518987	224698	17.02	7.37
7	Murshidabad	5133835	17.30	610729	73202	11.90	1.43
8	Birbhum	2757002	15.63	830700	19612	30.13	0.71
9	Burdwan	4348466	9.68	1384945	347072	31.85	7.98
10	Nadia	3625308	17.79	1128190	101911	31.12	2.81
11	24 Parganas North	4083339	13.02	1208661	168686	29.60	4.13
12	Hooghly	3354227	10.65	981740	198486	29.27	5.92
13	Bankura	2957447	13.01	943745	329080	31.91	11.13
14	Purulia	2281090	11.68	408706	456573	17.92	20.02
15	Purba Medinipur	4051232	11.33	592762	23797	14.63	0.59
16	Paschim Medinipur	4575651	14.36	860371	750518	18.80	16.40
17	Howrah	2121109	11.34	465837	8543	21.96	0.40
18	24 Parganas South	5820469	14.88	2039029	79208	35.03	1.36

Source - District Statistical Hand book 2005, Bureau of Applied Economics and Statistics, GOWB

Among the districts, the Scheduled Caste population with respect to the district rural population ranges from 11.90% in Murshidabad district to as high as 53.14% in Coochbehar district. The Scheduled tribe population in the rural areas of the districts varies from as high as 22.39% in Jalpaiguri district closely followed by 20.02% in Purulia, 18.09% in Daksin Dinajpur, 16.43% in Darjeeling and 16.40% in Paschim Medinipur districts to as low as 0.40% in Howrah, 0.28% in Coochbehar and 0.71% in Birbhum districts.

Out of the 18 districts, 13 districts have recorded high proportion of Rural Population to total population ranging from 78.73% to 92.68%. Such figures against the districts are given below in **Table 4.9**

Table 4.9: District wise comparison in the Proportion of Rural to total Proportion

Sl. No.	District	Proportion of Rural to total population
1.	Malda	92.68%
2.	Bankura	92.63%
3.	Birbhum	91.43%
4.	Coochbehar	90.90%
5.	Purulia	89.93%
6.	Medinipur (Combined)	89.76%

Sl. No.	District	Proportion of Rural to total population
7.	Uttar Dinajpur	87.94%
8.	Dakshin Dinajpur	86.90%
9.	Murshidabad	87.51%
10.	24 Parganas (South)	84.27%
11.	Jalpaiguri	82.16%
12.	Nadia	78.73%
13.	Darjeeling	67.65%
14.	Hooghly	66.53%
15.	Burdwan	63.06%
16.	Howrah	49.64%
17.	24 Parganas (North)	45.70%

District wise geographical area and population characteristics are presented in **Table 4.10.**

Table 4.10: District wise Geographical Area, Population and Population Density

Sl. No.	Name of District	Geo-graphical Area (Sq. Km.)	Population		Population Density (per sq km)	Sex Ratio			
			Male	Female		Total	General	Scheduled Caste (SC)	Scheduled Tribe (ST)
1	Darjeeling	3149	830644	778528	511	100	71.2	16.1	12.7
2	Jalpaiguri	6227	1751145	1650028	546	100	44.4	36.7	18.9
3	Coochbehar	3387	1272094	1207061	732	100	49.3	50.1	0.6
4	Uttar Dinajpur	3140	1259737	1182057	778	100	67.2	27.7	5.1
5	Dakshin Dinajpur	2219	770335	732843	677	100	55.1	28.8	16.1
6	Malda	3733	1689406	1601062	881	100	76.3	16.8	6.9
7	Murshidabad	5324	3005000	2861569	1102	100	86.7	12	1.3
8	Nadia	3927	2366853	2237974	1173	100	67.9	29.7	2.5
9	Birbhum	4545	1546633	1468789	663	100	63.8	29.5	6.7
10	Bankura	6882	1636002	1556693	464	100	58.4	31.2	10.4
11	Purulia	6259	1298078	1238438	405	100	63.4	18.3	18.3
12	Burdwan	7024	3588376	3307138	982	100	66.6	27	6.4
13	Hooghly	3149	2589625	2452351	1601	100	72.2	23.6	4.2
14	Purba Medinipur	4295	2268323	2149053	1028	100	93.08	6.65	0.28
15	Paschim Medinipur	9786	2648120	2545290	531	100	79.48	11.25	9.27
16	Howrah	1467	2241898	2031201	2913	100	84.1	15.4	0.4
17	24 Parganas North	4094	4638756	4295530	2182	100	77.2	20.6	2.2
18	24 Parganas South	9960	3564993	3341696	693	100	66.7	32.1	1.2

Source: District Statistical Handbook, Bureau of Applied Economics & Statistics & Census 2001

4.2.2 Literacy Rates

The highest literacy rate in rural areas in 2001 has been recorded in Purba Medinipur district (80.2%) followed by North 24 Parganas (78.1%), Howrah (77%), Hooghly (75.1%). All the districts except four, Uttar Dinajpur (47.9%), Malda (50.3%), Murshidabad (54.3%) and Purulia (55.6%), have recorded a literacy rate of more than 60%.

The literacy rate among rural males of West Bengal is 75.04% whereas it is 55.93% among rural females. In the case of males, Purba Medinipur tops with a literacy rate of 89.1%, followed by 24 Parganas North 83.9%, Howrah 83.2%, Hooghly 82.6%, Paschim medinipur 81.3%, Darjeeling 80.1%. The districts of Uttar Dinajpur (58.4%), Malda (58.8%) and Murshidabad (60.7%) are at the bottom in terms of male literacy rates.

In the literacy rate among rural females of the districts, 24 Parganas North (71.7%), Purba Medinipur (70.7%), Howrah (70.3%) are at the top. The lowest rates are recorded in Uttar Dinajpur (36.5%), purulia (36.5%), Murshidabad (47.6%) and Bankura (49.4%).

4.2.3 Sex Ratio

Sex ratio has not crossed the figure of 1000 in any of the 18 districts. Only 5 districts recorded sex ratio above 950, 15 districts recorded a sex higher than the state average (934). The remaining 3 districts recorded a sex ratio lower than that of state average.

The districts of Paschim Medinipur (961), Purulia (954), Bankura (952), Murshidabad (952), Dakshin Dinajpur (951) and Birbhum (950) recorded the highest sex ratio, while Howrah (906), Burdwan (922) and 24 Parganas North (926) recorded low sex ratio.

The literacy rates and sex ratio is presented in **Table 4.11**.

Table 4.11: District wise Rural Literacy and Sex Ratio

Sl. No.	Name of District	Total Literacy Rate		Literacy Rate 2001		LDR	Sex Ratio	
		1991	2001	Male	Female		1991	2001
1	Darjeeling	57.95	71.8	80.1	62.9	0.785	913	937
2	Jalpaiguri	45.10	62.9	72.8	52.2	0.717	927	942
3	Coochbehar	45.80	66.3	75.9	56.1	0.739	934	949
4	Uttar Dinajpur	34.60	47.9	58.4	36.5	0.625	920	938
5	Dakshin Dinajpur	46.40	63.6	72.4	54.3	0.750	944	951
6	Malda	45.10	50.3	58.8	41.3	0.702	938	948
7	Murshidabad	38.28	54.3	60.7	47.6	0.784	943	952
8	Birbhum	48.60	61.5	70.9	51.6	0.727	946	950
9	Burdwan	61.88	70.2	78.6	61.0	0.776	848	922
10	Nadia	52.53	66.1	72.3	59.6	0.824	935	946
11	24 Parganas North	66.80	78.1	83.9	71.7	0.854	907	926
12	Hooghly	66.80	75.1	82.6	67.2	0.813	917	947
13	Bankura	52.00	63.4	76.8	49.4	0.643	951	952
14	Purulia	43.30	55.6	73.7	36.5	0.495	946	954
15	Purba Medinapur	74.00	80.2	89.1	70.7	0.793	939	947
16	Paschim Medinapur	65.40	70.4	81.3	59.1	0.726	948	961

17	Howrah	67.60	77.0	83.2	70.1	0.842	881	906
18	24 Parganas South	55.10	69.4	79.2	59.0	0.744	929	937

Source - Primary Census Abstract Volume 1, West Bengal (Census of India, 2001)

4.2.4 Economic Profile – Work Force Participation Rates and Composition.

The census of India 2001 reflects that in the state of West Bengal, the rural working population is 37.90% of the rural population of which 73.58% are main workers and 26.42% are marginal worker. The Work Force Participation Rate (WFPR) in rural areas is higher than that of the state average in 10 districts while it is lower in 7 districts. In the calculation Purba and Paschim Medinipur have been considered as one district (Medinipur). In respect of WFPR, Purulia district tops the list with 46.21% followed by Bankura (45.57%), Dakshin Dinajpur (42.13%), Malda (41.45%), Medinipur, Purba and Paschim combined (39.94%). The WFPR is lowest in 24 Parganas South (32.57%) followed by Howrah (33.39%), Murshidabad (33.47%) and 24 Parganas North (33.64%).

Agricultural labourers constitute 31.48% of total rural workers in the state. This followed by cultivators who form almost 25% of total rural work force. Other workers are the major working groups in rural West Bengal forming more than 43%.

In 7 districts, proportion of cultivators is higher than that of state average. The district of Dakshin Dinajpur has the highest ratio (34.36%) followed by Purulia (33.33%), Bankura (32.56%), Coochbehar (30.96%), Medinipur combined (30.31%) and Uttar Dinajpur (28.99%). The Howrah district accounts for only 10.21% followed by 24 Parganas South 19%, Burdwan (20.67%), Hooghly (21.11%) and 24 Parganas North (21.21%). Other districts account for more than 25%.

In 7 districts, proportion of rural agricultural labourers to total rural workers is higher than that of state average (31.48%). Burdwan has the highest agricultural labours (41.91%) followed by Dakshin Dinajpur (40.02%), Birbhum (39.68%), Purulia (38.37%), Bankura (37.18%) and Hooghly (34.14%). The lowest proportion is found in Howrah district with only 10.18% followed by Darjeeling with 10.24%, 24 Parganas North with 13.62%. Other districts have more than 20%. The work force participation rates and the composition are presented in **Table 4.12, 4.13 and 4.14.**

Table 4.12 : District wise Rural Work Force Composition, 2001

Sl. No.	Name of District	Work Force participation rate 2001 - %			Composition of work force (%) 2001			
		Main Workers	Marginal Workers	Non-workers	Cultivators	Agricultural Labourers	HH Industries	Other Workers
1	Darjeeling	29.8	5.6	64.6	15.5	10.2	2.8	71.5
2	Jalpaiguri	30.1	8.2	61.7	20.7	17.7	2	59.6
3	Coochbehar	30.4	8.6	61	37.4	29.5	4.1	29
4	Uttar Dinajpur	29.3	9	61.7	29.6	39.7	3.7	27
5	Dakshin Dinajpur	31.4	9.4	59.2	31	36.2	4.9	27.9
6	Malda	29.4	11.4	59.2	20.8	30.7	15.6	32.8
7	Murshidabad	28.5	5.7	65.8	18.7	28	20.4	32.9
8	Birbhum	27.6	9.8	62.6	23.1	36.9	6.5	33.5
9	Burdwan	27.6	8	64.4	14.8	29.9	4.9	50.4
10	Nadia	30.5	4.6	64.9	19.8	23.3	11.4	45.5
11	24 Parganas North	29.4	4.1	66.5	10.1	13.6	4.4	71.9
12	Hooghly	30.3	6.6	63.1	14.9	24.3	5.2	55.6
13	Bankura	29.6	15.1	55.3	30.8	35.3	5.8	28.1
14	Purulia	25.4	19	55.6	31.3	36	7.5	25.2
15	Purba Medinipur	24.06	12.6	63.34	25.67	27.4	7.01	39.92
16	Paschim Medinipur	28.25	12.79	58.96	29.99	35.12	7.69	27.2
17	Howrah	28.7	5	66.3	5.2	10.2	11.5	73.1
18	24 Parganas South	24.3	8.2	67.5	16.2	26	6.1	51.7

Source - Primary Census Abstract Volume 1, West Bengal (Census of India, 2001)

Table 4.13: District-wise figures on Main and Marginal Workers

Sl. No.	Name of the District	Total Workers									
		Main Workers					Marginal Workers				
		Cultivators	Agricultural Labourers	Household Industry Workers	Other Workers	Total	Cultivators	Agricultural Labourers	Household Industry Workers	Other Workers	Total
1	Darjeeling	68665	31288	10937	367961	478851	19529	27062	4915	39085	90591
2	Jalpaiguri	209830	134360	18864	662379	1025433	60114	95803	7975	113811	277703
3	Coochbehar	290598	188400	29171	246142	754311	71242	97026	10084	34042	212394
4	Uttar Dinajpur	230208	245303	20953	220019	716483	46523	125731	13461	33326	219041
5	Dakshin Dinajpur	165471	142597	19869	143250	471187	24343	79408	9861	27929	141541
6	Malda	245909	246723	127263	347248	967143	33367	165139	82044	93013	373563
7	Murshidabad	348182	454281	287854	581994	1672311	26990	107593	121120	77160	332863
8	Birbhum	220622	251844	40893	318340	831699	40333	165105	32180	59180	296798
9	Bardhaman	314404	463185	82883	1041862	1902334	47283	270837	38388	192399	548907
10	Nadia	287652	328464	144576	645032	1405724	32812	47077	39835	90257	209981
11	24 Parganas(North)	273751	309793	90809	1948999	2623352	27179	97138	41917	198574	364808
12	Hooghly	237068	302286	64072	924614	1528040	40833	149828	32132	108654	331447
13	Bankura	316593	265339	46950	315334	944216	123364	237875	36542	85275	483056
14	Purulia	243043	121357	51547	229559	645506	109669	284866	32919	54528	481982
15	Medinipur	764520	616488	147306	1001798	2530112	290404	575875	130301	224365	1220945
16	Howrah	63772	88770	120308	952122	1224972	11163	57722	45421	99596	213902
17	24 Parganas(South)	269942	328719	88900	990569	1678130	92168	255297	47277	169888	564630
Total for the State excluding Kolkata=		4550230	4519197	1393155	1093722	2139980	1097316	2839382	726372	1701082	6364152

Source - Primary Census Abstract Volume 1, West Bengal (Census of India, 2001)

Table 4.14: Rural Work Force Participation in Different Districts of West Bengal

Sl No.	District	Rural population	Rural Worker			Total Cultivator (Main & Marginal) Rural	Total Agricultural Labour (Main & Marginal) Rural	Proportion of rural worker to rural population	Proportion of Cultivators to rural workers	Proportion of Agricultural labour to rural workers	Proportion of other workers to rural workers
			Main	Marginal	Total						
1	Darjeeling	1088740	323423	79816	403239	87411	35597	37.037	21.677	8.828	69.495
2	Jalpaiguri	2794291	843676	262613	1106289	266790	159077	39.591	24.116	14.379	61.505
3	Coochbehar	2253537	685745	207566	893311	276637	169233	39.640	30.968	18.944	50.088
4	Uttar Dinajpur	2147351	630566	211417	841983	244134	224446	39.210	28.995	26.657	44.348
5	Dakshin Dinajpur	1306324	414129	136231	550360	189122	220260	42.130	34.363	40.021	25.616
6	Malda	3049528	896295	367950	1264245	278552	411171	41.457	22.033	32.523	45.444
7	Murshidabad	5133835	1421243	297304	1718547	371434	554975	33.475	21.613	32.293	46.093
8	Birbhum	2757002	755901	288547	1044448	259938	414439	37.883	24.888	39.680	35.432
9	Burdwan	4348466	1247775	438908	1686683	348786	706908	38.788	20.679	41.911	37.410
10	Nadia	3625308	1081871	177998	1259869	315084	366429	34.752	25.009	29.085	45.906
11	24 Parganas North	4083339	1138505	235434	1373939	291453	392616	33.647	21.213	28.576	50.211
12	Hooghly	3354227	1011873	282486	1294359	273317	441982	38.589	21.116	34.147	44.737
13	Bankura	2957447	873592	474353	1347945	438988	501186	45.578	32.567	37.181	30.251
14	Purulia	2281090	581447	472824	1054271	351384	404561	46.218	33.330	38.374	28.297
15	Medinapur	8626883	2263811	1182105	3445916	1044535	1172601	39.944	30.312	34.029	35.659
16	Howrah	2121109	559539	148797	708336	72337	139513	33.395	10.212	19.696	70.092
17	24 Parganas South	5820469	1377189	518713	1895902	360331	576763	32.573	19.006	30.422	50.573
	West Bengal	57748946	16106580	5783062	21889642	5470233	6891757	37.905	24.990	31.484	43.526

Source - Primary Census Abstract Volume 1, West Bengal (Census of India, 2001)

4.2.5 Human Development

The picture of Human Development of the state is not homogeneous. Much variation across districts are noticed. **Table 4.15** presents the calculations for the Human Development Index for the different districts, as well as for the state as a whole. There are very substantial differences across districts, such that the HDI ranges from a high of 0.68 for Howrah, to a low of 0.44 for Malda.

Table 4.15: Human Development Indices by districts

Districts	Development Indices			HDI	HDI Rank
	Health	Income	Education		
Bankura	0.67	0.26	0.62	0.52	11
Birbhum	0.53	0.27	0.61	0.47	14
Burdwan	0.74	0.47	0.71	0.64	5
Cooch Behar	0.5	0.41	0.65	0.52	11
Darjeeling	0.73	0.49	0.72	0.65	4
Dinajpur (Uttar & Dakshin)	0.62	0.39	0.53	0.51	13
Howrah	0.77	0.53	0.75	0.68	2
Hooghly	0.77	0.46	0.67	0.63	6
Jalpaiguri	0.61	0.38	0.6	0.53	10
Kolkata	0.82	0.73	0.8	0.78	1
Malda	0.49	0.36	0.48	0.44	17
Medinipur (Purba & Paschim)	0.68	0.45	0.74	0.62	7
Murshidabad	0.57	0.29	0.52	0.46	15
Nadia	0.65	0.41	0.66	0.57	9
North 24 Parganas	0.72	0.49	0.76	0.66	3
Purulia	0.61	0.18	0.55	0.45	16
South 24 Parganas	0.71	0.4	0.68	0.6	8
West Bengal	0.7	0.43	0.69	0.61	

Source: West Bengal State Human Development Report 2004

4.2.6 Gender Development

Gender discrimination, though declined in some respect, remains significant in the state. It is more evident in economic variables and in literacy. Health position is improving relative to men. The calculations of gender Development Index are presented in **Table 4.16**.

Table 4.16: Gender Development Indices by districts

District	Health Index	Income Index	Education Index	GDI	Rank
Darjeeling	0.731	0.356	0.714	0.600	2
Jalpaiguri	0.614	0.281	0.581	0.492	11
Coochbehar	0.497	0.287	0.628	0.471	13
Dinajpur	0.616	0.291	0.527	0.478	12
Malda	0.491	0.291	0.465	0.416	17
Murshidabad	0.566	0.176	0.527	0.423	16
Birbhum	0.533	0.178	0.595	0.435	14
Burdwan	0.740	0.270	0.669	0.560	7
Nadia	0.649	0.215	0.653	0.506	9

District	Health Index	Income Index	Education Index	GDI	Rank
North 24 Parganas	0.721	0.219	0.752	0.564	6
Hooghly	0.764	0.259	0.720	0.581	3
Bankura	0.662	0.215	0.605	0.494	10
Purulia	0.606	0.161	0.506	0.424	15
Medinipur	0.683	0.323	0.728	0.578	4
Howrah	0.773	0.194	0.742	0.570	5
Kolkata	0.824	0.320	0.783	0.642	1
South 24 Parganas	0.705	0.192	0.666	0.521	8
West Bengal	0.697	0.270	0.681	0.549	

Source: West Bengal State Human Development Report 2004

From the tables it is indicative that the GDI broadly follow the same pattern as the HDI rankings in a district. The districts with low HDI also tend to have low GDI. However, some districts like Howrah, North 24 Parganas, Burdwan and Coochbehar have higher HDI rankings in contrast to their lower GDI rankings, suggesting acute gender discrimination in those districts. Low work force participation of women is also evident from the very low Income Index component of the GDI.

4.2.7 Agriculture Profile

The state of West Bengal is broadly divided into three Agro-climatic regions covering 6 Agro-climatic sub-regions as classified by Planning Commission, Govt. of India. All the 18 districts fully or partly are distributed in these regions. **Table 4.17** presents the distributions of Land Use Statistics for different districts.

Table 4.17: District-wise Land Use Statistics for the year 2006-07

Name of the Agro- Climatic Zone	Reporting Area	Forest Area	Area under non-agricultural use	Barren and Un-culturable land	Permanent Pastures and other Grazing land	Land under miscellaneous Tee crops and groves not included in net area sown	Culturable waste land	Fallow land other than current fallow	Current Fallow	Net area sown
Darjeeling	325469	124575	34633	2490	757	2089	1467	3756	13340	142362
Jalpaiguri	622700	179000	83522	3261	0	5046	56	41	16048	335726
Coochbehar	331565	4256	66190	1346	141	8746	833	891	894	248268
Uttar Dinajpur	312466	580	30862	493	8	2312	245	37	327	277602
Dakshin Dinajpur	221909	749	30813	29	85	1292	78	202	13629	175032
Malda	370862	1679	84415	0	0	2897	93	302	70076	211400
Murshidabad	532499	771	125317	1901	136	734	863	89	393	402295
Nadia	390655	1216	86522	167	70	4404	697	674	6903	290002
24 Parganas (North)	386524	0	119704	0	0	4443	0	0	2399	259978
24 Parganas (South)	948710	426362	136155	400	4	2085	740	98	10081	372758
Howrah	138676	0	49672	116	19	1081	60	234	5308	82186
Hooghly	313379	530	88803	1	104	1762	1490	154	16	220519
Burdhwan	698762	21165	200889	822	647	812	6920	1955	7041	458511
Birbhum	451118	15853	94567	301	247	1026	3087	4107	14256	317674
Bankura	687998	149169	146664	1526	717	2935	1568	320	40433	344656
Purulia	625646	75048	99902	6304	1034	3921	8937	4729	115631	310240
Paschim Medinipur	928581	171935	156930	1739	889	9493	6318	4559	21403	555645
Purba	396594	899	97441	449	2	2890	304	313	3142	291154

Name of the Agro- Climatic Zone	Reporting Area	Forest Area	Area under non-agricultural use	Barren and Un-culturable land	Permanent Pastures and other Grazing land	Land under miscellaneous Tee crops and groves not included in net area sown	Culturable waste land	Fallow land other than current fallow	Current Fallow	Net area sown
Medinipur										
Total:	8684113	1173787	1733001	21345	4860	57968	33756	22461	341320	5296008

Source: Evaluation Wing, Directorate of Agriculture, Government of West Bengal

District wise cropping pattern, cultivable area with net and gross cropped area including cropped intensity is presented in **Table 4.18, 4.19** respectively.

The cropping intensity in 2006-07 was highest in Hooghly (242.96%) followed by Nadia (241.84%), Murshidabad (235.35%), Howrah (199.57%), North 24 Parganas (198.56%), Coochbehar (196.11), Purba Medinipur (198.78%), Burdwan (185.86%). The lowest intensity was recorded in Purulia (115.7%) followed by Darjeeling (135.19%) and South 24 Parganas (144.61%)

Table 4.18: Existing cropping pattern by districts

Sl. No.	Name of the District	Irrigated	Non - Irrigated
1	Darjeeling	Paddy - Wheat / Vegetable / Potato	Paddy / Pulses
2	Jalpaiguri	Jute - Paddy - Wheat / Vegetable / Oilseed / Potato	Jute - Paddy / Pulses
3	Coochbehar	Jute - Paddy - Wheat / Vegetable / Oilseed / Potato	Jute - Paddy / Pulses
4	Uttar Dinajpur	Jute - Paddy - Wheat / Vegetable / Oilseed / Boro Paddy	Jute - Paddy / Pulses
5	Dakshin Dinajpur	Jute - Paddy - Wheat / Vegetable / Oilseed / Boro Paddy	Jute - Paddy / Pulses
6	Malda	Jute - Paddy - Wheat / Vegetable / Oilseed / Boro Paddy	Jute - Paddy / Pulses
7	Murshidabad	Jute - Paddy - Wheat / Vegetable / Oilseed / Sugar Cane	Jute - Paddy / Pulses
8	Nadia	Jute - Paddy - Wheat / Vegetable / Oilseed / Sugar Cane	Jute - Paddy / Pulses
9	North 24 Parganas	Vegetable - Paddy / Oilseed / Boro Paddy	Paddy - Pulses
10	South 24 Parganas	Vegetable - Paddy / Oilseed / Boro Paddy	Paddy - fallow
11	Howrah	Jute - Paddy - Boro Paddy	Paddy - Pulses
12	Hooghly	Jute - Paddy - Potato / Vegetables / Oilseed	Paddy - Pulses
13	Burdwan	Jute - Paddy - Potato / Vegetables / Oilseed	Paddy - Pulses
14	Birbhum	Paddy - Potato / Vegetables / Oilseed / Boro Paddy / Sugar Cane	Paddy - Pulses
15	Bankura	Paddy - Potato / Vegetables / Oilseed / Boro Paddy	Paddy - Pulses
16	Purulia	Paddy - Oilseed / Vegetable	Paddy - Pulses
17	Paschim Medinipur	Paddy - Potato / Pulses / Oilseed / Boro Paddy	Paddy - Pulses
18	Purba Medinipur	Paddy - Pulses / Vegetable / Oilseed / Boro Paddy	Paddy - Pulses

Source: Evaluation Wing, Directorate of Agriculture, Government of West Bengal

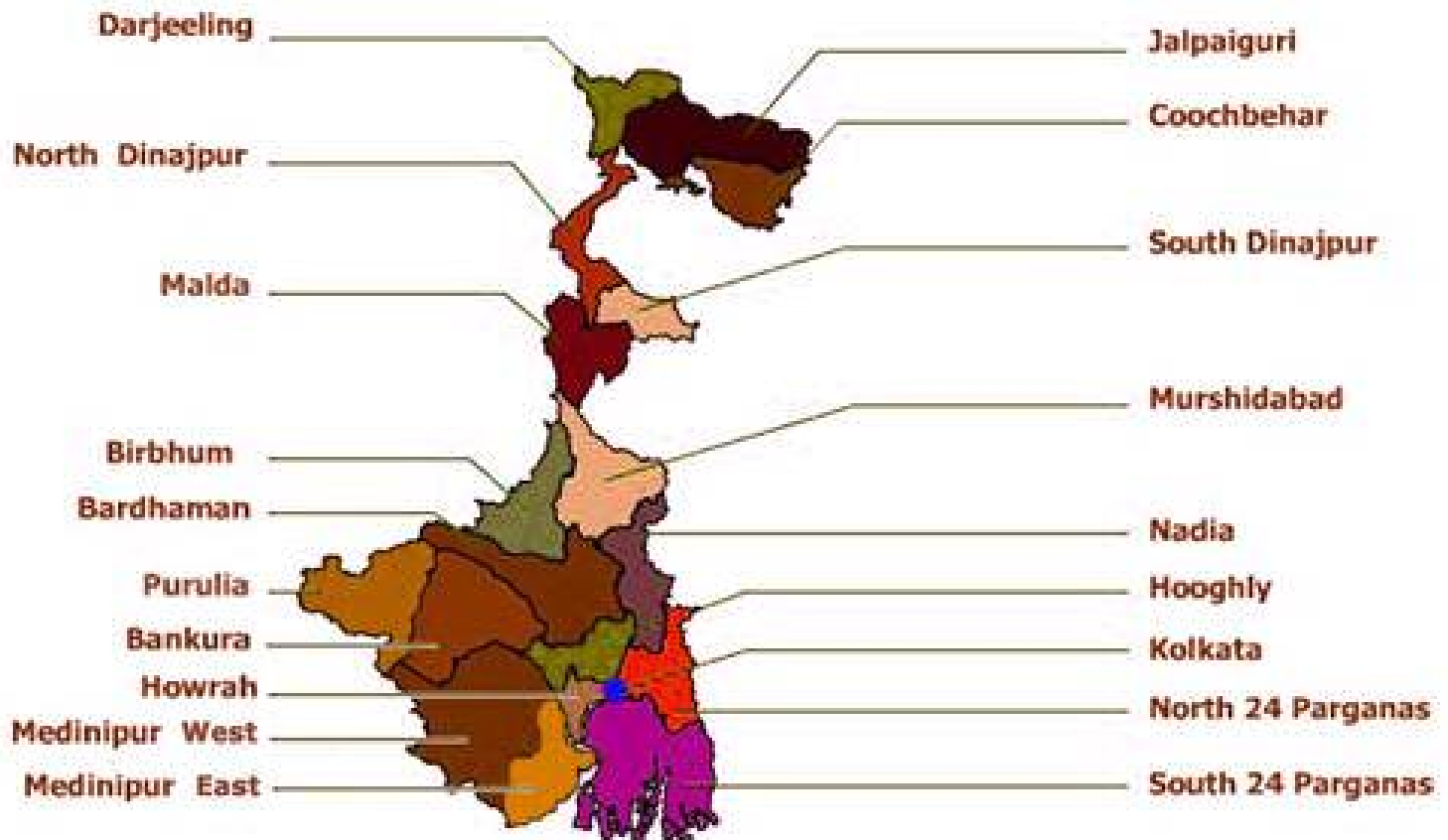
Table 4.19: District wise Cultivable Area, Net Cropped Area, Gross Cropped Area and Cropped Intensity for 2006 – 07

Sl. No.	Name of the District	Cultivable area	Gross Cropped Area	Net Cropped Area	Cropping Intensity (%)
1	Darjeeling	163014	192458	142362	135.19
2	Jalpaiguri	356917	550464	335726	163.96
3	Coochbehar	259632	486873	248268	196.11
4	Uttar Dinajpur	280523	470490	277602	169.48
5	Dakshin Dinajpur	190233	303018	175032	173.12
6	Malda	284768	396827	211400	187.71
7	Murshidabad	404374	946786	402295	235.35
8	Nadia	302680	701345	290002	241.84
9	North 24 Pargana	266820	516214	259978	198.56
10	South 24 Pargana	385789	539085	372785	144.61
11	Howrah	88869	164019	82186	199.57
12	Hooghly	223941	535781	220519	242.96
13	Burdwan	475239	852176	458511	185.86
14	Birbhum	340150	549725	317674	173.05
15	Bankura	389922	551043	344656	159.88
16	Purulia	443358	358953	310240	115.7
17	Paschim Medinipur	597088	966714	555615	173.99
18	Purba Medinipur	297803	552564	291154	189.78
Total		5751120	9634535	5296005	182.00

Cultivable area includes Net Area sown, Current Fallow, Fallow Land Other than Current Fallow, Culturable Waster Land, Land Under Misc. Tree Crops and Groves

Source: Evaluation Wing, Directorate of Agriculture, Government of West Bengal

West Bengal



4.3 Salient Features of the State:

Salient Features of the state of West Bengal are presented in **Table 4.20 in page 20 of 4.**

4.4 Salient Features of the Districts:

Salient features of 18 districts of the state are presented below in **Table 4.21 and 4.22.**

Table 4.21: Salient Features of Demography and Administration by Districts

Sl. No.	Districts	Area (sq.km.)	No. of Blocks	No. of Mouzas	Population Density per sq. km.	Decadal Growth Rate (%)	% Share of SC	% Share of ST	Sex Ratio
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Darjeeling	3149	12	708	511	23.79	16.09	12.69	937
2	Jalpaiguri	6227	13	756	546	21.45	36.71	18.87 ⁺	942
3	Coochbehar	3387	12	1202	732	14.19	50.11 ⁺	0.57	949
4	Uttar Dinajpur	3140	9	1504	778	28.72 ⁺	27.71	5.11	938
5	Dakshin Dinajpur	2219	8	1638	677	22.15	28.78	16.12	951
6	Malda	3733	15	1798	881	24.78	16.84	6.90	948
7	Murshidabad	5324	26	2210	1102	23.76	12.00*	1.29	952
8	Birbhum	4545	19	2473	663	17.99	29.51	6.74	950
9	Burdwan	7024	31	2529	982	13.96	26.98	6.41	922
10	Nadia	3927	17	1346	1173	19.54	29.66	2.47	946
11	24 Parganas North	4094	22	1581	2182	22.69	20.60	2.23	926
12	Hooghly	3149	18	1915	1601	15.77	23.58	4.21	947
13	Bankura	6882	22	3830	464	13.82*	31.24	10.36	952
14	Purulia	6259	20	2683	405*	14.02	18.29	18.27	954
15	Purba Medinipur	4295	25	3035	1028	15.35	14.47	0.60	947
16	Paschim Medinipur	9786	29	8701	531	15.35	18.05	14.87	961 ⁺
17	Howrah	1467	14	734	2913 ⁺	14.57	15.42	0.45*	906*
18	24 Parganas South	9960	29	2139	693	20.85	32.12	1.23	937
	West Bengal				903	17.77	23.02	5.50	934

+ Highest

* Lowest

Table 4.22: Salient Features of Literacy, Indices, Employment, and others by Districts

Sl. No.	Districts	Literacy Rate (%) 2001	Gender Gap in Literacy (2001)	Human Development Index value (2004)	Gender Development Index value (2004)	Work Participation Rate (Rural) 2001	Per Capita Income (2003-04) at current	% of B.P.L. families (P&R.D.)
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		(1)	(2)	(3)	(4)	Work Participation Rate (Rural) 2001		(7)	(8)
						Male	Female		
1	Darjeeling	71.79	17.11	0.65	0.57 ⁺	47.90*	25.70	23967.49 ⁺	46.43 ⁺
2	Jalpaiguri	62.85	20.62	0.53	0.45	52.20	26.20	19103.63	35.87
3	Coochbehar	66.30	19.81	0.52	0.45	55.10	23.30	16657.68	46.01
4	Uttar Dinajpur	47.89*	21.97	0.51	0.46	52.10	25.50	14046.26*	40.98
5	Dakshin Dinajpur	63.59	18.15	0.51	0.46	56.60	26.90	17895.20	43.54
6	Malda	50.28	17.55	0.44*	0.39*	52.70	29.60	18643.99	38.81
7	Murshidabad	54.35	13.08	0.46	0.41	51.30	14.70	17486.22	43.31
8	Birbhum	61.48	19.34	0.47	0.42	54.50	20.30	16466.24	44.02
9	Burdwan	70.18	19.66	0.64	0.54	56.50	20.00	23769.90	26.24*
10	Nadia	66.14	12.73	0.58	0.49	55.10	13.20	19980.67	34.22
11	24 Parganas North	78.07	12.20	0.66	0.55	54.10	12.00	16502.79	37.70
12	Hooghly	75.11	15.38	0.63	0.56	57.70 ⁺	18.90	22397.81	29.08
13	Bankura	63.44	27.33	0.52	0.46	57.00	33.50	18236.17	42.48
14	Purulia	55.57	37.22 ⁺	0.45	0.40	52.90	39.20 ⁺	16182.38	43.65
15	Purba Medinipur	80.20	18.40	0.62	0.55	55.00	24.30	20914.35	26.89
16	Paschim Medinipur	70.40	22.20	0.62	0.55	55.00	24.30	20914.35	32.88
17	Howrah	77.01 ⁺	13.11*	0.68 ⁺	0.56	55.50	10.30*	22565.69	32.18
18	24 Parganas South	69.45	20.18	0.60	0.51	51.10	20.90	17759.77	37.21
West Bengal		68.64	17.41			54.10	20.90	20895.64	36.38

+ Highest

* Lowest

4.5 ISSUES OF SIGNIFICANCE

- West Bengal's overall development matches with that of the country as a whole as reflected in HDI and GDI values. However, it lags behind several other states indicating scope for further improvements.

- Intra-state viz., inter-district HDI/ GDI differentials in W Bengal are quite high.
- Despite significant development, quite a large number of households are poor – more than a third of them are below poverty line.
- The state is predominantly ‘rural’ as 72% of the population lives in rural areas. Rural population relative to the total population of the district as a whole exceeds 80% in as many as 11 districts and four of them exceed 90%.
- West Bengal has relatively larger number of socially vulnerable households as reflected in higher proportion of Scheduled Caste and Scheduled Tribe population.
- Sex ratio wise, the state matches with that of the country, however, the same is quite high in respect of SC and STs.
- Cropping Intensity viz., Net Cropped Area relative to Gross Cropped Area for the state as a whole is quite high. However, inter-district CI differentials are very high ranging between 116 and 243, indicating substantial scope for further increases which is possible only by expanding irrigation facilities.
- Given that the state is predominantly rural, and scope exists for enhancing CI, this project aimed at expanding area under minor irrigation, could contribute significantly for overall development.

V. MINOR IRRIGATION SYSTEMS IN WEST BENGAL: CHALLENGES AND OPPORTUNITIES

5.1 PHYSICAL DIVERSITY OF MINOR IRRIGATION SYSTEM IN WEST BENGAL

Minor Irrigation Schemes in the state are broadly of two categories.

- i) Ground water based schemes
- ii) Surface water based schemes

5.1.1 Ground Water Based MI Schemes

Ground water is utilized in this type of schemes for irrigation. Dug well, Shallow Tube well (STW), Light Duty Tube well (LDTW), Medium Duty Tube well (MDTW) and Heavy Duty Tube well (HDTW) are the types of schemes under this category. Natures of ground water based schemes practiced in the State are depicted in **Table 5.1**.

Table 5.1 : Nature of Ground water Based Schemes with brief details

Sl. No.	Nature of Scheme	Particulars	Yield Capacity	Command Area	Water Distribution System
1.	Dug well	Well size 1.2 m dia and above with depth around 10-15 m	Depends on recuperation	0.5 ha and above Installed by department, individuals and groups	Field channel
2.	STW	Pipe Size 80 mm / 100 mm dia and taps 1 st or 2 nd aquifer	30 cum per hour and runs with centrifugal pump	4 to 6 ha	Field channel or lay flat hose
3.	LDTW	Pipe Size 80 mm / 100 mm dia and taps 1 st or 2 nd aquifer	30 cum per hour and runs with submersible pump set	4 to 6 ha	Field channel or lay flat hose
4.	MDTW	Pipe Size 150 mm dia and taps 2 nd or successive layers of aquifer	100 cum per hour and runs with submersible pump set	20 ha	Underground pipe line distribution system
5.	HDTW	Pipe Size 250 to 300 mm dia and taps 2 nd or successive layers of aquifer	200 cum per hour and runs with submersible pump set	40 ha	Underground pipe line distribution system

5.1.2 Surface Water Based MI Schemes

Surface water is the source of this type of schemes – river, streams, nallahs, lakes, reservoirs, tanks, ponds, beels, bangors, springs etc. are used as sources. Such schemes are broadly divided into two categories, viz,

- ⌚ Surface Flow Schemes in which surface water is used by gravity flow
- ⌚ Surface lift schemes in which water is lifted from the source either manually or using pump sets for distribution.

Brief details about nature of such schemes are given in **Table 5.2**.

Table 5.2 : Nature of surface water based MI Schemes and its brief details

Sl. No.	Name of Scheme	Brief details	Pump Type	CCA	Remarks
Surface Flow Category					
1.	Jampui Schemes	Spring water is guided to the fields with lined	Gravity flow	Depends on spring	Such schemes are available in Dooars
2.	Storage Schemes	Runoff is harvested and conserved in surface storage. Irrigation is provided canal network.	Gravity flow	Depends on the capacity of storage	Such schemes are available in Purulia, Bankura and Paschim Medinipur
Surface Lift Category					
1.	Surface lift irrigation schemes	Lifted water is guided to the fields through unlined field channels or by flat hose	Lifted manually or by 2 to 5HP single centrifugal	0.5 ha to 6 ha	Such schemes are most common and are adopted by unorganized sector
2.	Mini RLI	Under ground pipe line with pressure distribution system takes care of field irrigation	Two pumps set each of capacity 50 cum per hour	20 ha	Such schemes are normally installed by the department and handed over to Panchayat for O&M.
3.	Medium RLI	Under ground pipe line with pressure distribution system takes care of field irrigation	Two pumps set each of capacity 100 cum per hour	40 ha	Such schemes are normally installed by the department and handed over to Panchayat for O&M.
4.	Major RLI	Under ground pipe line with pressure distribution system takes care of field irrigation	Two pumps set each of capacity 200 cum per hour	80 ha	Such schemes are normally installed by the department and handed over to Panchayat for O&M.

Moreover, any of the Minor Irrigation Schemes depending upon attachment of special water distribution system is also termed as Drip and Sprinkler irrigation scheme.

5.1.3 Trend of Minor irrigation Development

Minor Irrigation system in the state is popular amongst the cultivators. Whenever the farmers manage a fund either by loan or own savings, their first priority is development of irrigation in their fields.

Moreover, they try to avail full advantage whenever there is scope for any scheme from any department of the Government. As a result numbers of various schemes have increased considerably resulting in substantial increase in Minor Irrigation coverage. While the number of schemes has increased by around 14%, the CCA has increased by 25% in 2000-01 as compared to the figures of 1987-88. The trend of Minor Irrigation development is projected in **Table 5.3**.

Table 5.3: Results of different Minor Irrigation Census in the State of West Bengal

Sl. No.	Name of Scheme	Number of schemes as per		
		1 st MI Census 1987-88	2 nd MI Census 1990-91	3 rd MI Census 2000-01
1.	Dug well	63387	55983	39377
2.	STW	368316	504638	603667
3.	DTW	3122	4039	5139
4.	Surface Flow Schemes	70820	66454	53781
5.	Surface Lift Schemes	205471	83645	107595
Total Number		711116	714759	809559
Total CCA		1681046 ha	1428275 ha	2095849 ha

5.2 DIVERSITY IN USES OF MI SCHEMES IN THE STATE

MI Schemes are used mainly for single purpose i.e. for irrigation. However in practice, uses for other purposes are also noticed.

🕒 Direct Uses

- Irrigation
- Pisciculture in the Reservoir type M.I. Scheme
- Drinking water in STW/LDTW/MDTW/HDTW Schemes
- Fingerling cultivation in reservoir type schemes
- Aquatic plants like Makna etc.
- Fodder cultivation

- Duck rearing in reservoir type schemes
- Bathing and Washing including live stock
- Maintaining rituals / ceremonies particularly in reservoir and water detention type schemes.

🕒 **Peripheral Uses:**

- Silted reservoir bed clay for different purposes like pottery, bricks, improving agricultural land, earth works for houses.
- Vegetative cover around the reservoir bed and in the catchment and command are used for cattle grazing
- Fuel wood from the vegetative cover
- Maintaining the ecological balance of the area

5.3 SOCIO-ECONOMIC DIVERSITY

A total of 109 sample schemes have been covered by the Social Assessment team. 109 villages are associated with these schemes. These villages are spread over 18 districts representing various cross-sections of people. People of different socio-economic background residing in those villages are direct or indirect beneficiaries of the M.I. schemes. Primary information generated from 109 villages indicates the following:

- i) Around 80% belongs to marginal farmers having less than 1.00 ha of land;
- ii) About 15% having 1-2 ha of land belongs to small farmers
- iii) About 5% having land 2-10 ha belongs to medium farmers. Big farmers are negligible. In the villages of Jot Chaitani, Bharpota and Chaupira in Memari-I Block of Burdwan district, there are 281 households possessing about 221 ha of agricultural land. Amongst these 244 are marginal, 4 are medium farmers and 33 are small. Big farmers were not found. The remaining families (60) in those villages are dependent on agricultural labours and other allied activities.

5.4 OBSERVATION IN SAMPLE VILLAGES IN VARIOUS DISTRICTS

5.4.1 NADIA - 3 M.I. Schemes

In Nadia 3 M.I. schemes have been visited. Both the Executive Engineers (Agri-Irrigation and Agri-Mech) despite their busy schedule accompanied the Social Assessment team to the M.I. schemes.

- **Bhomrapara RLI, Haringhata**

The RLI at Bhomrapara cater to 17 hamlets covering an area of 60 ha with 157 farmers of which 65% are small and rest marginal. The project is commissioned on the brink of a huge natural watershed (beel) called Bhomra Beel. The beel is mainly rain-fed. It is learnt from the beneficiaries that the farming scenario of the area has since changed after the commissioning of this project. The pump is running for the last 42 years. On an average it runs 4000 hours a year. The main cultivation is Kharif, Rabi and Boro also. A few of the beneficiaries grow vegetables too.

Though the project is run by the department, a Beneficiary Committee exists for the project. The committee has engaged 4 people to monitor distribution of water in the command area, operation of pump on holidays and emergencies, collection of tax, etc.

During interaction the beneficiaries suggested that the Beel needs to dredge so that its water holding capacity increases since they are facing paucity of water. Farmers who have land at the end of the command area get less water. Moreover, the field channels being 'kutchra' and the land being loamy, the seepage loss is higher. When asked regarding their own management of the scheme, the beneficiaries preferred that the government should continue looking after the scheme as it is. However, they like to have more training on operation and maintenance of pump. During lean period the beneficiaries are also engaged in NREGA, masonry work, fishing, etc.

While mainly the males are engaged in farming the women try to augment the family income through forming Self Help Groups (SHG). There are 100 SHGs for women and these groups are engaged in micro credits and handicrafts business. The young generation being educated often show reluctance to farming. They prefer official jobs.

The village has got 2 ICDS centers run by women and Child development Department, GoWB, 4 Primary schools and one High school. Some of the beneficiaries mentioned the problem of Arsenic in drinking water.

- **Dahakula, Karimpur - I**

The scheme is situated on the no man's land of India –Bangladesh Border on the river Mathabhanga. It is a major RLI scheme and caters to 2 mouzas with 115 beneficiary farmers. 99% of these farmers are marginal. They grow rice, wheat, mustard, jute and banana. The soil is loamy and sandy. The scheme was commissioned in 1974. During rainy season the pump is shifted to a higher place. The scheme has a beneficiary committee but the function of this committee is limited. A major portion of the command area has fallen in the no man's land and as a result every time the farmers go to the field they have to take permission from the Border security Force authority. After the sunset they are normally not allowed.

The farmers informed that they get water during cultivation but sometime due to low voltage the pump does not work. It takes long time in case of any fault in the machine or transformer breakdown. The coordination between WRDD and that of State Electricity Board seems to be not sufficient. There are cases of migration to other

places from this farming community. Some of the farmers have even gone to Dubai as laborer.

The village has got 1 ICDS centre, 1 Primary school and 1 nearby High school. Average family size was found to be 7. There exists no SHGs but most families do goat rearing business.

- **Uttar Bahirgachi, Nakashipara HDTW**

This Heavy Duty Tube Well caters to 250 families of which 88% are marginal farmers. The scheme was initiated in 1994. Its command area is 40 ha. The beneficiaries of this scheme are engaged in farming activities throughout the year. In fact they have pre kharif produce also. During interaction the farmers informed that the field channels being 'kutcha' they go out of water some time, especially when the machine can not be run to its fullest capacity due low voltage. The SA team observed some shallow tube wells also. On inquiry it was learnt that during problem time they hire these shallow pumps to save their crops. The farmers reported that the service from the State Electricity Board needs improvement. Farmers feel that the spout to spout pipe line is laid with PVC pipe and this pipe often gets leaks due to pest, rabbits, etc. They prefer RCC pipes. Farmers having land at a distant face crisis of water as it takes long time. This they feel wastage of water. The beneficiaries have their committee to look into operation of the pump during holidays, collection of tax, etc.

The village has got 1 ICDS centre, 1 Primary school, 1 health centre and 6 SHGs. The SHGs are engaged in mid meal cooking, NREGS, etc. There are migration from this village to places for jewellery work, 'Zari' work, carpentry and masonry work. A brief detail of the schemes is given in **Table 5.4**.

Name of the District: Nadia

1	Name of the block:	Karimpur-I	Haringhata	Nakashipara
2	Name of the scheme:	Dahakula RLI Major (Mathabhanga River)	Bhomrapara RLI, (Bomra Beel)	Uttar Bahirgachi
3	Type of the scheme:	RLI	RLI	HDTW
4	Type of the beneficiary:	Marginal Farmers – 114, Small Farmers - 1, Total – 115	Marginal Farmer - 47, Small Farmer – 110, Total – 157	Marginal Farmer - 213, Small Farmer – 37, Total – 250
5	Cultivable Command Area (CCA):	41 ha.	60 ha	41 ha
6	Villages benefitted:	Dahakula, Baruipara- 2 Mouzas and 4 villages	17 villages	Sheikpara , Dafadarpara, Purbapara
7	Crops and cropping pattern:	Rice, Wheat, Mustard, Jute and Banana. Multiple cropping done in the command area.	Boro, Aman, Vegetables. Multiple cropping done in the command area.	Til, Jute, Paddy, Wheat, Mustard. Multiple cropping done in the command area.
8	Type of soil:	Loamy, Sandy	Loamy, Clay	Loamy, Clay
9	Cropping Intensity and crop yield:	50% for Aman	200%	170%

10	Maintenance:	Department	Department	Department
11	Educational Background of the Beneficiaries:	Beneficiaries are literate	Beneficiaries are literate	Average Literacy
12	No. of Educational Institutions:	1 ICDS, 1 Primary school, and 1 High School	2 ICDS, 4 Primary school, and 1 High School	1 ICDS, 1 Primary school, and 1 High School
13	Average Family size:	7 members	5 members	10 members
14	Electricity Supply:	Electricity supply is a problem. Voltage remains low during April and May	Electricity supply and voltage is good	Electricity supply is a problem, SEB service is not good, no stabilization system, water distribution is not uniform (nearest field get maximum water supply than farthest field, that's why they do not cultivate Boro, paddy).
15	Other Informations:	Education level of the young generation is up to High School. They try to go to Dubai and other places as cheap labour to earn money. They have beneficiary committee but their function is very limited. Since their cultivable land is situated in the Bangladesh border known as the 'No mans Land' they get permission twice a day to enter their land only if they show voters ID card. They have to leave their land before 4 pm.	Young boys and girls cannot continue their studies after 'Madhyamik' (10th standard) due to poor economic condition. Other than fisheries beneficiaries are engaged in NREGA, fisheries, masonry etc.	Other than own land cultivation, they (beneficiaries) do small business, grocery, daily wage earner. Two members supervise the water distribution, machine operation and tax collection from the beneficiaries. (One government operates the machine and after his duty time member of this committee operates this machine).
		Most of the time their ripe crops are harvested by the people who live on the other side of the border. As such the poor farmers loose all their crops.	Beneficiary committee is formed and they have 4 members to supervise the land wise water requirement, water distribution, machine operation and tax collection. (One government operator operates the machine and after his duty time member of this committee operates this machine). They use chemical fertilizers. It is important to note that the surface water is of good quality, because in water this type of chemical is absent. During April and May, 15% of the land is not irrigated due to low water level.	They use chemical fertilizers. It is important to note that the surface water is of good quality, because in water this type of chemical is absent.

5.4.2 24 Parganas (North) - 5 M.I. Schemes

- **Deora – Bagda:**

This scheme is a mini RLI on the river Ichamati at India-Bangladesh Border. It caters to 80 marginal farmers and its command area is 20 ha. The scheme was initiated in the year 2005 and handed over to the beneficiary committee in the same year. This is a diesel operated scheme. It has got a 9 member beneficiary committee and this committee manages the scheme well. In addition to fuel charges they collect extra money from the beneficiaries to carry out other works like maintenance of the pump, payment to supervisors who are looking after water distribution in the field, etc. The beneficiary informed that they are to purchase diesel at a higher cost. The BSF authority also takes away diesel while transporting to the field. Every time they bring diesel they are required to produce a certificate from the Panchayat which is not always an easy task and it is time consuming too. Moreover, the running cost is also higher with diesel. They preferred that the scheme be converted into electrically operated one.

Other than farming they are also engaged in NREGA schemes. The women members are engaged in Beedi rolling. 1000 rolled Beedi fetch them an earning of Rs 25 a day. Many young people are migrating from the village to Gujarat, Mumbai and Delhi and even to Dubai.

The village has got 2 ICDS centers, 1 Primary school, 1 High school, 1 Health centre and 3 SHGs. All beneficiaries belong to SC community.

- **Aira, Habra-I:**

Aira is a HDTW scheme covering an area of 40 ha and catering to 150 families. All these farmers are marginal farmers. The harvest 3 crops a year. The beneficiaries have their own committee. One member of this committee operates the pump during holidays though he is not trained. They complained about low voltage. The area falls under the Habra Municipality but they do not get any facility from the municipality. Rather, they being in the municipality area they are to pay more tax. The SA team separately talked to a group of women regarding their activities. They are not aware of the various schemes available with the government. The scheme though run by the department it appeared that beneficiaries take main responsibility of operating of the scheme.

The village has got 3 ICDS centers, 1 Primary school. The High school is far and the Health centre is 4 km away. There exist 5 SHGs and they work in the field of micro-credit only.

- **Mamudpur, Barrackpore-I**

This scheme is a medium Deep Tube well installed in 1972 and covering an area of 26 ha with 100 beneficiary families. 90% of the beneficiaries are marginal farmers. They harvest 2 crops a year. The scheme was handed over to the beneficiaries in

2002. The beneficiaries have a 7 member committee who looks after the operation, maintenance of the pump, distribution of water and collection of tax, etc. The committee has appointed 2 people to look after water distribution in the fields. They get Rs1000/ per head per month during the season. They have also 1 operator who gets Rs 10000 during aman and boro. The operator is not trained. Small maintenance is taken care of by the committee, but for major repairing they go to the department.

During off season farmers are engaged in other professions like van rickshaw pulling, Masonry work, NREGA work, etc.

The village has got 1 ICDS centre, 1 Primary school, 1 Health Centre, 1 High school. The education level is good.

- **Debitala, Minakhan**

The SA Team was shown a Canal Irrigation site. The canal is in the vested land and by rotation Panchayat or Irrigation department dress or de-silt the canal. This year the Irrigation department has carried out re-excavation work in the canal so that its water storage capacity increases. The canal is basically rain-fed and can provide water to 100 acre. Total number of beneficiaries attached to this scheme is 100 marginal farmers. They cultivate two crops a year- Boro and Aman. There is no pump set installed. Farmers hire shallow pumps for lifting water from the canal. They pay Rs 40 per hectare excluding the cost of diesel. Diesel cost is higher than that of market rate. Farmers who have their own pumps they use that and even hire out also. The command area is on either side of the canal. During interaction the farmers suggested that the depth of the canal should further be increased so that they get adequate water during farming season. Water exists only for 7 months in a year.

The beneficiaries belong to minority community. There is 1 ICDS centre, 1 Primary school. The High school is 1 km away and the health centre is 4 km away. Literacy level is quite low. The villagers work as daily labourer during off season.

- **Barneajeer, Patkulpota, Sandeshkhali - II:**

This is again an irrigation scheme from the canal. The department maintains the canal. There is no beneficiary committee. Farmers have to lift water at their own cost. The rate is Rs 10 per bigha excluding the cost of diesel. The farmers complain that the depth of the canal is very less and water remains only 9 months. Farmers want that the canal be re-excavated to such a depth that water remains throughout the year. They also suggested for electricity as the cost of diesel is higher than that of prevailing market rate.

The village has got only 1 ICDS centre and 1 Primary school. The population belongs to SC and ST communities. The literacy rate is low. There is hardly any other option for earning income. A brief detail of the schemes is given in **Table 5.5**.

Name of the district: 24 Parganas (North)

1	Name of the block:	Bagda	Barrackpur - I	Habra - I	Minakhan	Sandeshkhali - II
2	Name of the scheme:	Deara RLI - Mini II (River Icchamati)	137 T, Mamudpur West DTW	162 HDTW Aira	Poiner Canal Minor Irrigation (Rain fed Canal)	Patkulpota Canal Minor Irrigation (Rainfed Canal)
3	Type of the scheme:	RLI - Mini II	DTW	HDTW	Canal Minor Irrigation	Canal Minor Irrigation
4	Type of the beneficiary:	Marginal Farmer = 80, Total = 80	Marginal Farmer = 90, Small farmers =10 Total = 100	Marginal Farmer = 150, Total = 150	Marginal Farmer = 100 Total = 100	Marginal Farmer = 40 Total = 40.
5	Cultivable Command Area (CCA):	20.23ha	26.30ha	40.41 ha.	40.41 ha.	32.4 ha
6	Villages benifitted:	-	-	-	-	Bermajur No. 1, Aitepara, Bermajur, Majherpara, Bermajur, Nutanpara
7	Crops and cropping pattern:	Aman, Aus, Mustard, Vegetable, Jute Multiple cropping pattern is practised.	Aman and Boro Multiple cropping pattern is practised.	Aman, Boro, Banana, Potato, Vegetable Multiple cropping pattern is practised.	Aman, Boro Multiple cropping pattern is practised.	Aman, Boro,
8	Type of soil:	Sandy, Loamy	Clayey,loamy	Sandy, Loamy	Clay	Sandy
9	Cropping Intensity and crop yield:	-	-	Boro = 28 acre	Aman = 10-12 bags/bigha. Boro = 3-4 bags/bigha.	-
10	Maintenance:	Maintained by the Beneficiary	Maintained by the Beneficiary	Maintained by the Department	Maintained by the Beneficiary	Maintained by the Beneficiary
11	Educational Background of the Beneficiaries:	Average Literacy	Upto primary	-	Average Literacy	Above primary
12	No. of Educational Institutions:	ICDS = 2, Primary School =1, High School = 1, SHG=3 (Women work only for social work).	ICDS = 1,Primary School = 1, High School = 1, Health Centre = 1	ICDS = 3, Primary School =1, Health Centre= 1.	ICDS = 1, Primary School = 1, Health Centre = 1.	ICDS = 1, Primary School = 1, Health Centre = 1.
13	Average Family size:	5 members.	5 members.	6 members.	12 members	6 members.
14	Electricity Supply:	-	Low voltage and load shedding is the main problem.	Electricity exist in this mouza. Sometime low voltage disturbs the water distribution.	-	-

15	Other Information	<p>Beneficiaries are all SC. Beneficiary Committee exist with President, Secretary and Cashier. Total no. of members is 9. This mouza is refugee colony. Refugees are from Khulaa and Faridpur district of Bangladesh.</p> <p>Beneficiary committee maintains this RLI. They Supervise the water distribution and operate the machine. Committee members collect the money from all the beneficiaries as per crops like, they collect Rs. 60 / bigha for paddy Rs. 40 / bigha for mustard excluding diesel cost. Because, each beneficiary has to buy and collect the diesel. Before this RLI, they cultivate only half of the present utilized land.</p>	<p>Beneficiary Committee of 7 members with President, Secretary and Cashier. 1 of the member is operator. But he is not trained. Operator get Rs. 10,000/- for 2 (Aman and Boro) seasons from the collected money from all beneficiary. Committee members collect the money from all beneficiaries crops basis, like for Boro crop money amount is Rs. 900 / acre and for Aman crop money amount is Rs. 300 / acre</p> <p>If any minor problems arise in machine, operator can repair that problem. But in case of major problem, they call mechanic from Agri-Irrigation division from Barasat Committee supervise and maintenance the land and water distribution.</p>	<p>Beneficiary Committee exist with 10 members. 1 Govt. operator posted but after his duty hours 1 member of this committee operates the machine. He is not trained. Beneficiaries pay tax, for Boro they pay Rs. 816 / acre, for Aman they pay Rs. 204 / acre and for vegetables they pay Rs. 340 / acre.</p> <p>Beneficiaries (cultivators) are not so educated, few literate and few illiterate. But their children go to schools and college. Group of women are very much active and energetic. They need some help from Govt. for their side income. Their main complain is they do not get any help for cultivation and any other scheme from Municipality.</p>	<p>Beneficiary Committee exist. Few farmers have own pump. Diesel cost is Rs. 36 / litre. Rent of pump is Rs. 40 / hr excluding diesel cost, i.e. in total Rs. 600 / bigha. Beneficiaries are all from minority community. Maximum beneficiaries are illiterate. Children go to school. Other than cultivation, they work as labourer.</p> <p>Depth of canal is not sufficient for minimum coverage of boro cultivation. They suggested for increasing the depth because there is no other option.</p>	<p>Beneficiary Committee is yet to be formed. After completing the excavation of this canal, it will be handed over to beneficiaries. After that they will operate the two machines, water distribution, fuel cost etc. Pumps will be operated by diesel. Diesel cost is Rs. 36/litre, 10 HP Machine consumes 1 litre/hr.</p> <p>Beneficiaries are 50% SC and 50% ST Community. But educational level is good. In every family there is at least one graduate member. They do not go outside for service. They work as labourer.</p>
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	:	<p>They suggested for electrification in this RLI. Electric supply is present in this mouza. They suggest for electric connection because diesel is costly. They face various problem at the time of collection of diesel. BSF is a main problem. If any person do not show Panchayat certificate then BSF do not allow this diesel and person lost all the fuel. If there any urgency arise, they cannot use this diesel which affect on cultivation process.</p> <p>Their main occupation is cultivation other than cultivation they work for NREGA Project. Young boys and girls going to school and college. Few male persons go to Dubai, Gujrat, Mumbai and Delhi. All the women members of each family is engaged with "Beeri" binding. It is also another source of income. They work morning and evening. Each day each woman can make 1000 'beeri'.</p>	<p>Other profession is Masonry, NREGA worker, Rickshaw and van puller</p> <p>Main cultivators are not highly educated but literate. But young generation becoming graduate and service holder.</p>	-	-	<p>Depth of newly excavated canal is not sufficient for water reserve. In rainy season canal gets flooded for this reason. They suggested for more depth for maximum coverage of cultivable land. Because they are fully dependent on this land use. They have no other option</p>
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5.4.3 HOOGHLY 7 M.I. Schemes

- **Hatipukur, Masat, Canditala I**

The SA team visited a potential water harvesting tank. The tank was excavated in 1983 but after that no re-excavation is done. As a result the depth of the pond has been decreased. The pond has the capacity of covering 12 ha of land. Its catchment area is 6 ha and 3 canals also lead to this pond. One of the canals is connected to DVC water source. The beneficiaries do not have any committee. They harvest 3 crops a year including vegetables. A few farmers are also engaged in professions like rickshaw van pulling, tailoring, etc. During interaction the farmers suggested that the present depth of the pond which is 2.4 m is not sufficient to hold water in the pond throughout the year.

The village has got 4 ICDS centers, 4 Primary schools, 1 High school and a Health centre nearby. There exists 7 SHGs who are engaged in hatchery.

- **Hamia, Khanakul**

This RLI scheme is a medium one with coverage of 34 ha. The beneficiaries are all marginal farmers. The scheme has been handed over to the 7 member Beneficiary Committee. The education level is quite good of this committee. The committee is running the scheme successfully. They have appointed 2 persons to look after the distribution of water in the field and pay Rs 2000 per head per month for 7 months. They collect tax to cover the cost of electricity and supervision. They proposed to convert the scheme into an electric run one. The farmers spoke of the need for training on pump operation, maintenance, etc.

The village has got 3 ICDS centre, 2 Primary schools, 1 High school at a distant. The female members of the village have formed 6 SHGs and they engaged in 'Zari' work, cattle management, etc.

- **Damodarpur, Goghat**

This is a major RLI scheme established in 1971 with coverage of 47 ha. All beneficiaries are marginal farmers. Total number of beneficiaries is 375. The scheme is maintained by the department. The department's operator here is a lady who has difficulty in coming to the site daily. As a result the committee has to carry out the operation of the pump themselves. They prefer that a male operator is appointed immediately. The farmers also requested to increase the number of spouts. The farmers also stressed upon the need for proper training of the members of the beneficiary committee. Regarding the handing over of management of the scheme they are not ready now to accept.

The village is educated one and connected with metal roads. There are 3 ICDS centre and 4 Primary schools. No of HS school is 1. The women folks have formed 12 SHGs and they are engaged in 'Zari' and jute work.

- **Multi, Pandua**

This Deep Tube well has coverage of 40 ha with 150 beneficiary families. The scheme was established in 1973 and re-drilled in 1993. The majority of the beneficiaries are small farmers. However, there are at least 30% big farmers. The overall economic condition is good and they have adequate agricultural produce. The scheme is run by the department. The operator stays in the site. However, in case of emergency the members of the beneficiary committee operate the pump. He has been given a preliminary training by the department. The low voltage problem exists. The farmers also carry out teak plantation as a source of extra income.

The village has got 2 ICDS centers and 2 Primary schools. Young generation prefers to go for service.

Close by the above there is a LDTW scheme run by the department. The scheme was installed in 1984. It covers an area of 6 ha with 94 beneficiaries. 3 harvests come from this scheme. 50% of the beneficiaries are ST (Mandi, Hansda). The Beneficiary Committee is very active here. They have organized the stay of the government operator in the village itself. In addition they have their own operator who helps in running the pump in case of dire necessity. The area has got some problems. The topography of the land is not plain but undulating. There field is undulating. As a result water does not flow equally and automatically. They had to stop boro cultivation due to paucity of water. Water level falls during dry season.

The village has got 1 ICDS centre and 2 Primary schools.

- **Chandanpukur**

The SA team was shown a water harvesting tank in this spot. The tank is owned by a single farmer and it was not clear during meeting with the villagers whether the water would be given to the farmers if it is developed as a water harvesting tank. The owner was absent during interaction. The tank however has the potential of covering 20 ha of land around it. Not much data was available.

- **Debanandapur**

This is a department run Deep Tube Well centre. It covers an area of 40 ha and benefits 125 families. 60% of the beneficiaries are marginal farmers. The scheme was established during late seventies. Beneficiaries of this scheme harvest 3 crops a year. The beneficiary committee looks after the collection of tax, distribution of water, etc. In the absence of the government operator they operate the pump also. They have their paid supervisor to do such things. The problem of low voltage was mentioned by the beneficiaries during interaction. The delay in attaining electrical fault by the State Electricity Board people was also mentioned

Education standard of this village is good. Young people go out in search of jobs. It has got 4 ICDS centers, 2 Primary schools and a High school.

A brief detail of the schemes is given in **Table 5.6 – 4.7.**

Name of the district: Hooghly

1	Name of the block:	Chanditala	Chinsura	Pandua
2	Name of the scheme:	Hatipukur Pond-Water Harvesting Tank	Debanandapur - DTW	Multi LDTW
3	Type of the scheme:	Water Harvesting Tank	DTW	LDTW
4	Type of the beneficiary:	Marginal Farmer - 100, Small Farmer – Nil, Total – 100	Marginal Farmer - 70, Small Farmer – 55, Total – 125	Marginal Farmer - 7, Small Farmer – 67, Total – 74.
5	Cultivable Command Area (CCA):	12 ha	40.5 ha	6.07 ha
6	Villages benefitted:	Mashat Ghoshpara, Banerjee Para, Pal Para, Ghati Para	Debanandapur, Krishnachandanpur, Manaspur, Choto Khejuria	-
7	Crops and cropping pattern:	Aman, Boro, Vegetables (Potato) Multiple cropping is done in the command area.	Jute, Til, Aman, Boro, Mustard. Multiple cropping is done in the command area.	Aman, Mustard, Potato, Vegetables
8	Type of soil:	Loamy	Clay, Loamy	Loamy, Clay
9	Cropping Intensity and crop yield:	-	-	-
10	Maintenance:	Maintained by the farmers (not Beneficiary Committee).	Maintained by the Department	Maintained by the Department
11	Educational Background of the Beneficiaries:	Beneficiaries are educated up to Primary school level	Educated above Primary school level	Beneficiaries are literate
12	No. of Educational Institutions:	4 ICDS, 4 Primary school, and 1 High School	4 ICDS, 2 Primary school	1 ICDS, 2 Primary school.
13	Average Family size:	5 members	5 members	4-5 members
14	Electricity Supply:	-	Electricity supply and voltage is good	-
15	Other Informations:	There is no beneficiary committee. They are not able to renovate this pond. Present depth of water is 2.4m which is not sufficient to meet the need of irrigation. If government excavates this pond the surrounding land will be covered. They need proper guidance for formation of beneficiary committee and respective roles and responsibilities for proper maintenance and utilization knowledge.	Members of the beneficiary committee supervise the water distribution in the land, time to time operation of the machine in the absence of Government operator though they have no training to operate the machine. They collect the tax from all beneficiaries and for the above volunteer works they get small amount remuneration from all beneficiaries.	Young boys & girls usually go to the college and also are service holders. Beneficiaries are 50% ST (Mandi, Hansda etc.)

	Other than cultivation beneficiaries are engaged in tailoring, rickshaw drivers and van drivers etc. Few young boys and girls are into government service.	Educational background is good. Maximum young boys and girls are into service and move to other places for any type of job.
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Name of the district: Hooghly

	Name of the block:	Pandua	Khanakul-II	Goghat
1	Name of the block:	Pandua	Khanakul-II	Goghat
2	Name of the scheme:	Deep Tube Well Clusters	Tarajit Kotalpur RLI	Damodarpur RLI
3	Type of the scheme:	Deep Tube Well	RLI	RLI
4	Type of the beneficiary:	Marginal Farmer – 35, Small Farmer – 105, Big Farmers – 10 Total – 150.	Marginal Farmer	Marginal Farmer
5	Cultivable Command Area (CCA):	40.5ha	34 ha	46.5 Ha
6	Villages benefitted:	-	Hanua, Manikdeep, Jhari Chawk	Uttarpara, Paschimpara, Dakshinpara
7	Crops and cropping pattern:	Boro, Aush, Aman, Mustard, Potato, Vegetables	Rice, Potato. Ground Nut, Vegetables	Potato. Ground Nut, Jute, Boro
8	Type of soil:	Sandy, Loamy	Sandy, Loamy	Sandy, Loamy
9	Cropping Intensity and crop yield:	-	-	-
10	Maintenance:	Maintained by the Department	Maintained by the Beneficiary Committee.7 in no	Maintained by the Beneficiary Committee.
11	Educational Background of the Beneficiaries:	Beneficiaries are educated up to Primary school level	Graduate, Madhyamik, VIII standard	Beneficiaries are educated up to Primary school level
12	No. of Educational Institutions:	2 ICDS, 2 Primary school	3 ICDS, 2 Primary school	3 ICDS, 4 Primary school and 1 High School
13	Average Family size:	-	-	-
14	Electricity Supply:	-	-	-
15	Other Informations:	Young generation move out for services. Other than cultivation, their income generation source is plantation of teak wood tree	Villages used to go outside namely Medinipur, Howrah for agricultural work.	No. major power cut, Year of Establishment of the Scheme – 1971, NREGA Scheme is functional in this area

	The Beneficiary committee supervise the water distribution, operate the machine in the absence of government .Operators get training from government operator	The scheme is run with diesel but they are looking for electric connection which could minimize the tax amount besides avoiding miscellaneous problems like carrying of Diesel,storage etc.	There is no male operator in this area. One female person is there as on die hard case. A problem of proper handling is seen. In case of hand over the scheme the beneficiary committee would face lack of time to attend office
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5.4.4 MURSHIDABAD – 5 MI Schemes

- **Ratanpur**

Ratanpur RLI at Bhapta is a major RLI scheme. Its command area is 76 ha and benefits 300 farming families of which 99% are marginal farmers. The scheme was installed in 1990. The beneficiary committee is very active here. The collection of tax is good. The tax collected during 2007 was Rs. 36,182/-. The beneficiaries belong to SC and Minority communities. The beneficiaries informed that they do not have to go out for jobs as they remain busy in their own land. They produce lot of vegetables also. The beneficiary committee is very big here with 21 committee members. The farmers mentioned the problem of low voltage. They do not have training on operation and maintenance. Regarding their own management of the scheme they responded that they are yet ready for that.

The village has got 3 ICDS centers and 4 Primary schools, 2 High schools and 1 Madrasa. Most of the young people are also attached to agriculture. As a result there is very little migration from this village. Sometimes they get engaged in NREGA work. The village has got SHGs and members of these SHGs are engaged in ‘beedi’ rolling, vegetable selling, etc.

- **Niamatpur, Lalgola**

This is a major RLI scheme with 200 marginal farmers as its beneficiary. It was installed in 1972 and covers 120 ha of land. The beneficiaries harvest 2 crops a year. The beneficiary committee has 8 members. They manage the scheme during holidays. But they are not ready for handover of the scheme since they require training for it. The village has got ICDS centre and 3 Primary schools. There is one HS School. The female members of the families have formed SHGs and are engaged in Mid-day meal cooking, beedi rolling, etc.

- **Dasturhat, Sagardighi**

This is a major RLI scheme. The scheme was established in 1977 and covers an area of 120 ha. The number of families who are benefitted from the scheme is 150. 95% of the beneficiary families are marginal. The beneficiary committee has got 17 members. During interaction the farmers, they mentioned problems like soil erosion on the river bank.

Problem of rabbit was also mentioned. Low voltage is also a problem.

The education standard of the village is good. It has got ICDS centre, MSKs, Primary school. The village is facing a migration problem of young generation. They prefer service to agriculture.

- **Dighirpar, Raninagar**

This RLI covers 32 ha of land and it benefits 200 families. It was installed during 1974. After installation of this scheme the agricultural activities have increased. They face employment crisis and as a result many families go out of the village for livelihood. The harvest they get out of their land is not adequate to maintain their families throughout the year. Regarding management of the scheme by themselves they are not interested at all because of the high cost of maintenance.

The village has got ICDS centre and 3 Primary schools. Women folks have formed SHGs and they engaged in cooking midday meals, beedi rolling, etc.

- **Bhapta**

This Deep Tube Well was established in 1965, one of the oldest DTW the SA team has visited so far. It has got 85 beneficiary families and 90% of them are marginal farmers. Its command area is 41 ha. The farmers mentioned that the produce they get from their field is not adequate for the family for whole year. They mentioned the problem of Arsenic, low voltage, iron deposition in the tube well, wastage of water, irregular payment of tax, etc.

The village has got 6 Primary schools, 2 High schools. There are ICDS and SSK centers also. A brief detail of the schemes is given in **Table 5.11**.

Name of the district: Murshidabad

1	Name of the block:	Lalgola	Beldanga-I	Beldanga-I	Raninagar	Sagardighi
2	Name of the scheme:	Basumati I RLI Project	Bhapta 10 M Scheme	Ratanpur, Bhapta RLI	Dighir Pahar RLI	Dasturhat No. 2 Scheme
3	Type of the scheme:	RLI	DTW	RLI	RLI	RLI Major type
4	Type of the beneficiary:	Marginal Farmer	Marginal Farmer = 90%, Small Farmers = 10%	Marginal Farmer	Marginal Farmer	Marginal Farmer = 95%, Small Farmers = 5%
5	Cultivable Command Area (CCA):	121.4 Ha.	41.3 Ha.	75.6 Ha.	32.4 Ha.	121.4 Ha.
6	Villages benefitted:	Kadamtala, Ram Chandrapur, Chamakpur, Balipa, Singha	Bhapta, Uttarpara, Dakshinpara, Niz Para, Sankar Para, Mohula	Ratan Gopalbati, Maheshpur, Bhapta, Char Shibpur	Dighir Pahar, Kalaberia, Char Islampur	Hatpara, Baganpara, Shibpur, Dasturhat, Nichupara, Madhyapara, Tiktiki Para, Biswanathpur.

7	Crops and cropping pattern:	Jute, Aman, Rabi, Boro	Jute, Aman, Rabi, Boro	Jute, Aman, Rabi, Boro	Boro, Aman, Wheat, Rai, Til, Banana	Aman, Jute, Wheat, Rai
8	Type of soil:	Sandy	Sandy	Sandy	Sandy	Sandy
9	Cropping Intensity:	-	-	-	-	-
10	Maintenance:	Maintained by Department	Maintained by Department	Maintained by Department	Maintained by Department	Maintained by Department
11	Educational Background of the Beneficiaries:	Upto Primary level	Upto Primary level	Upto Primary level	Upto Primary level	Upto Primary level
12	No. of Educational Institutions:	ICDS, 3 Primary school, and 1 High School	ICDS, 6 Primary school, and 2 High School, High Madrasa.	4 ICDS, 2 Primary school, and 3 High School	ICDS, 3 Primary school, and 1 High School	ICDS, 1 Primary school
13	Average Family size:	-	-	-	-	-
14	Electricity Supply:	-	Electric supply is in low voltage.	Electric supply is in low voltage.	-	Electric supply is very poor
15	Other Informations:	Total no. of beneficiaries are 120. Irrigation tax as per Govt. rate. Beneficiary Committee 7-8 in members. Young generation mainly go to outside for masonry work. Beneficiary Committee is not ready to take over the charges	Murshidabad is Arsenic affected. Iron in ground water Water damage is there. In case of handover the committee would face problem with irregular payment of tax.	Total no. of beneficiaries: 300. Irrigation tax as per Govt. rate. Total amount of tax collected in the last year – Rs. 36, 182/-. Most of the young generation also attached to the agriculture NREGA is present. SHGs are there (engaged in bidi making, vegetable selling). Not ready to take over the project as the tax will be more. There is no training for the beneficiary committee to operate the machine.	Total no. of beneficiaries: 200. Irrigation tax as per Govt. rate. 12) SHGs are in this area (Mid day meal helper, Bidi industry) NREGA is very poorly implemented. There is no permanent income in this area. No. of people moving out is very high.	Total no. of beneficiaries : 150. Irrigation tax as per Govt. rate. Soil erosion is a major problem. Young generation go to outside for masonry work. Rabbits and other problem related to water damage

5.4.5 HOWRAH - 1 MI Scheme

- Ghoshpur, Amta-I

This is an ideal example of handover scheme. This is a major RLI scheme and covers 60 ha of land with 350 beneficiaries. The scheme was established in 2006 and handed over to beneficiary committee in 2007. The committee has 19 members. All 350 beneficiaries are marginal farmers. This RLI is only for Boro cultivation. The machine runs for only 3 months in a year. Soil type is clay and the farmers do want to grow other crop. The beneficiary has their own Bank Account in the name of the committee. They collect tax to cover the cost of fuel and other supervision costs. The committee has appointed 2 operators who stay 24 hours in the project site. Their salary is Rs 3000 and Rs 2000 per month. The committee collected tax of Rs 1.43 lakh during last Boro season. They are planning electrification of the scheme so that they can increase their profit.

Since the main cultivation from this scheme is Boro, the farmers during rest of the time in the year are engaged in making power glass for spectacles. The population density of the village is very high. However, the migration rate is not very high. Only 5% of the young people go out for jobs like Gold and diamond jewelry. It is noticeable that there is no government service holder in the village. The farmers mentioned that they require four more chambers in **the scheme. A brief detail of the schemes is given in Table 5.12.**

Name of the district: Howrah

1	Name of the block:	Amta-I
2	Name of the scheme:	Ghoshpur RLI
3	Type of the scheme:	RLI
4	Type of the beneficiary:	Marginal Farmer = 350, Small Farmer = Nil, Total = 350
5	Cultivable Command Area (CCA):	60.7 Ha.
6	Villages benefitted:	Ghospur, Mahisgola, Sherpur, Madhyakul, Chandrapur, Bhandargacha, Chatra
7	Crops and cropping pattern:	Aman, Boro. Multiple cropping is done in the command area.
8	Type of soil:	Clay
9	Cropping Intensity and crop yield:	Boro - 35 quintal / acre, Aman - 16 quintal/acre
10	Maintenance:	Beneficiary Committee
11	Educational Background of the Beneficiaries:	Beneficiaries are literate
12	No. of Educational Institutions:	ICDS- 5, Primary School – 2, MSK – 1, High School – 2
13	Average Family size:	-
14	Electricity Supply:	-
15	Other Informations:	This RLI utilized only for Boro cultivation. Machine runs only 3 months. Soil type is clay and for this reason other crops cannot be cultivated by the farmers. Aman cultivation depends on nature. But before this MI scheme they cultivate only 50% of the present land, now cultivation is almost doubled.

		Name of Beneficiary Committee is “Ghoshpur Krishak Bandhu Nadi Jalatollon Prakolpa”.
		<p>This project covers – 2 GPS, (i) – Bhadargacha. (ii) – Chandrapur. Committee formed in the year 2007 Committee consist of 19 members, headed by President & Secretary. 2 Machine Operators appointed among beneficiaries. 2 operators stay in the place 24 hours in the Boro season. They supervise water distribution, minor machine repairing. In case of major problem then they call outside mechanic. They are paid persons, among them one person get Rs. 3000/month and other Rs. 2000/ month.</p> <p>Beneficiary committee collects the money from all beneficiaries like: Rs. 450/- bigha from these who hold low land and Rs. 500/- bigha from those who hold upper land. This collected money they spend it for diesel machine maintenance, remuneration of operators. But diesel is very costly for beneficiaries as it requires to be transported which require extra cost.</p> <p>Other than Boro and Aman cultivation beneficiaries are engaged in socio-political activities.</p> <p>Density of population is very high in this area. Young boys and girls are going to college, specially girls from minority group.</p>

5.4.6 PURBA MEDINIPUR - 5 MI Schemes

- **Chakbhabani, Patashpur**

This is a Deep-Tube well scheme installed in 1974 but from last 4 years sand is coming out from the Tube well. The scheme has a command area of 40 ha with 350 beneficiaries. 50% of the beneficiaries are SC. The DTW is used only for Boro. Last 4 years the beneficiaries are not using the Deep Well as it is choked. Instead they have made their own arrangement. The area being flood prone cultivation of other crops is also a risk. The beneficiary committee of this scheme has 5 members. They collect tax and monitor water distribution from source they have created. .

The village has got 3 ICDS centers, 2 Primary schools, 1 High school and a Health centre. There are 10 SHGs formed and these SHGs are engaged in mid day meal cooking.

- **Lochubad, Patashpur**

This HDTW has a command area of 30 ha with a total number of beneficiaries of 100. 92% are marginal farmers but mostly general caste people. The scheme was installed in 1992. The farmers get two crops out of this scheme. The beneficiary committee has 8 members. They have their own appointed people to look after tax collection, distribution of water, etc. During discussion the beneficiaries mentioned the problem of load shedding and low voltage. One important point for this scheme was noted by the SA team that 20 ST families were brought to the site and given land to stay. They were assured of drinking water and electricity and other civic facilities. But even after 16/17 years gone, no such arrangement is made. These 20 ST families

showed their anger to the visiting SA team. They are extremely unhappy of this deprivation and demand for immediate solution.

The village has got 1 ICDS centre, 1 Primary school, 1 High school and a Health centre. There is only 1 SHG working in DWCRA scheme.

- **Gobardhanpur**

This is a LDTW having a command area of 40 ha with 150 numbers of beneficiaries. 75% of the beneficiaries belong to minority community. The scheme was installed in 1983. The scheme is useful for 1 harvest in a year. This is a flood prone area and so cultivation is difficult. The beneficiary can only cultivate Boro paddy. But that too is hampered due to prolonged and frequent load shedding and also low voltage. During rest of the year farmers work as daily laborer. The beneficiary committee is not very active. The committee has only 5 members. Regarding management of the scheme by themselves they are not interested. The drinking water scarcity is also found in the village. There is one big pond at the entrance of the village used for fishery.

The village has got 2 ICDS centre, 2 Primary schools, 2 High schools. The health centre is 8 km away. There exist 2 defunct SHGs without any specific activities.

- **Aklabad, Egra**

This Minor Deep Tube Well covers 40 ha with 1200 beneficiaries. All beneficiaries are marginal farmers. The scheme was installed in 1983 and facilitates 2 harvests a year. The beneficiaries here are fully dependant on agriculture. They face problems like load shedding and low voltage. As a result they do not have adequate water in the field. Standing crops often suffer and the yield reduces. The beneficiary committee exists with 8 members. They have appointed supervisors to look after water distribution, tax collection, etc. Government operators are absent most of times because of official works in BDO office. The area is flood prone. Beneficiaries engage themselves in jobs like daily labourer, in the village or go nearby places in search of jobs.

The village has got ICDS centre and 1 Primary school. High school is 2 km away. There are 2 SHGs and they engaged in mat weaving and other social work.

- **Barakumarda**

This is a HDTW that covers an area of 30 ha with 108 beneficiaries. The scheme was installed in 1994. The beneficiaries are 80% marginal and 20% small farmers. They can harvest one crop a year. The beneficiary committee has 5 members. Two beneficiaries operate the pump almost every day as the government operator hardly comes. They are paid Rs 8000 per season by the beneficiary committee. The beneficiaries cultivate Boro but they can not do it properly because of frequent load shedding and low voltage. As a result they use private shallow tube wells. The SA team has seen 8 such shallow pumps. In absence of work during rest of the year young people migrate to Delhi and Gujarat.

The village has got 2 ICDS centers, 2 Primary schools, 1 High school. There are 72 SHGs formed but all their activities were not known. A few activities mentioned were mat weaving, mid day meal cooking in schools, etc. A brief detail of the schemes is given in **Table 5.13**.

Name of the district: Purba Medinipur

1	Name of the block:	Egra - I	Patashpur - II	Patashpur - II	Patashpur - II	Patashpur - II
2	Name of the scheme:	Aklabad DTW	Barakumarda HDTW	Chakbhabani DTW	Gobardhanpur LDTW	Lochubad HDTW
3	Type of the scheme:	DTW	HDTW	DTW (Choked)	LDTW	HDTW
4	Type of the beneficiary:	Marginal Farmer = 100, Total = 100	Marginal Farmer = 80, Small farmers =20 Total = 100	Marginal Farmer = 350, Total = 350	Marginal Farmer = 145, Small farmers = 5 Total = 150	Marginal Farmer = 92, Small farmers = 8, Total = 100
5	Cultivable Command Area (CCA):	40.41 ha.	28.33 ha.	40.41 ha.	40.41 ha.	30 ha
6	Villages benefitted:	-	Pradhanpara, Bera Para, Jana Para, Singha Para, Samanta Para. Multiple cropping is practiced.	Bera Para, Ghoraipara, Garai Para, Jana Para, Patra Para	West Gobardhanpur, East Gobardhanpur	-
7	Crops and cropping pattern:	Aman and Boro. Multiple cropping pattern is practiced.	Boro	Boro	Boro	Boro. Multiple cropping pattern is practiced.
8	Type of soil:	Alluvial	Clay	Clay	Sandy	Sandy
9	Cropping Intensity and crop yield:	-	-	-	-	-
10	Maintenance:	Maintained by the Department	Maintained by the Department	Maintained by the Department	Maintained by the Department	Maintained by the Department
11	Educational Background of the Beneficiaries:	Above primary	Above primary	Upto primary	Above primary	Above primary
12	No. of Educational Institutions:	ICDS = 2, Primary School =1, High School = 1, SHG=1 (They are involved in Mat weaving, Social work).	ICDS = 2,Primary School =1, High School = 1, Health Centre=1 SHG=72	ICDS = 2,Primary School =3, High School = 1, Health Centre=1 SHG=10 (They have no such work but few engaged in mid-day meal cooking)	ICDS = 2,Primary School =2, High School = 2, Health Centre=1 SHG=2 (They are not involved in any work)	ICDS = 1,Primary School =1, High School = 1, Health Centre=1 SHG=1 (Involved in DWACRA Programme)
13	Average Family size:	-	6 members.	-	8 members	6 members.

14	Electricity Supply:	Main problem is load shedding and low voltage.	Low voltage and load shedding is the main problem.	-	No electricity in these villages	Load shedding and low voltage is the main problem
15	Other Informations	Farmers cannot get necessary water for cultivation for long time due to load shedding and low voltage. 99% of the farmers depend on cultivation.	Beneficiary Committee formed with 5 members including MLA representative and Sabhapati representative. 2 beneficiaries supervise the water distribution and operate the machine all time because Govt. operator hardly comes.	Beneficiary Committee formed with 5 members. 2 beneficiaries supervise the water distribution and operate the machine. Their remuneration is Rs. 5000/- per season for 2 persons and tax amount is Rs. 900 / acre including above mentioned.	This mouza is heavily flood prone zone and for this reason farmers can cultivate only Boro. Due to load shedding and low voltage farmers cannot cultivate whole land in the season. Other than one time cultivation farmers are working on masonry, daily labour in another place. Farmers are mostly school final passed.	Beneficiary Committee exists with 8 members. 2 beneficiaries supervise the water distribution and operate the machine in absence of Govt. operator. Maximum time operator from beneficiary operates the machine.

5.4.7 BIRBHUM - 5 MI Schemes

- **Gara, Dubrajpur**

This Light Duty Tube Well Centre (as the beneficiaries call it) covers 30 ha of land and has got 90 beneficiaries. 88% of these beneficiaries are marginal farmers. The scheme was installed in 1973 and the farmers get 3 crops a year. The beneficiary committee does the usual work of water distribution and collection of tax. The committee has appointed 1 person to look after the water distribution and pay him either in cash or kind with crops collected from the beneficiaries.

During interaction it was learnt that the power supply was good. They also informed that they do not migrate outside village for jobs. Regarding management of the scheme by their committee they are not ready and informed that they are not interested in handed over schemes.

The village has got 1 ICDS centre, 1 Primary school, 1 High school and 1 Health centre. SHGs exist but number not known. They are mostly engaged in mid day meal cooking.

- **Ramnagar, Illambazar**

This Light Duty Tube well covers 20 ha of land and has 80 beneficiaries. It was established in 1973. The farmers of this scheme harvest 3 crops a year. The

beneficiary committee has 11 members and look after water distribution and tax collection. The committee has appointed 1 person for water distribution and he gets Rs10/per bigha. The committee has appointed 1 person as night guard. He also gets the same remuneration. The beneficiaries informed that they do not have problem with the supply of electricity. They do not also have the problem of migration from the village as they harvest 3 crops a year. They mentioned the need for training for operation and maintenance of pump. They do not want to take over the responsibility of the scheme.

The village has got 1 ICDS centre, 1 Primary school. High school and Health centre are far from the village. There are 8 SHGs and they are engaged in NREGS and mid day meal programmes.

- **Khorui, Dubrajpur**

This Light Duty Tube Well cluster covers 20 ha of land and has 85 beneficiaries. The scheme was installed in 1973 and gives 3 crops a year to its beneficiaries. 92% of the beneficiaries are marginal farmers. The beneficiary committee exists with 7 members. The farmers informed that they pay taxes as per government rates. The committee has appointed 1 person for water distribution and pays him for that. They operate the pump in absence of government operator. The electricity supply is normal and there is no migration from the village.

The village has got 2 ICDS, 1 Primary school, 1 high school. There exist some SHGs and they work for mid meal programme.

- **Sarparajpur, Lavpur**

This is a major RLI scheme. The command area is 60 ha and it has 250 beneficiaries. The scheme was installed in 1992 and was handed over to the beneficiary committee in the same year. The beneficiaries can harvest 2 crops a year from this scheme. The scheme is diesel operated. The pump is not run throughout the day. They suggested that the scheme should be electrified to reduce the cost of operation.

The village has got 1 ICDS centre, 1 Primary school, 1 High school and 1 Health centre. The SHGs that exist are engaged in mid day meal programme.

- **Laldaha, Sriniketan**

This RLI scheme covers 100 ha and has got 300 beneficiaries of whom 50% are ST. The scheme was commissioned in 1992 and was handed over in 1993. It gives 2 crops a year. This is diesel run scheme. The beneficiaries have to pay for fuel as per land size. The beneficiary committee is not very active. The schemes work during rainy season more efficiently. The beneficiaries have arranged for two submersible pumps to continue cultivation for the whole year.

The farmers suggested for electrification of the scheme to increase its cost benefit efficiency.

The village has got 1 ICDS centre, 3 Primary schools, 2 High schools and 1 Health centre. SHG members are engaged in mid day meal cooking. A brief detail of the schemes is given in **Table 5.14**.

Name of the district: Birbhum

1	Name of the block:	Bolpur - Sriniketan	Dubrajpur	Dubrajpur	Ilambazar	Lavpur
2	Name of the scheme:	Laldaha MI	Gara DTW Clusters.	Kharui DTW Clusters	Ramnagar DTW Clusters	Sarparajpur MI.
3	Type of the scheme:	RLI - Mini	DTW	DTW	DTW	RLI – Major (River - Kuye)
4	Type of the beneficiary:	Marginal Farmer = 280, Small Farmer = 10, Big Farmer = 10, Total = 300.	Marginal Farmer = 88, Small Farmer = 2, Total = 90.	Marginal Farmer = 80, Small Farmer = 5, Total = 85.	Marginal Farmer = 76, Small Farmer = 4, Total = 80.	Marginal Farmer = 250, Total = 250.
5	Cultivable Command Area (CCA):	Aman = 100 hectare, Wheat = 30 hectare, Veg. = 50 hectare	26.31 ha	20.24 ha	20.24 ha	60.70 ha
6	Villages benefitted:	Sarpalehana, Laldaha, Sarbanandapur, Barkahena, Kalaharpur, Honudanga, Baradanga	-	-	Gopalnagar, Kamarpara, Ramnagar.	-
7	Crops and cropping pattern:	Boro, Wheat, Mustard. Multiple cropping is practiced.	Aman, Wheat, Vegetables, Mustard, Boro. Multiple cropping is practiced.	Aman, Wheat, Veg., Mustard, Boro. Multiple cropping is practiced.	Aman, Wheat, Veg., Mustard, Boro. Multiple cropping is practiced.	Boro, Wheat, Mustard. Multiple cropping is practiced.
8	Type of soil:	Loamy & Clay	Sandy	Sandy	Sandy	Sandy, Loamy
9	Cropping Intensity and crop yield:	-	Boro = 5 quintal/bigha, Mustard = 7 kg/katha.	Boro = 5 quintal/bigha, Mustard = 8 kg/katha	Boro = 5 quintal/bigha, Mustard = 8 kg/katha	-
10	Maintenance:	Beneficiary (partially)	Maintained by the department.	Maintained by the department.	Maintained by the department.	Beneficiary Committee
11	Educational Background of the Beneficiaries:	Have average literacy	Above primary	Above primary	Above primary	Have average literacy
12	No. of Educational Institutions:	ICDS = 3, Primary School = 3, High School = 2, Health Centre = 1, SHG exist (engaged in mid-day meal cooking).	ICDS = 1, Primary School = 1, High School = 1, Health Centre = 1, SHG exist (engaged in mid-day meal cooking).	ICDS = 2, Primary School = 1, High School = 1, Health Centre = 1, SHG exist (engaged in mid-day meal cooking).	ICDS = 1, Primary School = 1, High School = 1, Health Centre = 1, SHG = 8 (engaged in mid-day meal cooking).	ICDS = 1, Primary School = 1, High School = 1, Health Centre = 1, SHG (engaged in mid-day meal cooking).

13	Average Family size:	-	-	-	-	-
14	Electricity Supply:	-	Electricity supply and voltage condition is normal	Electricity supply and voltage condition is normal	-	-
15	Other Informations:	There is no Beneficiary Committee. Only in rainy season this RLI works and other time it remains closed as the canal become dry. Diesel is used as fuel. Fuel cost is paid by each beneficiary as per his / her land size. They use 2 submersible pumps to continue the cultivation for whole year. They have suggested for electric supply in this RLI. 50% of the beneficiaries are ST.	Beneficiary Committee exists. Beneficiaries pay taxes. Boro – Rs. 816 / acre as per Govt. rule. 1 person from beneficiaries supervises the water distribution and operates the pump in absence of Govt. operator. No. local migration occurs. Beneficiaries are not ready and not interested for handover scheme.	Beneficiary Committee exists. Beneficiaries pay taxes for Boro – Rs. 816 / acre as per Govt. rule. 1 person from beneficiaries supervises the water distribution and operates the pump in absence of Govt. operator. No. local migration occurs. Beneficiaries are not ready and not interested for handover scheme.	Beneficiary Committee exists with 11 members. Beneficiaries pay taxes for Boro – Rs. 816 / acres as per govt. rule. 1 person from beneficiaries supervises the water distribution and operates the pump in absence of Govt. operator and 1 person from beneficiaries work as night guard. For these 2 persons beneficiaries collect Rs. 10 / bigha for each crops as remuneration. No. local migration occurs. Farmers are mostly Madhyamik and HS passed. They are not ready for handed over scheme.	Beneficiary Committee exists. Beneficiaries pay taxes as per Govt. rule. They have suggested for electric supply. Other data not available.

5.4.8 PASCHIM MEDINIPUR - 8MI Schemes

- **Amrakuchi, Keshpur**

This is a MDTW covering 20 ha of land and has got 200 marginal farmers as beneficiaries. 75% of the beneficiaries are SC and ST communities. There are some beneficiaries from the minority community. The scheme was installed 1993 and has created opportunity for the farmers to harvest 3 crops a year. This has the largest beneficiary committee the SA team has come across so far. The committee has 40 members. The committee has 3 operators who operate the pump during absence of the government operator. These 3 operators have got training from the department and a remuneration of Rs 2000/- a month. The farmers mentioned that the worst problem they face is load shedding and low voltage. It was informed by the farmers that the water level is decreasing day by day.

The village has 2 ICDS centers, 1 Primary school and 1 Health centre. The High school is 2 km away. Young people go out to Delhi and Mumbai for other works.

- **Sonadiha, Keshpur**

This MDTW was created forty years back as informed by the old members of the beneficiary committee. It was re-drilled in 2007. The scheme covers an area 40 ha and has got 100 beneficiaries all marginal farmers. The beneficiaries comprise of 70% general and 30% SC. The farmers harvest two crops a year from the scheme. The beneficiary committee has 9 members. They have appointed 1 operator who operates the machine during absence of the government operator. He also looks after water distribution. He is paid Rs 3000 for the season. The farmers informed that the actual cultivable land has been decreased after re-drilling. The problem of load shedding and low voltage was mentioned by the farmers during interaction. They also mentioned the acute crisis of drinking water. This is an Arsenic prone area. They mentioned the need for training of their operator.

The village has got 2 ICDS centers, 2 Primary schools, 1 SKs, 1 Health centre. High school is 1 and ½ km away. 14 SHGs exist. 4 SHG members are engaged in mid meal cooking.

- **Paschim Dharasole, Debra**

The scheme is a HDTW and was created in 1973. The command area is 28 ha and the number of beneficiaries is 100. Of the beneficiaries 80% are marginal farmers and 20% is small farmers. SC, ST and minority total to 75% of the beneficiaries. There exists a 10 member beneficiary committee. The committee has appointed 1 person to operate the machine when necessary and look after the distribution of water. This person does the work voluntarily. He belongs to the village. The problems they highlighted were low voltage arsenic, etc. The education level is good. No migration was reported.

Neither the committee nor the farmers are interested in taking complete responsibility of managing the scheme.

The village has got 6 ICDS centers, 3 Primary schools, 2 High schools and 1 Health centre. There are 2 SHGs engaged in mat weaving and cattle farming.

- **Abdalipur, Debra**

With coverage of 30 ha and 105 marginal farmer beneficiaries this HDTW was installed in 1973 to create facility for its beneficiaries to harvest 3 crops a year. The ST population is 75%. The scheme has 9 members beneficiary committee. The committee carries out normal task of water distribution and operation of the pumps during absence of government operator. The problem they mentioned was the low voltage. They are reluctant to take over the scheme. A section of the farmers migrate to nearby places to work as agricultural labour.

The village has 2 ICDS centers, 1 Primary school, 1 High school. The health centre is 3 km away. The number of SHGs was not confirmed but they are engaged in ‘Zari’ work.

- **Kamalapur, Medinipur**

This MDTW has 150 beneficiaries with a command area of 20 ha. It was created in 2005 and handed over in the same year. It has potential to give 3 crops a year to its beneficiaries. 75% of beneficiaries are ST. The scheme is managed by a 9 member beneficiary committee. The committee has appointed a person to look after water distribution and pays him Rs 2000/- per month during the season. He has got informal training of operating the pump. The committee members mentioned that the electric bill is very high, Rs12000 to Rs 18000 per month. The committee gives water only for 2 bigha of Boro cultivation. The area has drinking water crisis they mentioned.

The village has got 1 ICDS, 1 Primary school, 1 High school and 1 Health centre. There are 3 SHGs in the area and they are engaged in husking paddy, cattle farming, mid day meal cooking, candle making, etc.

- **Panchkhuri, Medinipur:**

This is a MDTW scheme. The command area of the scheme was not available as there were no committee members present. The departmental representative (surveyor) could not give any information. However, from the visit the SA team ascertained that the scheme has the potential command area of 20 ha. The scheme is run by the department. Two farmers were available and they mentioned that the water discharge is not adequate from the tube well.

The village has got 1 ICDS centre, 1 Primary school, 1 High school and 1 Health centre. A brief detail of the schemes is given in **Table 5.15**.

Name of the district: Paschim Medinipur

1	Name of the block:	Debra	Debra	Keshpur	Keshpur	Medinipur	Medinipur
2	Name of the scheme:	Abdalipur - HDTW	Paschim Dharasole HDTW	Amrakuchi - MDTW	Sonadiha - MDTW (installed - 2007)	Kamalapur - MDTW	Panchkuri - MDTW
3	Type of the scheme:	HDTW	HDTW	MDTW	MDTW (Replacement of HDTW which was installed - 1963)	MDTW	MDTW
4	Type of the beneficiary:	Marginal Farmer = 105, Total = 105	Marginal Farmer = 60 , Small farmers =25, Big Farmers =15, Total = 100	Marginal Farmer = 200, Total = 200	Marginal Farmer = 100 , Total = 100	Marginal Farmer = 135 , Small farmers =15, Total = 150	-
5	Cultivable Command Area (CCA):	9.33 ha	28.33ha	20.24 ha.	40.41 ha.	20 ha	-

6	Villages benefitted:	Abdalipur Purba Para, Ashrampally, Muslim Basti, Abdalipur Paschim Para	Paschim Dharasole, Baucha, Satyapur, Pakpari, Tabageria, Garhkilla	Amrakuchi, Dakshin Para, Uttar Para, Adibasi Para, Paschim Para.	Sonadiha, Bakchuri, Pipurdah, Panchami, Dhalhara, Dogachia, Atghara.	Kamalapur, Singh para, Adibasi Para, Sadgope Para, Teli Para, Brahman Para, Majhi Para	Maharajpur, Panchkhuri, Nishintipur, Musripatna
7	Crops and cropping pattern:	Aman, Boro, Flower, Mustard, Ground Nut. Multiple cropping pattern is practised.	Aman, Boro, Mustard, Ground Nut, Vegetable, Til Multiple cropping pattern is practised.	Mustard, Wheat, Ground Nut, Potato, Til, Boro. Multiple cropping pattern is practiced.	Mustard, Wheat, Ground Nut, Potato, Til. Multiple cropping pattern is practiced.	Aman, Boro, Wheat, Mustard, Ground Nut, Til. Multiple cropping pattern is practiced.	Wheat, Mustard, Ground Nut, Til
8	Type of soil:	Sandy	Loamy	Loamy	Loamy	Loamy	Loamy
9	Cropping Intensity and crop yield:	Boro = 9 quintal / Bigha. Aman = 8 quintal / Bigha	Boro = 10 quintal / Bigha, Aman = 6 quintal / Bigha	Boro = 480 kg/bigha	-	Boro = 9 quintal / Bigha	-
10	Maintenance:	Maintained by the Department	Maintained by the Department	Maintained by the Department	Maintained by the Department	Maintained by the Beneficiary	Maintained by the Department
11	Educational Background of the Beneficiaries:	Above primary	Upto primary	Average Literacy	Above primary	Above primary	Average Literacy
12	No. of Educational Institutions:	ICDS = 2, Primary School = 1, High School = 1, Health Centre = 1	ICDS = 6, Primary School = 3, High School = 2, Health Centre = 1, 6) SHG = 2 (Mat weaving, Cattle farming, they get loan from Govt).	ICDS = 2, Primary School = 1, High School = 1, Health Centre = 1.	ICDS = 2, Primary School = 2, High School = 1, Health Centre = 1, SSK = 1, SHG = 14 (Mid-day Meal Cooking)	ICDS = 1, Primary School = 1, Health Centre = 1, High School = 1, SHG = 3 (Engaged in Husking paddy, Cattle farming, Mid-day Meal cooking, Candle Making)	ICDS = 1, Primary School = 1, Health Centre = 1, High School = 1
13	Average Family size:	5 members.	6 members.	6 members.	8 members	7 members.	-
14	Electricity Supply:	Low voltage and load shedding is the main problem.	Low voltage is the main problem.	Low voltage and load shedding is the main problem.	-	-	-

15	Other Informations	<p>Beneficiary committee formed with 9 members. Government operator resides in the attached quarter. Secretary of this beneficiary committee supervise the water distribution.</p> <p>For maintenance and operate the machine beneficiaries pay for Boro – Rs. 850 / acre Aman – Rs. 204 / acre</p>	<p>Beneficiary Committee exists with 10 members. Govt. operator regularly operates the machine. But in his absence an operator from beneficiaries operate the machine and supervise the water distribution. But he does it voluntarily without any remuneration. He has no formal Government training for machine operation.</p>	<p>Beneficiary Committee exists with 40 members. 3 operators from beneficiaries operate the machine in absence of Government operator. They have Government training and their remuneration is Rs. 6000/- per month is collected from all beneficiaries.</p> <p>Beneficiaries pay taxes and the amount is Rs. 540 / Bigha including operator's remuneration.</p>	<p>Beneficiary Committee exists with 9 members. 1 operator from beneficiaries operate the machine and supervise the water distribution in absence of Government operator. His remuneration is Rs. 3000/- per season, which is collected from all beneficiaries. He has no formal Government training for machine operation.</p>	<p>Beneficiary committee formed with 9 members including President, Secretary and Cashier. 1 operator from beneficiaries operate the machine all time with remuneration of Rs. 2000/- per month. Operator is trained but formal. For maintenance and to operate the machine beneficiaries pay Boro – Rs. 1000 / bigha, Til – Rs. 750 / acre, Ground nut – Rs. 1000 / acre, Mustard – Rs. 600 / acre</p>	-
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	<p>This mouza is Arsenic prone area. Other than cultivation farmers work as labour in other place. They do not want handed over scheme due to shortage of their own fund. In this mouza 75% beneficiaries are ST, Muslims are also there. This MDTW is well maintained by beneficiaries</p>	<p>Beneficiaries pay taxes for all crops as per Govt. rules. For Boro – Rs. 816 / acre, Aman – Rs. 204 / acre. This area is arsenic prone area. Education level is very high, in spite of that farmers are working as labour in other’s land. SC & ST community is 75%. Not interested in handed over scheme.</p>	<p>75% beneficiaries are SC & ST and Muslim community is also present. Water level is decreasing day by day. They do not prefer handed over scheme because of high maintenance cost. Young boys are going to Delhi, Mumbai for Gold and Jari work</p>	<p>Beneficiaries pay taxes for all crops as per Govt. rules. For Potato – Rs. 340 / acre, Mustard – Rs. 102 / acre, Wheat – Rs. 204 / acre, Nut – Rs. 204 / acre, Til – Rs. 204 / acre. Actual cultivated area has been diminished after redrilling and installation of this MDTW.</p>	<p>They pay huge amount of electric bill of about Rs. 12000 – 18000 per month. This MDTW is well maintained by beneficiaries. There is also limitations on water distribution. For Boro cultivation water distribution allotted only upto 2 bigha, not allotted more than 2 bigha.</p>	-
	-	-	-	<p>Drinking water crisis as water level is after 60 ft. that is arsenic prone.</p> <p>Young boys and farmers are educated. Local migration not occurred.</p> <p>In this mouza – SC 30% General 70%</p>	<p>Farmers are maximum graduate. They do other work like, small business, labour etc. Local migration occurred. In this mouza 75% is ST. They are suggested for this type of facilities 4 or 5 more nos. There is crisis for drinking water</p>	-

5.4.9 BANKURA - 5 MI Schemes

- **Bonkathi, Bishnupur**

The scheme is a mini RLI with coverage area of 24 ha. It has got 70 beneficiaries, all small farmers. This diesel operated scheme was installed in 2005 and the scheme has been handed over. It has helped the beneficiaries to harvest 3 crops a year. It has got a 10 member beneficiary committee. The committee has one operator to look after the

pump operation. He is also responsible to see distribution of water in the field. The beneficiaries here pay Rs 10/hr as maintenance charge. Cost of diesel is extra. Beneficiaries are better educated and have good ownership of the scheme. They suggested electrification of the scheme before the scheme is handed over to them.

- **Hazrapukur**

This MDTW can cover 20 ha of land. It has got 160 beneficiaries and all of them are marginal farmers. The scheme was installed in 1996 and has created opportunity for the farmers to harvest 3 crops a year. The beneficiary committee has 7 members. The government operator is very regular and has a good rapport with the beneficiaries. The committee has appointed an operator from the beneficiaries who operates the pump during his absence. He gets Rs1500/- per month. Regarding management of the scheme by themselves they do not prefer it. They are happy with government maintenance. Local migration occurs in the form of labourer.

The village has got 2 ICDS centers, 2 Primary schools and 1 SSK. The High school is 2 km away. There is 1 Madrasa and 1 Health centre in the village. The women have 4 SHGs and the groups are engaged in Fodder farming and NREGA schemes.

- **Parasia, Chhatna**

The farmers here have a RLI scheme covering 40 ha of land. The number of beneficiaries is 112 of which 110 are marginal farmers. The scheme was installed in 1973 on the river Dwarakeswar. The farmers get 3 crops a year in the command area. The beneficiary committee has 11 members. The government operator lives in the site and is available 24 hours. Beneficiaries have their man to look after water distribution. In case of dire necessity however, one person operates the pump. The problem they mention was the erosion of the river bank. The area is flood affected. They are not willing to take handover of the scheme.

The education standard is good. The village has got 1 ICDS centre, 1 Primary school and 1 Health centre. The High school is 5 km away. There are 5 SHGs and they are engaged in handicrafts and mid day meal cooking.

- **Radhamadhabpur**

The scheme has got a DTC with a command area of 25 ha. The scheme was commissioned in 1973. The scheme has got 120 beneficiaries, all marginal farmers. Farmers get 3 crops a year from the scheme. The scheme has got a beneficiary committee of 5 members. The committee has appointed 1 person to look after water distribution activities in the field and he also operates the pump when required. This person gets Rs 6000 for 4 months. Educational background of the farmers is good. At least 20% of the beneficiaries are graduates. 80% of the beneficiaries are General Caste and rest SC. Young generation is going out for higher education. The farmers apprehended that the next generation may not keep up farming as profession. Regarding handing over of the scheme they are not interested.

The village has got 1 ICDS centre, 1 Primary school, 1 High school and 1 Health centre. There exist SHG groups but number not known. These groups are engaged primarily in mid day meal cooking.

- **Malpur**

Malpur has got a HDTW with coverage of 32 ha and the number of beneficiaries is 102. 97 farmers are marginal and the rest small. The scheme was commissioned in 1962. The beneficiaries get 3 crops a year. The committee has got 8 members and the committee has appointed 1 person to look after water distribution system. He gets Rs3000 per season. The farmers pointed out that the water level is gradually going down. They also mentioned that the spouts need immediate repair.

The education standard of the village is good. However, no body goes out for work. The young generation goes for higher education. The village has got 1 ICDS centre, 1 Primary school, 1 High school and 1 Health centre. There exists 1 SHG group. The group is engaged in mid day meal cooking, tree plantation, etc.

5.4.10 24 PARGANAS (SOUTH) - 2 MI Schemes

- **Alghara, Baruipur**

The scheme is MDTW. Its command area is 20 ha and the beneficiaries are all marginal farmers. The exact year of installation of the scheme was not known. The beneficiaries get 2 crops a year. They mentioned the problem of power cut and low voltage. Farmers who have land at a distant from the scheme get less water. The tube well has high level of iron content in its water. Regarding management of the scheme they do not want to take handover schemes because of political hazards, cost of electricity and tax collection. They termed these as hidden pressure which they do not want to bear. The committee has 10 members. Committee members operate the scheme voluntarily on holidays.

Education standard of the village is good. The village has got 8 ICDS centers, 8 Primary schools, 1 High school and 1 Health sub-centre. The number of SHGs was not known. However, it was mentioned that these groups are engaged in the preparation of Jam, Jelly, Sauce, Pickle, Painting brush, embroidery, etc.

- **Faldubi**

The scheme here is a MDTW. The command area is 12 ha and the exact number of beneficiaries was not known. The farmers grow Boro and Aman. The problem of load-shedding exists. In the evening they can not run the pump at all. The farmers mentioned that some of the field is higher than the water source point and as a result getting water to those points is difficult. They have to arrange alternative ways and means to take water to such points. The water has got high iron content. Due to this pipe lines are choked. They do not want the scheme to be handed over to them.

The village has got 4 ICDS centers, 3 Primary schools, 1 High school and 1 Health centre. The number of SHGs is 3. These groups are engaged in embroidery and ‘Zari’ work. A brief detail of the schemes is given in **Table 5.16**.

Name of the district: 24 Parganas (South)

1	Name of the block:	Baruipur	Faldubi
2	Name of the scheme:	Basumati I Project	-
3	Type of the scheme:	Atghara MDTW	MDTW
4	Type of the beneficiary:	Marginal Farmer	Marginal Farmer
5	Cultivable Command Area (CCA):	20.2 Ha.	12.14 ha
6	Villages benefitted:	(8 Paras) Ghosh Para, Mondal Para, Sardar Para, Naskar Para, Madhupur, Bagberia, Nazirpur, Ghurkur.	-
7	Crops and cropping pattern:	Paddy, Vegetables, Fruits. Multiple cropping is practiced.	Boro and Aman
8	Type of soil:	Loamy Soil	Loamy Soil
9	Cropping Intensity and crop yield:	-	-
10	Maintenance:	Maintained by Department	Maintained by Department
11	Educational Background of the Beneficiaries:	Above Primary level	-
12	No. of Educational Institutions:	ICDS – 4, Primary School – 3, High School – 1, SHG – 2-3 (embroidery, Jari work)	ICDS – 4, Primary School – 3, High School – 1, Health Centre – 1 SHG – 3 (embroidery, Jari work)
13	Average Family size:	-	-
14	Electricity Supply:	Suffers power cut & low voltage	The problem of load shedding exists.
15	Other Informations:	Water Quality – Iron problem is very high. No Arsenic problem. In case of handover they strongly oppose due to political hazard, improper tax collection, high electricity bill and last of all maintenance.	The problem of load shedding exists. In the evening they can not run the pump at all. The farmers mentioned that some of the field are higher than the water source point and as a result getting water to those points is difficult.

		<p>This programme run by electricity, so most of the time it suffers power cut & low voltage. Some time at evening they want water for cultivation but it is difficult to operate due to voltage fluctuation. Major problem of this project is field level is very high than water source area. So field area which is away from water source cannot get sufficient water as per need. They requested to wash jammed pipeline.</p>	<p>They have to arrange alternative ways and means to take water to such points.</p> <p>The water has got high iron content. Due to this pipe lines are choked.</p> <p>They do not want the scheme be handed over to them</p>
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5.4.11 DARJEELING - 2 MI Schemes

- **Falash, Fasideyao**

This is a mini RLI scheme with coverage area of 25 ha. All 90 beneficiaries are marginal. The installation of the scheme is just being completed in March, 2009. The life expectation of the scheme is 15 years. It is expected that the farmers will get 3 crops a year from the scheme. Beneficiary committee formation has not been completed. However, one person has already been identified from the village and got machine operation training from the department. The scheme will be handed over to the farmers immediately after the installation is complete. Initially the department will guide the farmers in operation and maintenance of the scheme. The villagers are happy with the scheme. Presently, they hire pump set at a very high rate. Sometime, they depend only on rains.

The village has got 3 ICDS centers, 3 Primary schools, 1 High school and 1 Health centre (PHC). The number of SHGs is 4. These groups are engaged in small business related to agriculture, cooking mid day meal in schools, etc.

- **Hatiram**

This is a Mini RLI scheme with coverage area of 20 ha. All 95 beneficiaries are marginal. The installation of the scheme is just being completed in March, 2009. The life expectation of the scheme is 15 years. It is expected that the farmers will get 2 crops a year from the scheme. Beneficiary committee formation has not been completed. Farmers are hopeful of benefits from the scheme. The scheme will be handed over to the farmers immediately after the installation is complete. Initially the department will guide the farmers in operation and maintenance of the scheme. The villagers are happy with the scheme. Presently, they hire pump set at a very high rate.

The village has got 2 ICDS centers, 1 Primary school, 1 High school and 1 Health centre (PHC). The number of SHGs is 2. These groups are engaged in cattle farming, vegetable selling, etc. A brief detail of the schemes is given in **Table 5.17**.

Name of the district: Darjeeling

1	Name of the block:	Phansideoa	Hatiram
2	Name of the scheme:	Falash	-
3	Type of the scheme:	Mini RLI	Mini RLI
4	Type of the beneficiary:	Marginal Farmer	Marginal Farmer
5	Cultivable Command Area (CCA):	24.28 ha.	20 ha
6	Villages benefitted:	-	-
7	Crops and cropping pattern:	-	-
8	Type of soil:	Sandy Loam	Sandy Loam
9	Cropping Intensity and crop yield:	-	-
10	Maintenance:	Maintained by Beneficiaries	Maintained by Department
11	Educational Background of the Beneficiaries:	Above Primary level	Above Primary level
12	No. of Educational Institutions:	ICDS – 3, Primary School – 3 High School – 1, Health Centre -1, SHG – 4 (engaged in small business related to agriculture, cooking mid day meal in schools, etc.)	ICDS – 2, Primary School – 1 High School – 1, Health Centre -1, SHG – 2 (engaged in cattle farming, vegetable selling, etc.)
13	Average Family size:	-	-
14	Electricity Supply:	-	-
15	Other Informations:	<p>The installation of the scheme is just being completed in March, 2009. The life expectation of the scheme is 15 years.</p> <p>It is expected that the farmers will get 3 crops a year from the scheme.</p> <p>Beneficiary committee formation has not been completed. However, one person has already been identified from the village and got machine operation training from the department. The scheme will be handed over to the farmers immediately after the installation is complete. The villagers are happy with the scheme. Presently, they hire pump set at a very high rate. Sometime, they depend only on rains.</p>	<p>The installation of the scheme is just being completed in March, 2009. The life expectation of the scheme is 15 years.</p> <p>Beneficiary committee formation has not been completed. Farmers are hopeful of benefits from the scheme.</p> <p>The scheme will be handed over to the farmers immediately after the installation is complete. Initially the department will guide the farmers in operation and maintenance of the scheme. The villagers are happy with the scheme. Presently, they hire pump set at a very high rate</p>

5.4.12 JALPAIGURI - 7 MI Schemes

- **Niranjanpara, Dhupguri**

This is a mini RLI with coverage area of 18 ha. The beneficiaries are mostly marginal farmers and they belong to SC community. A few of the farmers are ST. The scheme was installed in 2006 and handed over to the beneficiary committee. Farmers get 3

crops a year from the scheme. Earlier they had to depend upon rain or hire pumps at a very high cost. The farmers informed that their income increased due to this scheme. The committee has got 9 members. The committee urged for training in pump operation and maintenance.

The village has got 1 ICDS center, 1 Primary school, 1 SSK, 1 High school and 1 Health centre (PHC). The number of SHGs is 2. These groups are engaged in cattle farming, vegetable selling, etc.

- **Kodal Kathi, Malbazar**

The scheme is a Shallow Tube Well with coverage area of 4 ha. Beneficiaries are marginal farmers. The scheme was installed in 2006 and handed over to the Beneficiary committee. The farmers are getting 3 crops a year. Earlier farmers had to migrate to other places for work. The beneficiary committee has 7 members. The committee organizes meeting every month to discuss issues related to the scheme. The committee has opened a bank account. The beneficiaries belong to minority and ST communities.

The village has got 5 ICDS centers, 1 Primary school, 1 SSK, 1 High school and 1 Health centre (PHC). The number of SHGs is 7. These groups are engaged in rope making, stitching cement bags and cooking in mid day meal programme etc.

- **Dholabari -1100**

The scheme is a STW with coverage of 4 ha. The beneficiaries are all marginal farmers and they are 20 in number. The scheme was installed in 2006 and handed over to the farmers. The beneficiary committee has 7 members. The farmers get 3 crops a year. The farmers informed that before the scheme was installed they used to cultivate only wheat and potato. The committee meets every month to discuss about the scheme. The committee has bank account also.

The village has got 1 ICDS center, 1 Primary school, 1 High school, 1 MSK and 1 Health centre (PHC).

- **Dholabari-1400**

The scheme is a STW with coverage of 4 ha. The beneficiaries are all marginal farmers. The scheme was installed in 2006 and handed over to the farmers. The beneficiary committee has 9 members. The farmers get 3 crops a year. The farmers informed that before the scheme was installed they used to cultivate only wheat and cabbage. Now they cultivate wheat, vegetables, oil seeds, potato, maize, aman paddy. The committee meets every month to discuss about the scheme. The committee has bank account.

The village has got 1 ICDS center, 1 Primary school, 1 High school, 1 MSK and 1 Health centre (PHC) 1 SHG which is mostly engaged in cattle farming

- **Dholabari-449**

The scheme is a STW with coverage of 4 ha. The beneficiaries are all marginal farmers. The scheme was installed in 2006 and handed over to the farmers. The beneficiary committee has 7 members. The farmers get 3 crops a year. The farmers informed that before the scheme they used to cultivate only wheat and potato. Now they cultivate many other crops. The committee meets every month to discuss about the scheme. The committee has bank account.

The village has got 1 ICDS center, 1 Primary school, 1 High school, MSK 1.

- **Dholabari-1133**

The scheme is a STW with coverage of 4 ha. The beneficiaries are all marginal farmers. The scheme was installed in 2006 and handed over to the farmers. The beneficiary committee has 7 members. The farmers get 3 crops a year. The farmers informed that before the scheme was installed they used to cultivate only wheat and potato. Now they cultivate many other crops. The committee meets every month to discuss about the scheme. The committee has bank account also. Some beneficiaries do small business.

The village has got 1 ICDS center, 1 Primary school, 1 High school, MSK 1. There exists 1 SHG and the group is engaged in cattle farming etc.

- **Dholabari-1133**

The scheme is a STW with coverage of 4 ha. The beneficiaries are all marginal farmers. The scheme was installed in 2006 and handed over to the farmers. The beneficiary committee has 7 members. The farmers get 3 crops a year. The farmers informed that before the scheme they used to cultivate only wheat and potato. Now they cultivate many other crops like Aman, oil seed, vegetables, etc. The committee meets every month to discuss about the scheme. The committee has bank account. Some beneficiaries do small business.

The village has got 1 ICDS center, 1 Primary school, 1 High school, MSK 1. There exists 1 SHG and the group is engaged in cattle farming and puffed rice business.

5.4.13 BURDHWAN - 3 MI Schemes

- **Bharpeta, Mamudpur**

This is a HDTW with a command area of 50 ha. But the farmers cultivate only 40 ha. The exact date of installation of the scheme was not known. The committee has got 7 members and all 300 beneficiaries are marginal farmers belonging to general caste. The scheme has created opportunity for the farmers to harvest 3 crops a year. The scheme has been handed over to the farmers and they are maintaining it well. Electricity supply is good.

The village has got 2 ICDS centers, 1 Primary school, 1 High school, SSK 1. There exists SHGs and the groups are engaged in 'beedi' making, bamboo crafts, etc.

- **Sankarpur**

This is a LDTW scheme. It covers 22 ha. The number of beneficiaries is 200. They are all marginal farmers. The scheme has been handed over to the farmers. They get 3 crops a year. The committee has got 7 members. The farmers mentioned the problem of low voltage. Beneficiaries belong to SC and ST communities.

The village has got 1 ICDS center, 1 Primary school, SSK 2, and 1 Crèche for tribal children. There exists SHGs and the groups are engaged in cattle management, cooking and rice cleaning.

- **Sankarpur, Purbapara**

This is a HDTW scheme. It covers 66 ha. The number of beneficiaries is 400. They are marginal and small farmers. The scheme has been handed over to the farmers. They get 2 crops a year. The committee has got 15 members. The farmers mentioned the problem of low voltage.

The village has got 1 ICDS center, 1 Primary school; High school is 2 km away. There exists 9 SHGs and the groups are engaged in cattle management, cooking and rice cleaning. There is one club of tribal women and this club has got a SHG. They give loan to the farmers.

5.4.14 PURULIA - 2 MI Schemes

- **Nildi, Raghunathpur**

This is a major RLI scheme covering 60 ha of land with 130 members as beneficiaries. Majority of them are SC. The scheme was installed in 1985 with diesel operation. The scheme was electrified in 1998. The voltage remains stable upto 5 p.m but falls down after that. The farmers harvest 3 crops a year. It has a regular beneficiary committee. The operator is locally stationed and operates the pump when required. The farmers mentioned the problem of migration to Orissa and Asansol.

The village has got 3 ICDS centers, 2 Primary school, 1 High school, 2 SSK. 1 Health sub centre nearby. There exist 3 SHGs and the groups are engaged in puffed rice making and cooking.

- **Solanchi:**

This is a major RLI scheme covering 60 ha of land with 122 families as beneficiaries. Majority of them are SC. The scheme was electrified in 2008. The scheme has a beneficiary committee with 9 members. The voltage remains stable upto 5 p.m but falls down after that. The farmers harvest 2 crops a year. It has a regular beneficiary

committee. The operator is locally stationed and operates the pump when required. The farmers mentioned the problem of migration to Asansol as daily labourer.

The village has got 1 ICDS center, 1 Primary school, 1 High school, 1 SSK. There exist 4 SHGs and the groups are engaged in puffed rice, bamboo crafts and plantation nursery.

5.4.14 MALDA - 4 MI Schemes

- **Mandirpur, Old Malda:**

This is a HDTW scheme commissioned in 1962. It was re-drilled in 2009. It covers 40 ha. The number of beneficiaries is 100. They are marginal and small farmers. The beneficiary has got a 12 member beneficiary committee. The farmers get 2 crops a year. A small group of farmers go nearby places for work in industries like jute, silk, etc. The farmers mentioned the problem of low voltage.

The village has got 1 ICDS centre, 1 Primary school, High school is 4 km away. 50% of the beneficiaries belong to minority groups and the rest 50% are SC/STs. There exists 3 SHGs and the groups are engaged in cattle management, cooking and rice cleaning.

- **Musadanga, Bhabanipur, Gajol:**

This HDTW scheme is a handed over scheme. It can cover an area of 40 ha. The beneficiaries are marginal and small farmers. The beneficiaries have got a 12 member beneficiary committee. The farmers get 3 crops a year. A few beneficiaries go to Gajol as daily labourers. Some go outside the state for Masonry work.

The village has got 1 ICDS centre, 1 SSK and 1 Primary school. There is 1 health sub centre. There exists 2 SHGs.

- **Atgama, Kanchamitha Khari, Gajol:**

This is a small canal that allows water to flow from Uttar Dinajpur border to South of Gajol Block in Malda. The department has taken up excavation work for the canal so that water remains longer after the rainy season. The canal has been divided into 28 ponds along its length. Each pond has got a 3 meter length wall with the next pond. The objective is to store more water and allow the farmers having land in the vicinity of each pond to lift water during cultivation. The command area is 60 ha and there are 70 beneficiaries. Most of the beneficiaries are STs. There is no beneficiary committee. Each beneficiary lifts water on his/her own cost.

The village has got 1 ICDS centre, 1 SSK and 1 Primary school. The high school is 1 km away from the village. Health sub centre is 2 km away. The female folks of the village have got 4 SHGs. The SHGs get loan for agricultural purpose. Migration to Delhi and Gujarat is there for masonry work. The village has got electricity.

- **Khusha Khari, Bamongola:**

The area has a catchment of 80 ha. The water goes waste through a canal at the downstream of the catchment. The department is constructing two spillover dams along the canal so that water can be reserved at the upstream and farmers can lift water for their fields. The lifting cost will be borne by the farmers. With this arrangement 16 ha can be cultivated and 60 farmers will be benefited. The beneficiaries are all Rajbansis. They are participating in the construction of the dams.

The village has got 1 ICDS centre, 1 SSK and 2 Primary school, 1 high school which is 2 km away from the village. Health sub centre is also 2 km away. There are 2 SHGs. The SHG members are engaged in Mid Day Meal cooking, fish business, etc. Migration to Delhi, Tamil Nadu and Bangalore is found among some of the farmers for masonry work.

5.4.16 COOCHBEHAR - 3 MI Schemes

- **Chilakhana, Tufanganj:**

This is a MDTW scheme which covers a command area of 20 ha benefiting 64 farmers. This is a handed over scheme. The scheme was handed over to the beneficiary committee in the year of installation, i.e. 2005. Beneficiaries get two crops namely Pre-Kharif and Kharif. Most of the beneficiaries are small farmers.

The village has got 1 primary school and 1 SSK. High school is far. Health centre is also 4 km away.

5.4.17 DAKSHIN DINAJPUR

- **Katapoor Beel, Gangarampur:**

This is a beel (lake) which gets sufficient water during rains. It has got a huge catchment area of 1.98 sq. km. The potential command area is 193 ha. The scheme has got 390 beneficiaries of which 125 SCs, 90 STs and 175 others. Beneficiaries get 2 main crops and some grow three crops also. The water is lifted by small pumps and they bear the cost of diesel and service charge for the water used.

The village has got 1 primary school, 1 SSK, 12 SHGs. People do not migrate from the village.

5.4.18 UTTAR DINAJPUR

- **Fulatti, Kaliaganj:**

This is a HDTW scheme established in 1967 with a command area of 16 ha serving 70 beneficiaries. 78% of the beneficiaries are marginal farmers. The scheme gives 3 crops to the farmers. It has got a beneficiary committee consisting of 8 members. Most beneficiaries grow boro.

The villagers migrate for temporary work as daily laborer. The village has got 1 Primary School and 1 SSK. SHG exists but the number could not be known.

5.5 CONCLUSIONS

The overall impact of the minor irrigation projects commissioned is positive and has led to increase in production and productivity in the project areas contributing to the overall socio-economic development of the area. The ownership of these projects could be transferred to the beneficiaries through an extensive process of motivation, counseling and training for well organized running and maintenance for the post project period.

Agriculturist/interested volunteers may be identified from the local educated/under employed youth and through proper training they may be made to work as links between the beneficiaries and the department.

The department has shortage of staff resulting in more than one project required to be handled by one employee. This sometimes contributes to problem in monitoring and interaction with the local farmers on need basis.

The department may take help of the land revenue department in obtaining Mouza / village maps for each project where it is lacking. This village maps showing the plot numbers help the farmers to properly demarcate the command area of each farmers and at the same time help in economic application of irrigation water thereby reducing chance of irrigation water going waste.

5.6 OPPORTUNITIES, CHALLENGES, RISKS AND ISSUES

The state of West Bengal is mainly dependent on agriculture. Out of 88.752 lakh hectares, the net cropped area is 52.95 lakh hectares i.e. 60% of the total area of the state. Gross cropped area is 95.33 lakh hectares with cropping intensity of 180.04%. The cropping intensity increased from 155% in 1992-93 to 180% in 2007-08. The main reasons of increase in cropping intensity are multiple cropping practices by farmers and extension of minor irrigation facilities. Minor irrigation practices are very much popular in the farmers' community since it is manageable by them.

The state is divided into three agro-climatic zones with six sub regions with varied characteristics. According to Agricultural census 2000-2001, there was more than 6.78 million operational holding in the state of which small and marginal holdings accounted for 80.4%. Details of land holdings are given in **Table 5.18**.

Table 5.18: Break-up of Land Holding Pattern (2000-2001)

Size Class	Number of Operational holding	Area (ha)
Marginal (Below 1.00 ha)	5462089 (80.4%)	2758843 (49.7%)
Small (1.00 to 2.00 ha)	1009328 (14.9%)	1606688 (29.1%)
Medium (2.00 to 4.00 ha)	282992 (4.2%)	783773 (14.1%)
Large (4.00 to 10.00 ha)	3497 (0.5%)	178298 (3.2%)
10.00 ha and above	785 (negligible)	218976 (3.9%)
Total	6789991 (100%)	5546576 (100%)

The surface and ground water available in the state are sufficient in respect of quantity. But there is some constraints in quality of ground water in some parts of the state. Moreover, shortage of surface water towards the end of lean months poses challenge particularly following inadequate monsoon rainfall.

The CCA under minor irrigation has increased by about 25% in 2000-2001 than that of 1987-88. The Water Resources Investigation and Development Department, GOWB, has conducted 4 Minor Irrigation censuses so far. The figures of CCA (Culturable Command Area) on Minor Irrigation Schemes against each census are shown in **Table 5.19**.

Table 5.19 : CCA under Minor Irrigation Schemes

Sl. No.	Census Year	CCA
1	1987-88 (first MI census)	1681046 ha
2	1993-94 (2 nd MI census)	1928275 ha
3	2000-01 (3 rd MI census)	20958490 ha.
4	2006-07 (4 th MI census)	Report under validation stage

The Minor Irrigation in the state comes under the Water Resources Investigation and Development Department of Govt. of West Bengal. Two Directorates and two Corporations operate under the administrative control of the said department. Any Irrigation scheme having command area up to 2000 ha and less comes under Minor Irrigation Schemes.

The Directorate of Water Resources Development under Department of Water Resources Investigation & Development is responsible for planning, execution, operation and maintenance of Minor Irrigation Projects in the state. For some time past completed schemes are handed over to the Panchayat for operations and maintenance.

The West Bengal State Minor Irrigation Corporation operates and maintains its own schemes.

The State Water Investigation Directorate is responsible for monitoring of quantity and quality both surface and ground water in the state and regulates the sinking of tube wells aided by Ground Water Act in the State.

The West Bengal Agro Industries Corporation is looking after the needs of Agricultural and Minor Irrigation implements.

5.6.1 Opportunities & Challenges in Minor Irrigation System in West Bengal

Challenges

🕒 Problems with the source

Major Challenges are:

- Drying up of surface water or depletion of ground water level.
- Damage & leakage in water transmission line and theft of different accessories.
- Construction of field channels.
- Tampering of field outlets.
- Timely availability of power & fuel oil.

🕒 Operation & maintenance

Major Challenges are:

- Generating initial fund for operation and maintenance of a newly handed over scheme.
- Replacement of Engine, pump and motors
- Theft of power line.
- Increasing fuel cost.
- Revenue generation and accounting process
- Deferred maintenance of defective pump, motor & engines
- Inter & intra users' conflicts of interests, benefits and expectation

🕒 Institutional challenges:

- Establishing interdepartmental coordination and convergence starting from state to village level

- Establishing good governance (capacity building)
- Formulations & strengthening of local institutions
- Linkage and integration of local institutions with various public and private institutions and with Panchayat Raj Institution.
- Market linkages

⌚ **Challenges relating to financial and manpower resources mobilization and utilization:**

- Local level resource generation to share O&M costs in terms of money & labour
- Manpower development of both water users and service providers

5.6.2 Socio-Economic Profile of the Project Areas

In the past projects there is no systematic recording of the socio-economic profiles of the area benefited. The SA team during visits tried to understand the situation in this context. It is indeed a heartening experience that almost 99% of the beneficiaries belong to marginal and small farmer categories. But other factors like involvement of women in management etc were not visualized. Out of 109 M.I. schemes visited the SA team has found only in one scheme women member in the beneficiary committees. Land ownership is also male dominated in most cases. Problems like drinking water, Health & Sanitation, were not felt. Even the mouza maps could not be made available in 95% of the projects.

5.6.3 Sub-Project Cycles

As mentioned earlier the process of planning in these schemes is very much centralized in nature. The schemes were designed and implemented by the department in general. Where the question of private land arose the department consulted the beneficiaries for procurement of land on donation. The new schemes (after 2005) have followed better planning process. There are many conflicts observed regarding distribution of water. Farmers having land at a distant from the pump have complaint of inadequate water in their field.

The SA Team suggest that a participatory process should be followed regarding selection of project site, formation of beneficiary committee, future maintenance plan, etc.

5.6.4 Communication strategy

Communication strategy centering the schemes was found to be weak. The maximum coordination in the electrically run schemes required between two important departments is State Electricity Board and the Water Development Department. Rapport with the Land Revenue Department is also very invisible. Mouza maps have not been obtained for

many of the schemes and the proper demarcation of the command area was not possible on a reliable map. Almost in 90% M.I. schemes the visibility of the scheme is nil. There is no sign-board depicting the details of the scheme like name of the scheme, year of installation, type of scheme, water discharge capacity, number of beneficiaries, potential command area, etc. In one or two recently handover schemes visibility boards with name of the scheme were found. The SA team has got no information regarding the system to regularly meet the beneficiaries and discuss issues. The beneficiaries could be motivated about the ownership of the schemes. The department should make efforts to convince the beneficiaries about the huge amount of subsidy the department is to bear on account of the schemes.

The SA Team suggests that Communication Board for every project needs to be erected at the site of the project depicting the details of the scheme. The Beneficiary Committee may think of introducing a **Running Board** to display current information of each farming season. This board may be used as a tool for public disclosure regarding tax collected, defaulters, any expenditure on maintenance, etc.

5.6.5 Participation Framework

There is no concerted effort observed regarding creation of a systematic participation process in management of the scheme. The SA team has not come across news of training of Beneficiary committee members on project management, financial management, etc organized by the concerning department. The beneficiary committees, in most cases are not registered. They function as a loose committee without legal status. The SA team is not sure of their status for bank loan, etc. The minutes of the beneficiary committees are not recorded in most cases. These are the areas to be looked into seriously if the schemes are to be run by the beneficiaries.

5.6.6 Institutional Arrangements at Local Level

In cases of old schemes people's participation was not well understood and reflected in the project formulation and implementation. The farmers are found to be ignorant of the selection process of the sites, beneficiaries, etc. However, beneficiary committees have been formed during launching and operation of the project. Panchayat's representative is there in every beneficiary committee. Panchayat's involvement has been highlighted in the project formulation but it needs to be further strengthened in cases of handover schemes. The SA team feels that there should be a block level and district level irrigation committee for the same with adequate representation from the people, local experts and Panchayat.

5.6.7 Willingness and ability to pay

The SA team found that the beneficiaries under the department run schemes pay their taxes as decided by the government. However, there are cases of defaulters. But in all the M.I. schemes the farmers are found to be agreeable to pay taxes. The question of initial cost sharing found to be an unacceptable proposition to the farmers. It is revealed that due to ignorance of many details of the scheme they are reluctant to do so. They need to be informed about the scheme before it is commissioned. The cost sharing in cases of

handover schemes is far better. They pay more taxes than the department run scheme beneficiaries. Their water distribution management is also better.

5.6.8 Indicators and baseline values for monitoring and adverse impact and mitigation measures

It is suggested that before preparing the details of any scheme the base line data needs to be collected thoroughly and the status of beneficiaries before the launching of the scheme have to be documented. This data will then be compared with the change of status of beneficiaries, change in the pattern of cultivation, productivity, migration, and even family income. The effect and benefit of the scheme will thus be well visualized. This comparison will also help in motivating people of other areas where new schemes need to be established. The following variables may therefore be considered for both base-line and end-line assessment.

- Landholding vis-à-vis productivity of each farmer.
- Cropping intensity.
- Number of days a farmer is engaged in his/her own land.
- Migration status.
- Children's education status.

5.6.9 Adverse impact and mitigation measures

Socially, it is very difficult to foresee what type of adverse impact may happen for any project. Generally, a SWOT (Strength, Weakness, Opportunity and Threat) analysis is done for all projects and this gives us an opportunity to visualize probable adverse impact that a project may have. However, there may be causes of adverse impact due to unprecedented national or international incidents like the global economic slowdown of 2008. The best way to face any adverse impact on any project is to increase the ownership of the project to its maximum by the beneficiaries. Concerted effort by the department has to be there from the very beginning.

5.6.10 Land Acquisition and Resettlement

This point was discussed in detail because there was no single scheme found where the department had to acquire land and faced any problem thereof. In some schemes the command area has been reduced due to growth in habitation. In such cases the beneficiaries themselves have built dwellings. So no legal complication arose. However, in cases of water harvesting tanks the department should examine the nature of the ownership of the ponds and catchment areas. During the visit of the SA team to one privately owned M.I. schemes it was found that the farmers wanted regulation of water distribution. This type of problem needs to be resolved at the beginning else the beneficiaries face problem in the future.

5.6.11 Public Disclosure regarding the project and the schemes

The SA Team suggests that the ADMI project may develop its own website and e-magazine. Beneficiary committee members may be trained to upload their opinions in the e-magazine. An interactive process may thus be started between the beneficiaries and the department. Scope for third party opinion should also be there. The e-magazine may accommodate the best practices of projects to inspire beneficiaries of other projects. The department should also upload new innovations, technical inputs in the e-magazine to upgrade the knowledge of the beneficiaries. At every project site all relevant data regarding the amount of tax collected, actual command area, beneficiary details with land holding, command area map, etc should be readily available for any visitor to the project site. The beneficiary committee should prepare yearly statement of Receipt and Payments with the help of local chartered accountant and keep the books of accounts properly. This will augment the transparency of the project operation and create better understanding among the beneficiaries. If required the beneficiary committee may be given training on book keeping and maintenance of accounts.

5.6.12 General Comments

- In 90 % of the visited M.I. schemes there is no visibility mark that the projects run or are commissioned by the department.
- In most cases the life span of the projects has been over and as a result the efficiency has reduced.
- Water loss is a common problem in all the sites.
- Absence of Mouza maps in the schemes sites in almost all the places. Cannot restrict water being drawn to non-beneficiary lands.
- Farmers having land far from the vicinity of the pumps or spouts often get inadequate water.
- Problem of low voltage is common to most of the project areas.
- Fixed length of pipes (500 m or so) to connect spouts poses problems in case of a rectangular size command area. As a result adequate number of spouts can not be put in place.
- Due to rise in cropping intensity the agricultural labour migration has come down but migration of young educated persons from the villages has increased. Even migration to far away states like Mumbai, Gujarat, Chennai etc. was also found where young people go for jobs like ‘Zari’ work, stone polishing, etc. As a result farmers’ face shortage of farming labourer in their families.
- Productivity has increased but there is a general tendency to cultivate ‘Boro’ even in areas where the cultivation is not suitable.

- In all places pumps are operated by the beneficiaries during holidays, but no training has so far been organized for them. The department occasionally arranges training of its operators.
- In one project area the operator was found to be a lady. It was learnt that she had been appointed in place of demise of her husband. This is good but she should have been given appropriate training for the job and her mobility to attend schemes in far place should have been considered.
- At the time of commissioning of the project, some times, beneficiaries were not consulted and as a result they are afraid of taking ownership of the project.
- Though most of the beneficiaries are small and marginal farmers, a little richer amongst them often uses shallow pumps to water their fields in case of water paucity. This is not viewed by the other farmers very positively.
- Almost all the projects run by the department are functioning well but at a very high subsidy given by the department. It is learnt that in some places the electricity bill is pending.
- It is learnt during interaction with the farmers that what they cultivate is sometime not sufficient to feed the family. The family members have to resort to other earning activities like 'beedi' rolling (mostly by women), small trading, fishing , giving labour to big farmers' land in the village itself, working as daily laborers in government schemes.
- It appears that the smaller the scheme the better the chances of good management by the beneficiaries. In North Bengal, these schemes are very successful.

5.6.13 Future Actions Proposed

- Proper training of members of the beneficiary committee on operation and maintenance of pumps, simple accounting and book keeping, etc.
- Organizing visit of members of the beneficiary committee of government run projects to handed over projects to help them believe and learn that ownership of projects will be beneficial for them in the long run.
- All the beneficiary committee should be registered so that this committee is eligible for loan / support from other institutions like Panchayat, Bank, etc.
- The existing self-help groups should be strengthened and where there exists no such group, formation of such Self Help Groups (SHG) should be encouraged. Specialist organizations may be contacted for the purpose.

- Creation of alternative employment opportunities like food processing, pump repairing, electrician training, should be explored.
- The farmers should be trained in basic agriculture technique like calculation of volume of water, requirement of water as per crop, minimization of water loss etc. Department may think of creation of a separate training at the district level where these committee members get training and follow-up training on a regular basis. Where possible department may think of outsourcing this facilities to suitable institution.
- Sprinkler Irrigation may be introduced on an experimental basis where water is scarce.
- Farmers may be motivated to change cropping pattern. They should be made to understand that cultivation of 'boro' may not be profitable every year when there is scarcity of water.
- Department may explore the possibility of converting diesel run handed over project to electricity run project after proper training of beneficiary committee members.
- Panchayat's should be involved in helping the beneficiary committees and in monitoring of the schemes. The involvement of Panchayat's will also increase participation of the beneficiaries.

5.6.14 List of other activities of beneficiaries

- Labourers in NREGA scheme
- Digging ponds and canals
- Involved in share-cropping
- Agricultural laborer in some other farmers' land
- Daily wage earner
 - ☞ Rickshaw puller
 - ☞ Masonry worker
 - ☞ Painter
- Involved in cottage industries
 - ☞ 'Zari' work
 - ☞ Embroidery work
 - ☞ Mat weaving
 - ☞ 'Beedi' rolling
 - ☞ Tailoring
 - ☞ Making and setting power in spectacles
- Migrate in neighboring villages and districts as labourer
- Migrate in other states as jewellery laborer etc.
- Local small business
- Cattle management

- Mid day meal cooking
- Plantation Nursery

VI. EXISTING GOVERNANCE AND OPERATIONAL ARRANGEMENTS IN RESPECT OF MINOR IRRIGATION DEVELOPMENT

The Water Resources Investigation and Development Department (WRI&DD), Government of West Bengal, is the nodal authority in the development of Minor Irrigation in the state. Two Directorates, viz., Water Resources Development Directorate (WRDD), State Water Investigation Directorate (SWID) and two Corporations, viz., West Bengal State Minor Irrigation Corporation Ltd. (WBSMIC Ltd.) and West Bengal Agro-Industries Corporation Ltd. (WBAIC Ltd.) operate under the administrative control of the said department.

6.1 ROLE OF WATER RESOURCES INVESTIGATION AND DEVELOPMENT DEPARTMENT (WRI&DD)

The Minor Irrigation Sector was attached with the Department of Agriculture. The land reform programme of the state Govt. to re-distribute the ceiling surplus land to the land less poor agricultural labourers created a pressure to promote increased irrigation facilities. Small schemes, directly utilizing the sources involving comparatively less fund and with lesser gestation period, were considered necessary to accelerate the irrigation needs. Such schemes covering less than 2000 ha of command area are known as Minor Irrigation Schemes. The creation of an exclusive department for the development of Minor Irrigation in the state was felt by the state Govt.

The Water Resources Investigation and Development Department, is now the nodal authority in the development of Minor Irrigation in the state. Major polices of the department in respect of minor irrigation development are

- Planning, development and management of water resources
- Treatment of water as an essential environment for sustaining all life form
- Development, conservation, utilization and management of water resources in a sustainable manner
- Judicious and scientific resource management and conservation of water resources
- Increasing demands of water for diverse purposes
- Elimination of the pollution of surface and ground water resources to improve water quality
- A well developed information system, for water related data
- Management of water resources for diverse uses in a participation approach

6.1.1 Water Resources Development Directorate (WRDD)

The Directorate of Water Resources Development is responsible for planning, execution, operation and maintenance of Minor Irrigation Projects in the state. For some time past completed schemes are handed over to the Panchayat for operation and maintenance.

6.1.2 State Water Investigation Directorate (SWID)

The State Water Investigation Directorate is responsible for assessment and monitoring of quantity and quality of both surface and ground water in the state and regulates the sinking of tube wells aided by Ground Water Act in the State.

6.1.3 West Bengal State Minor Irrigation Corporation Ltd. (WBSMIC Ltd.)

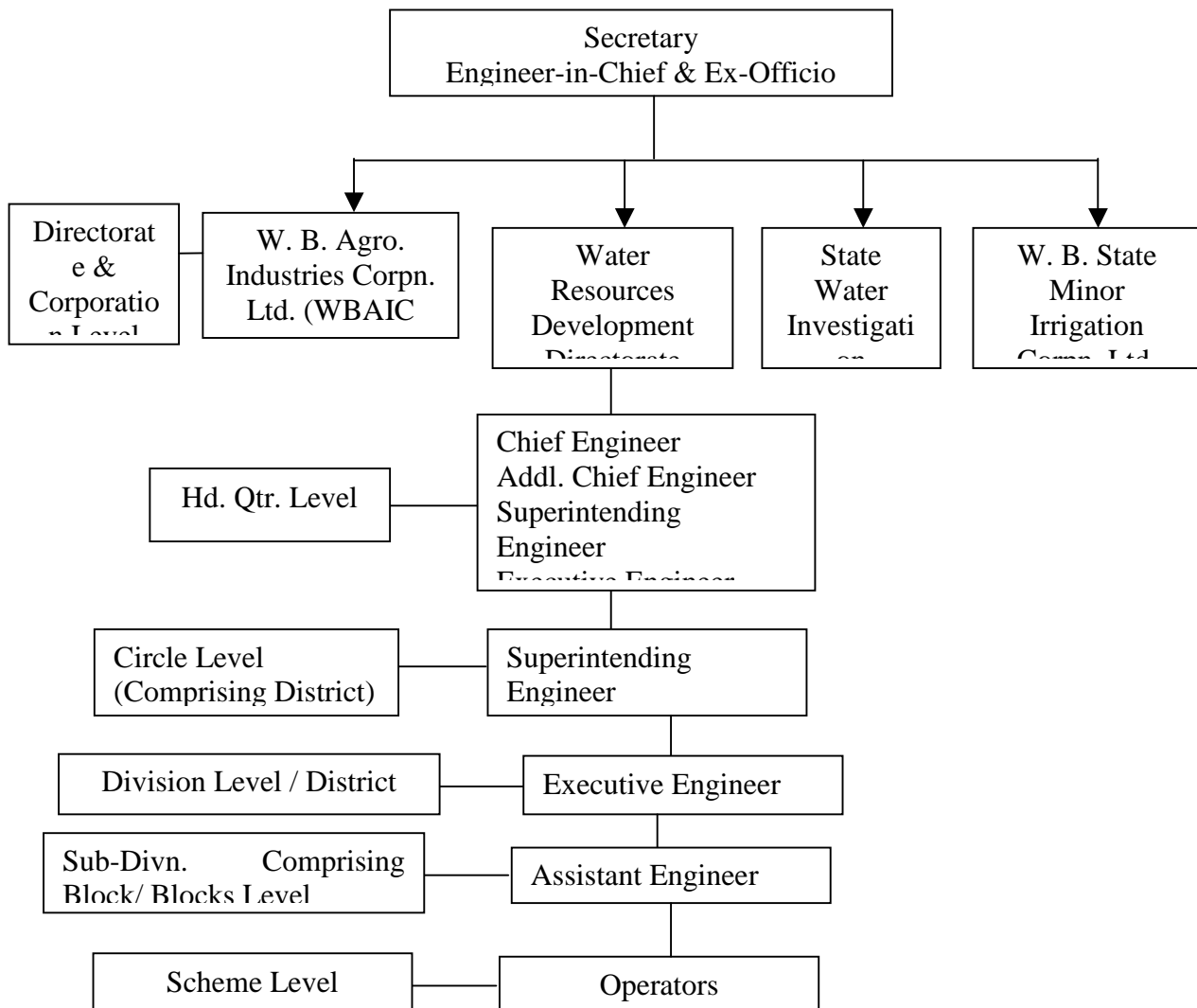
The West Bengal State Minor Irrigation Corporation operates and maintains its own Minor Irrigation schemes.

6.1.4 West Bengal Agro-Industries Corporation Ltd. (WBAIC Ltd.)

The West Bengal Agro Industries Corporation is looking after the needs of Agricultural and Minor Irrigation implements.

The organizational setup of the Department of Water Resources Investigation and Development is furnished in **Fig 6.1**.

Fig 6.1 Water Resources Investigation and Development Department Organization Setup



6.2 ROLE OF PANCHAYATI RAJ INSTITUTIONS (PRIs)

The Panchyati Raj Institutions in the state has created an example in the country. The state has created a history in the participation of the common people through the process of decentralization. A three tier Panchayat organization is working successfully for more than three decades. There is one Zilla Parishad for each district, one Panchayat Samiti for each Block and one Gram Panchayat for a group of villages. Moreover, Gram Sansad is working in each village. It is the only state in the country to have had regular elections to local bodies for the past thirty years.

Elected representatives are the decision makers in respect of development and planning in their respective jurisdiction. The wide range of duties and responsibilities of Panchayats cover local natural Resource Management, Education and Health programmes, including Relief Work and the management of Rural Employment programme. The planning of district site specific schemes of the line departments at district and block level are taken up by Panchayats as a part of decentralized planning introduced by the state Government.

The role of Panchayats in Minor Irrigation development are primarily limited to choice between various schemes sponsored by the line departments, site selection, selection of beneficiaries for different schemes and formation of Beneficiary Committee.

The composition of various tiers of decentralized Government and scheme selection process are furnished in **Fig. 6.2, 6.3**.

Fig. 6.2 Panchyati Raj Institutional Setup : Minor Irrigation

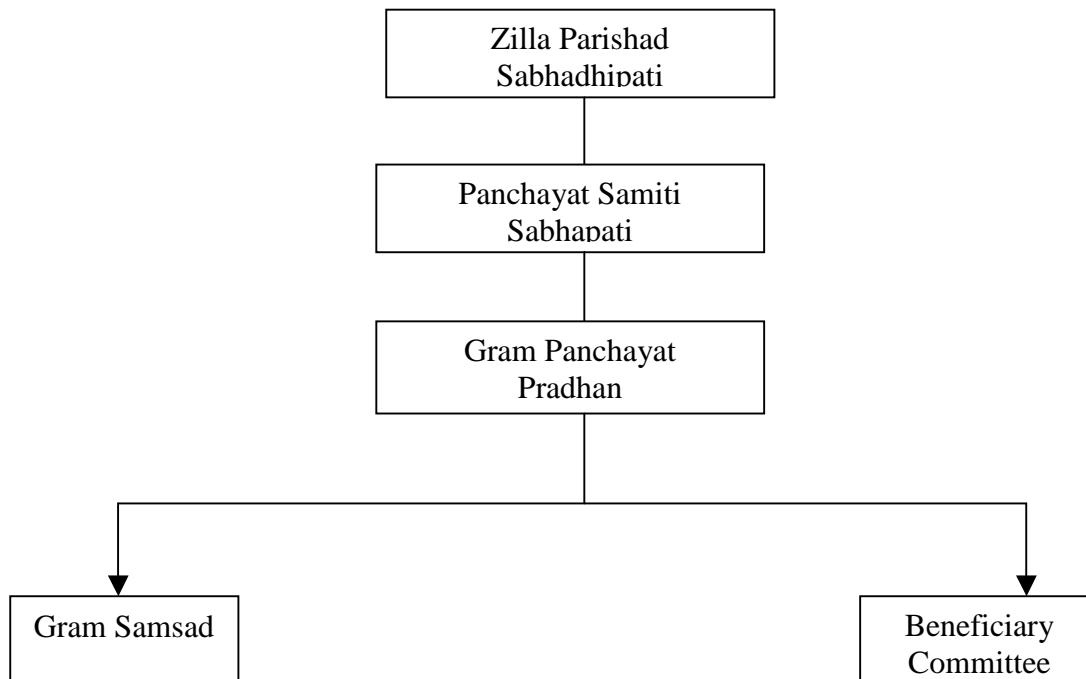
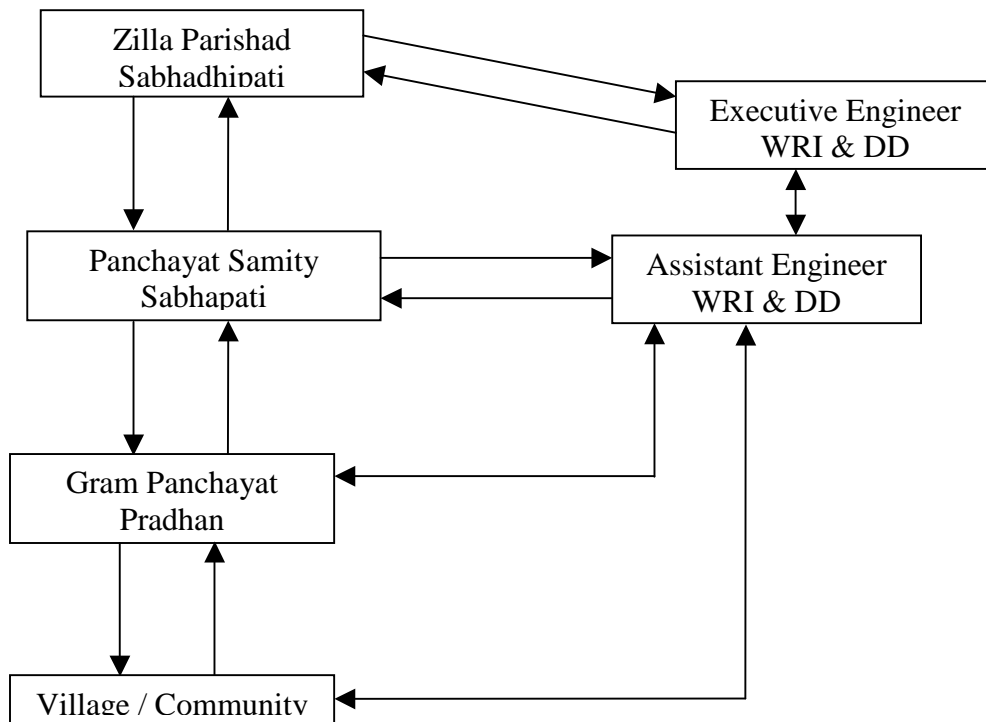


Fig 6.3 Village / Scheme Selection Process



The role of Panchayats in different Phases of installation of MI Schemes are noted below:

- **Preplanning Phase**

The Gram Panchyat, the lower most tier of PRI is to collect proposal of minor irrigation schemes from the community level.

The Panchayats are to monitor the progress of selection of schemes by coordinating community levels and WRDD. On receipt of the technical feasibility report from WRDD, scheme selections are to be finalized at Zilla Parishad level by its Krishi – Sech – O – Samabay Sthayee Samiti .

- **Planning Phase**

The Panchayats at different tiers are to actively cooperate in the formation of Beneficiary Committees / BCs at scheme levels. During the Land transfer process for installation of MI Schemes, Panchayats are to extend help for smooth and litigation free registration of land by the donors in favour of the Department. Disputes, if any, are to be settled taking the Beneficiary Committees / BCs and the donors in confidence.

- **Implementation Phase**

At every stages of implementation of the schemes, the help and cooperation of Panchayats are very important. It plays active role in this part. Monitoring the

progress of works and settlement of local issues, if any, are also to be regularly taken care of.

- **Consolidation Phase**

Completed schemes are handed over to the local Panchyat Body by the WRDD which in turn arranges to hand over the same to the Beneficiary Committees for operation and maintenance. In the event of major trouble the related Panchyat body takes up the matter to the Engineers of WRDD for repair. The Panchayats ensure smooth handing over. In case of disputes, the Panchayats arrange to settle the same.

**Role and Responsibilities of different tiers of Panchayati Raj Institutions (PRI)
In respect of Minor Irrigation Development**

Sl. No.	PRI Tiers	Role and Responsibilities	Remarks
1.	Uppermost Tier Zilla Parishad (District Level) <ul style="list-style-type: none"> • Sabhadhipati • Karmadhakshya, Krishi, Sech O Samabay Sthayee Samiti 	Scheme selection and finalisation of site selection	
2.	Middle Tier Panchayat Samiti (Block Level) <ul style="list-style-type: none"> • Sabhapati • Karmadhakshya, Krishi, Sech O Samabay Sthayee Samiti • Block Development Officer and Ex-Officio Executive Officer (B.D.O.) 	Scheme selection and priority list for site selection and forwarding to Zilla Parishad and to keep constant touch with Gram Panchayat. Administrative control of operators at scheme level.	
3.	Lowermost Tier Gram Panchayat (Group of Villages) <ul style="list-style-type: none"> • Pradhan 	Collection of proposals for new schemes, preparation of priority list and forwarding to Panchayat Samiti, selection of sites, intimation of status of their proposal to the villagers, operation and maintenance of schemes, regular monitoring of running of schemes in association with beneficiary committee. Moreover, extending co-operation to the field Engineers of WRDD in respect of Minor Irrigation.	

4.	<p>Water Users Association (Beneficiary Committee) (Scheme Level)</p> <ul style="list-style-type: none"> • Chairperson • Secretary • Treasurer 	<p>Presiding over meetings</p> <p>Overall management, operation and maintenance of schemes and submission of performance report to the Pradhan and WRDD.</p> <p>Financial management of the scheme.</p>	
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6.3 ROLE OF THE COMMUNITIES

Communities play important role in different phases of MI Scheme installation which are presented below:

- **Preplanning Phase**

Different groups of Communities in the village have the role to highlight the positive and negative impacts on the issues involved in the project to different visiting Assessment teams. They should also come forward with the free mind on the site selections of different schemes and also on the issue of donation of Land required for the schemes.

They should submit proposals for schemes in their areas to the Pradhan, Gram Panchayat and should take part in the process of preliminary selection of schemes at Gram Panchayat level.

- **Planning Phase**

The community participation in the process of land donation for the scheme is important. They should see that the land donor is not deprived of its legitimate benefits from the schemes. The Beneficiary Committee (BC) has to arrange litigation free voluntary land donation required for the schemes.

In the formation of BC, representation of all communities in it from the village is required. The various groups of communities in the village are to associate themselves during the process of formation of BC.

- **Implementation Phase**

Water Users Association is to associate it in every stages of implementation of schemes in their areas. They should keep close and regular contact with the WRDD and Panchayats.

The quality of work is the key for an efficient scheme. The BC has to play a positive role to ensure quality work as per schedule and specification of the work. A completion certificate for the work is to be issued by the BC.

- **Consolidation Phase**

The BC is to sign the agreement with the local Panchyat body in respect of handover of completed schemes to them and the operation, maintenance and management of the handed over schemes.

They should actively participate in the capacity building training for them when arranged.

They are to manage the schemes taking all sections of the communities in confidence.

6.4 ROLE OF OTHER DEPARTMENTS FOR MINOR IRRIGATION DEVELOPMENT

6.4.1 Agriculture Department

Major departmental policies are noted below

- Raising agricultural production and productivity vertically through wider adoption of appropriate eco-system-specific and cost effective technology, since land is a finite resource.
- Bringing more area under high yielding variety (HYV), hybrid and improved varieties of crops.
- Increasing fertilizer use and fertilizer-water use efficiency. Application of fertilizer on soil test results, use of balanced dose of fertilizer etc. consumption of fertilizer NPK to be raised from 134 kg per ha to 235 kg per ha with an improvement of most favorable consumption ratio from 3:21:13:1 to 2:1:1 in the terminal year of 10th plan.
- Increasing the cropping intensity through appropriate diversion or replacement of
 - a) Existing crop / varieties: Profitable crop sequences.
 - b) Introduction of new crops and cropping sequences.
 - c) Increasing irrigation facilities.
- Emphasizing maintenance of soil health, more use of Bio-fertilizers, green manure and farm yard manure, balanced nutrition, consumptive use of irrigation water and conservation of surface water through Participatory Irrigation Management (PIM), Need-based use of plant protection chemicals on Integrated Pest Management (IPM) concept and popularization of Bio-pesticides and Botanical pesticides.
- Extending soil testing facilities up to district level for proper use of fertilizer.

- To strengthen and activate Agricultural Extension Service including Training and visit system to intensify linkage between research and extension workers.
- Exploitation of surface water potential and to reduce indiscriminate use of ground water, as far as practicable.
- Crop diversification.
- Bringing cultivable waste land and fallow land under cultivation.

6.4.2 Fisheries Department

Major departmental policies are noted below

- To bring all water bodies for fish culture by the fishermen and unemployed youth.
- Protection of wetlands from filling and conservation of aquatic animals.
- Eco-friendly sustainable fish culture.
- Promotion of organic aquaculture.
- Women employment.

6.4.3 Activities of the Backward Classes Welfare Department, West Bengal

The Backward Classes Welfare Department works for social, economic and cultural development of the people belonging to SC, ST and OBC in the State. The main functions of the Department are:

- Promotion and implementation of educational schemes including training for enhancement of capabilities in them
- Issuance of caste certificates and enforcement of reservation rules in services, posts and educational institutions
- Implementation of schemes including income generation schemes for economic upliftment
- Strengthening of infrastructure and creation of community assets for integrated development of the backward classes
- Social and cultural development of the backward classes

6.4.4 Activities of West Bengal State Electricity Distribution Company Ltd.

West Bengal State Electricity Distribution Company Ltd. has come into effect from 01.04.2007 after restructuring of erstwhile West Bengal State Electricity Board in compliance of Electricity Act 2003. WBSEDCL is a major power utility of the state with consumer strength over 74 lakhs. 5 zones, 17 circles, 52 distribution divisions and 478 electric supply offices make up the backbone to the power distribution system of the state.

6.5 ISSUES OF WATER RESOURCES DEVELOPMENT DIRECTORATE (WRDD) AND PANCHYATI RAJ INSTITUTION

Normally, the field engineers of WRDD get full co-operation from PRIs in respect of planning, selection, execution, maintenance and handing over of MI Schemes. However, following issues are identified in which process of development of MI Schemes are some times affected.

- Proposal for schemes are not routed through proper channel for PRI setup.
- Beneficiary Committee is not formed or the existing committee is non-functioning.
- Lack of awareness generation to protect departmental equipments like pump motor, power line etc.
- Lack of capacity building.
- Irregular / non payment of electricity bill.

6.6 WEST BENGAL ACCELERATED DEVELOPMENT OF MINOR IRRIGATION PROJECT (WBADMIP)

The department has taken up a project to accelerate the Minor Irrigation Development in the state (WBADMIP). For implementation of the project, State level and District level Project Monitoring Units would be set up as presented in **Fig 6.7 & Fig 6.8**.

The WBADMIP will provide

- Minor Irrigation Schemes of different types in all the districts of the state.
- Strengthening community based Irrigation Management
- Support to Agricultural Development through provisions of
 - ❧ Agricultural Services
 - ❧ Diversification
 - ❧ New Technologies
 - ❧ Market Access
 - ❧ Income Generating Opportunities

The WBADMI Project may be divided into 5 (five) phases, viz. (i) Identification Phase, (ii) Preplanning Phase, (iii) Planning Phase, (iv) Implementation Phase and (v) Consolidation Phase. Authorities at different levels have positive role to play for successful completion of the project within stipulated period.

- **Identification Phase**

Long list of schemes Block and District wise is to be completed by mobilising its Directorates.

- **Preplanning Phase**

The Department on the basis of the preliminary assessment on Hydrology, Environment and Social is to decide for preparation of Detailed Project Report (DPR). The Project Directorate of WBADMIP is to complete the Scheme Selection on the basis of Technical Feasibility Report and subsequent clearance from the Zilla Parishad.

- **Planning Phase**

In this phase, the department is to take up completion of Hydrological, Environmental and Social Assessments and also Tribal Development Plan and Engineering Design and Cost Estimates. The DPR is to be finalized at this stage.

- **Implementation Phase**

The Department has important roles to play towards contracts finalizations for procurement of materials, start of construction work providing adequate manpower for supervision of procurement of materials and construction work at field level.

- **Consolidation Phase**

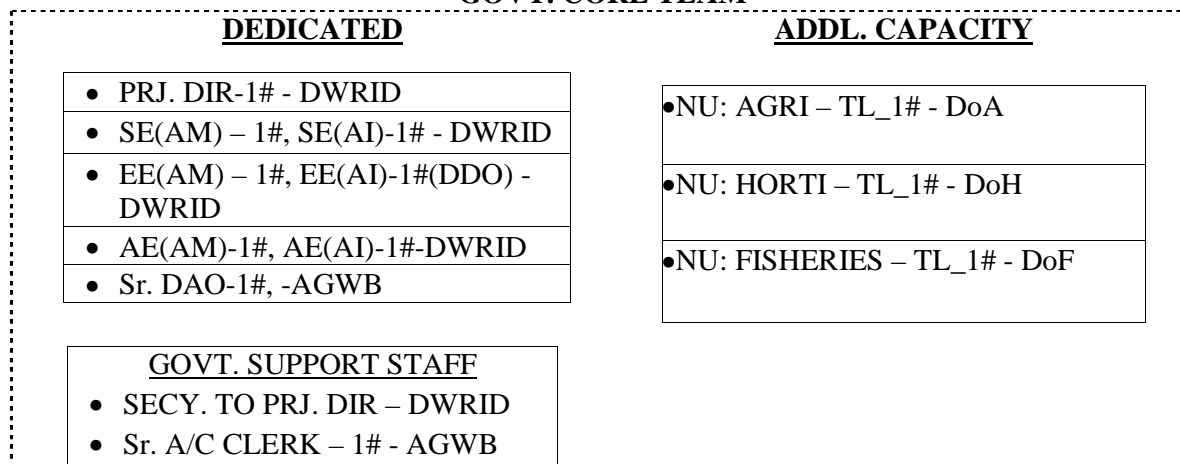
The Department has to monitor the formation of BC at scheme levels and network of BCs. The training of BCs on operation and maintenance (O&M) including financial management is to be arranged by the department.

The Memorandum of Understanding (MoU) is to be completed and signed by the BC and WRDD. This is to be monitored by the department. Sub-project evaluation and its completion report are to be arranged and finalized through the Project Directorate and WRDD.

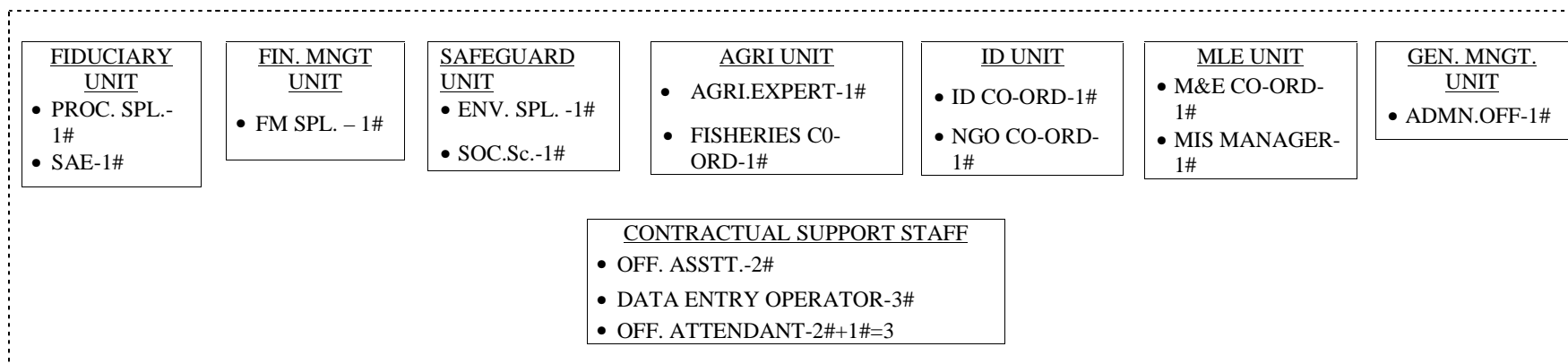
Handing over process of the completed schemes to the BCs are to be completed as per the guideline of the Government.

SPMU

GOVT. CORE TEAM

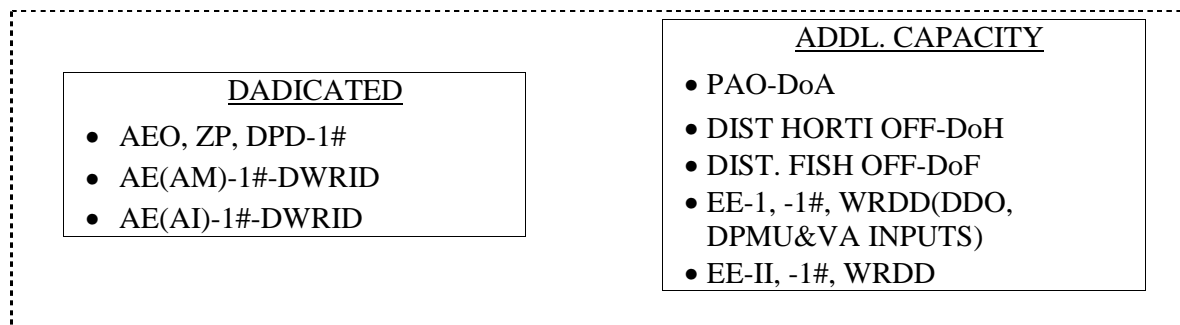


CONTRACTUAL



**Fig. 6.7 State Level Project Monitoring Unit
DPMU**

GOVT. CORE TEAM



CONTRACTUAL STAFF

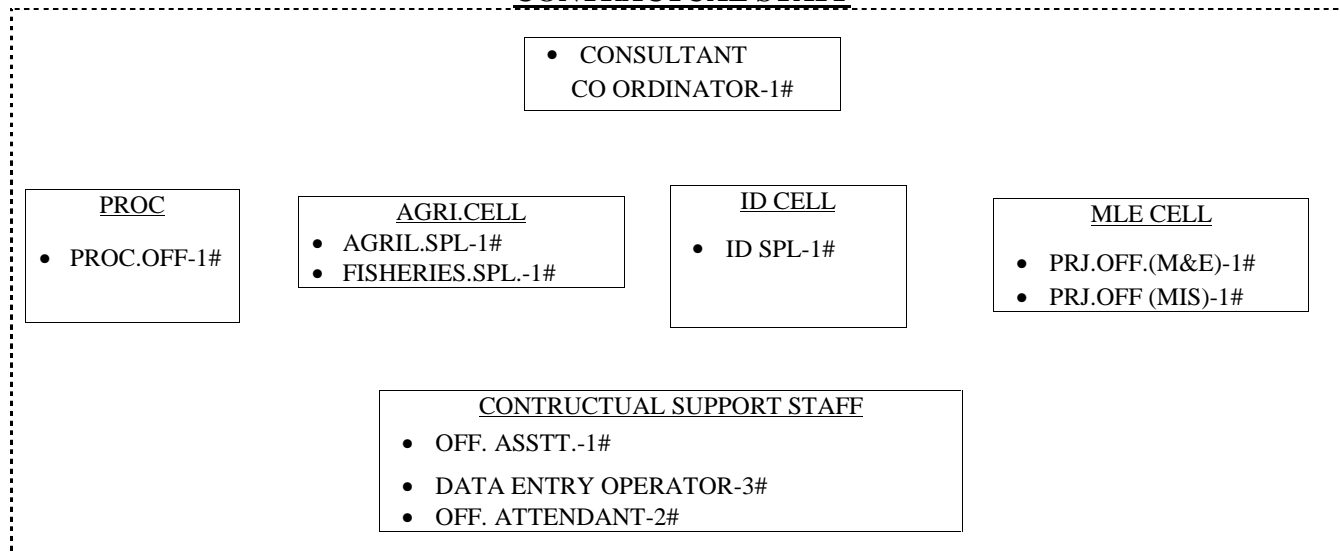


Fig.6.8 District Level Project Monitoring Unit

6.7 IMPACT ASSESSMENT

In general, the Minor Irrigation Schemes do not possess any direct social risks associated with its installation, operation and maintenance. However, process related risks often impact the project achievements. The key social issues observed during stakeholder consultations at various level are presented in **Table 6.1**.

Table 6.1: Key Social Issues – Minor Irrigation Schemes

Sl. No.	Issue	Positive Impact	Negative Impact
1.	Installation of MI Scheme	<ul style="list-style-type: none"> Assured availability of irrigation water for increased agricultural production resulting better livelihood and more employment generation i.e. appropriate selection of the communities and location. 	<ul style="list-style-type: none"> Else full coverage of the expected command by irrigation shall not be possible.
2.	Site Selection	<ul style="list-style-type: none"> Social exclusion of vulnerable groups in selection process not observed. Proposals are initiated through PRIs and on technical feasibility report, final selection is also done by PRI. Location of scheme is an important factor with respect to access to benefit among vulnerable groups. No obvious exclusion observed. 	<ul style="list-style-type: none"> Due attention to weaker sections and vulnerable groups are required. Due to lack of awareness and or influence, weaker sections and vulnerable groups often do not get the benefit. Relatively less number of vulnerable groups were found to get benefit.
3.	Land	<ul style="list-style-type: none"> Land requirement for installation of a scheme is low and is managed by the beneficiaries locally. Land owner is compensated by the beneficiaries for which the owner donates the land. 	<ul style="list-style-type: none"> In most cases small and marginal farmers donate land since more than 90% belong to this category. The compensation is mostly not comparable with prevalent price.
4.	Installation and Construction	<ul style="list-style-type: none"> WRDD procures pipes, pump-sets and accessories centrally and undertakes construction through selected agencies. Supervision is done by the WRDD with the assistance of members of beneficiary committee and representatives of PRI. 	<ul style="list-style-type: none"> Ill motives sometime vitiate the process of construction in the field.
5.	Operation and Maintenance	<ul style="list-style-type: none"> Completed schemes are handed over to the PRI who in turn bestows the operation and maintenance to the beneficiary committee (BC). 	<ul style="list-style-type: none"> Beneficiary committee lacks knowledge in efficient management both in respect of technical and financial.

Sl. No.	Issue	Positive Impact	Negative Impact
		<ul style="list-style-type: none"> The BC engaged one to four persons for day to day operation of the pump and release of water from spout points. The BC arranges for diesel, maintains accounts, collects water rates and makes payment to the staff. Excess over expenditures are kept for maintenance. 	<ul style="list-style-type: none"> In many cases particularly in shallow tubewells and Mini RLI schemes, respective beneficiaries arrange their fuel and operate the pump set. Spurious fuel and multi handling aided by lack of technical knowledge render the loss of efficiency of pump set.
		<ul style="list-style-type: none"> In Departmental run schemes operator and assistant operators are posted for the purpose. Beneficiaries pay advance water rates in the Block Development Office. Verifying the original receipt, the operator releases water and keep records in prescribed format. 	<ul style="list-style-type: none"> In departmental run schemes, two or three persons are also locally engaged by the beneficiaries who actually manage the filed matters and they are compensated in kind or cash every season by the concerned beneficiaries in
6.	Beneficiary Committee (BC)	<ul style="list-style-type: none"> The BC is formed as per guideline of the WRI&DD. There is representation from MLA, PRI and WRDD. One member from each spout command is selected by the respective beneficiaries. <p>Meetings are held regularly. Issues are settled in it.</p>	<ul style="list-style-type: none"> The BC is not generally registered and does not get institutional benefits. Some time controlled by influential person of the locality. Irregularity in conducting meeting. Maintenance of record is not transparent.
7.	Payment of electric charges	<ul style="list-style-type: none"> In electricity operated schemes, service connection is provided in the name of the Pradhan of the concerned G.P. Bills are raised in his name. The Pradhan arranges payment through the BC. 	<ul style="list-style-type: none"> Sometime BC is reluctant in making the bill payment and the power line gets disconnected. In some cases, BC is willing to pay the bill but fails to collect the requisite amount for advance payment of electric charges from the beneficiaries. The small and marginal farmers generally willing to pay after sale of their produce.

Sl. No.	Issue	Positive Impact	Negative Impact
			<ul style="list-style-type: none"> Once the power line is disconnected, it takes considerable period for its restoration.
8.	Major Break Down	<ul style="list-style-type: none"> In the event of major break down, the PRI reviews the performance of the scheme and takes suitable decision for restoration of the scheme. The WRDD extends technical help. 	<ul style="list-style-type: none"> All such schemes do not get financial support from PRI or Government and remain defunct as the BC can not arrange for its repair.
9.	Theft of Power Line	-	<ul style="list-style-type: none"> Unless cost of replacement is deposited the power line is not restored. The scheme remains permanently defunct.
10.	Theft of transformer	-	<ul style="list-style-type: none"> The cost of new transformer is to be borne by the PRI.
11.	Self Help Group	<ul style="list-style-type: none"> Self Help Group (SHG) members contribute small amount every month which is deposited in Bank. The accumulated amount is given to members as loan to meet their needs. Such SHGs are active in almost every village. 	<ul style="list-style-type: none"> Very few of the SHGs are involved in Agricultural activities.
12.	Source becoming dry	-	<ul style="list-style-type: none"> Crops do not get irrigation in the middle of the season. This situation is faced in lean period.
13.	Water quality monitoring	<ul style="list-style-type: none"> Regular water quality monitoring reflects the trend of social risk. 	<ul style="list-style-type: none"> In almost all cases such monitoring is not observed.

6.8 INFERENCES FROM THE SOCIAL ASSESSMENT STUDY AND STAKEHOLDER CONSULTATION

Key issues emerging from consultations as well as impact analysis are enumerated below:

6.8.1 From a Social Development Perspective

- Land holdings are quite small and most of them are either marginal or small farmers. This renders them poor and vulnerable. MI Schemes can result in enhancing cropping intensity – more number of crops become possible- and thus could be the key for prosperity.
- Selection of projects should be based on self selection and demand driven principles. All those desirous of having MI facilities should have an equal opportunity for participating in the project.

- Poor and vulnerable sections such as Scheduled Caste, Scheduled Tribes need to be provided a preferential treatment in terms of participation.
- Selection of the schemes, locations, etc should be transparent, and based on certain key well laid out parameters so as to avoid Elite Capture and Exclusion.
- Though communities have no formal role in planning and implementation, arrangements should be made for holding consultations with them through the scheme cycle.
- Benefitting communities should have a significant say in deciding on the location of the facilities and on distribution.
- Communities are willing to continue with the traditional practice of donating lands for the scheme. But, in turn, the land owners expect some gratuity, as has been the practice in the past.
- Communities are concerned about the ‘quality’ and ‘transparency’. They expect that proper arrangements be made to ensure that quality standards are adhered to and that the entire processes be transparent.
- Benefitting communities, in their own way, get mobilized into ‘Beneficiary Committee; for group action. No assistance is being given from the government departments.
- Communities are eager to get trained in several activities related to MI management.
- Agricultural and Allied Extension activities need further improvement. Agricultural intensification and / or diversification would require a lot of capacity support from external agencies.
- MI Engineering department is not only under staffed but also lack expertise to reach and work with the communities. So, external capacity assistance from independent Support Organizations such as NGOs, consultant etc .are essential.

6.8.2 From an overall perspective:

- Subprojects need be selected carefully particularly in blocks of very high ground water development status and in the blocks where ground water has been severely affected by arsenic & fluoride contamination
- Water harvesting tanks, water-harvesting structures, dug wells having CCA less than 2 ha should better be taken up under the National Rural Employment Guarantee Scheme.
- Wherever possible minor irrigation systems should be energised by electricity and for this a dialogue should be started with West Bengal State Electricity Distribution Company Ltd.
- Subprojects relying on extraction of ground water in the coastal saline zone have to take guard against ingress of saline water into the aquifers.
- In some of the districts prone to flooding and water logging and having a very low level of ground water development status , ground water abstraction through irrigation systems may ameliorate such conditions

- There should be close coordination between the Department of Agriculture and the Water Resources Investigation & Development Department to ensure sustainability of the Participatory Irrigation Management as well as to ensure Agricultural Development.
- General lack of awareness on organic farming and the need for crop rotation and crop diversification
- Deficient facilities for soil testing and appropriate advice on use of chemical fertilizers and insecticide/pesticides
- The need for intensive campaigning for awareness development on IPM/INM is a prime requirement to avoid adverse environmental impacts
- Need for avoidance of groundwater abstraction in areas severely affected by arsenic and fluoride contamination; in such areas more stress should be laid on surface water irrigation schemes
- A inventory of old and defunct RLI/DTWs to decide on the possibility of rehabilitation at economic cost
- More stress on energisation of minor irrigation systems with electricity and rationalizing tariff rate as they feel such rates are high
- Undertaking of proper bank protection works in stretches of streams used for surface water abstraction
- Careful Installation of RLIs in stretches of a stream/river bed after proper assessment of discharge to avoid reduced stream flow resulting in problems of siltation
- Need for avoidance of ground water abstraction to prevent saline water intrusion in coastal areas
- Need for more co-ordination amongst allied departments to optimize benefits flowing from the scheme.
- Awareness development for water use efficiency in irrigation and more stress on cropping with less water consumptive crops

In a later section, the study provides suggestions for addressing the issues.

VII. STAKEHOLDER ANALYSIS

7.1 INTRODUCTION

West Bengal is a pioneer in decentralization, and the Panchayati Raj movement, or decentralized local self government, in West Bengal is very active for more than 30 years. As a result, the Panchayats get involved in all developmental works in the rural areas, and this applies to a certain extent for minor irrigation development as well. However, most part of the Minor Irrigation facilities' development (till construction and commissioning) rests with the Government itself. Till recently, even O&M used to rest with them. Of late, gradually, O&M is being devolved to the communities, Beneficiary Committees. These user organizations mainly restricts its activities to operation of pumps and distribution of water according to demand. However, these organizations are yet to play any meaningful role in management of resources, conflict resolution, collection and retention of water charges, and maintenance of books of accounts, etc. So far there is no formal legal backing to such activities. Other associated line agencies like agriculture, horticulture, marketing, tribal welfare, etc are expected to assist in agricultural intensification and/ or diversification. However, they are yet to play a significant role in extending assistance. Given this broader scenario, the study has felt a need to identify the stakeholders -- individuals/ agencies who can impact and/ or who can get impacted by the project- and effort made to map their expectations as well as issues thereof.

Keeping in account the importance of stakeholder participation and involvement in the project, a detailed stakeholder consultation and analysis was carried out as one of the important components of the Social Assessment study undertaken by Govt. of West Bengal under ADMI Project with an aim to support the project in evolving an effective project implementation plan and strategy. Such consultations were carried out with various stakeholders at village, panchayat, block, district and state level. Role and responsibility chart of the key institutions – Government of West Bengal and Panchayat Raj Institutions are identified at the beginning.

GOWB's MI vehicle is the Department of Water Resources, Investigation and Development. This in turn has 4 directorates.

Table 7.1: Role and Responsibility Chart – Minor Irrigation – Government of West Bengal

Sl. No.	Institution/ Agency	Role and Responsibilities	Remarks
1	Government – Secretary	Policy, Budget, Financial Management, and state wide oversight	
2	Ex-Officio Secretary (Engineer in Chief)	Program / Project Management	
3	Directorate -Water Resource Development -Water Investigation -Minor Irrigation Corporation -Agro Industries Corporation	GOWB's MI vehicle is the Department of Water Resources Investigation and Development. This in turn has 4 directorates	
4	WRDD Chief Engineer	Nodal Agency for Minor Irrigation – Planning, Execution,	Constructed Schemes are handed over to

Sl. No.	Institution/ Agency	Role and Responsibilities	Remarks
	Superintendent Engineer Executive Engineer Assistant Engineer Operator / Mechanic	Operation and Maintenance	Panchayat
5	WID Director Additional Director --Engineer --Geologist --Chemist --Geo Physicist	Assessment and monitoring of quantity and quality of ground and surface water. Regulate Groundwater development	
6	Minor Irrigation Corporation	Planning, Execution, Operation and Maintenance	Constructed schemes are operated by themselves
7	Agro Industries Corporation	Needs of Agricultural and Minor Irrigation Implements	

Panchayat Raj Institutions : The PRI system in the state comprises a three-tier structure consisting of 3351 Gram Panchayat (GP), 341 Panchayat Samiti (block), and 18 Zilla Parishad (district) institutions. Over the past decade the state government has moved incrementally to decentralize service delivery and governance responsibilities and resources to PRIs. Aggregate funding flows to these entities have increased significantly, some funding from state departments (e.g. Public Health) has been devolved to PRIs, and GPs now have the authority to directly employ limited numbers of workers in certain sectors. The overall process is guided by two key formal policy documents - the “Activity Map” and the “Devolution Roadmap” – both of which have received State Cabinet endorsement. The Government of West Bengal (GoWB), specifically the Panchayat and Rural Development Department (PRDD), is committed to expanding and deepening this process through providing PRIs with the resources, capacities and incentives to improve service delivery and governance. In particular, GoWB wishes to focus on GPs - which are legally empowered to deliver local infrastructure and services in sectors such as health, education, water, roads etc. - as critical delivery and governance units within the overall PRI system. Despite these best intentions, role of PRIs is restricted mostly for an initial identification of villages/beneficiaries, assisting in securing lands, and formation of Beneficiary Committees for post construction maintenance.

7.2 IDENTIFICATION OF STAKE HOLDERS

The project requires the initial identification of potential stake holders and clarifications of any role they might be willing to play in the Project. Lists of wide range of stake holders at various levels have been identified and are presented in **Table 7.2 to 7.5**. The list was compiled using suggestions of departmental officers and other sources for enlisting 42 groups of Direct Stake holders and 30 groups of Indirect Stake holders at various levels.

Table 7.2: Village / Gram Panchayat level stake holders

Direct Stake holders	Indirect Stake holders
Village Level	
Land owning Cultivators (small, marginal, medium and big) and share croppers and absentee landlords	Rice mill owners
SHG involved in agriculture	Traders-buyers, vegetable vendors, rice traders flower vendors, egg collectors, Agricultural waste traders (straw, jute stick etc.)
Agricultural labourers, daily wage earners including women labourers	Various community level institutions
Cattle grazers, live stock owners	Retailers (seeds, fertilizer and pesticide, agricultural implements etc.)
Common villagers using the scheme as a source of drinking water, bathing, toilet, washing clothes, observing rituals (in reservoir type schemes) etc.	Local informal credit institutions (money lenders, Mahajans)
Contractors engaged in construction and Maintenance work etc.	Traditional occupation groups (carpenters, black smith, mason, plumber and electricians etc.)
Traditional occupation groups like Black smithies, repairing outlets, van-rickshaw pullers, vendors, Pump motor mechanics	
Poor villagers picking green vegetables, pulses etc. from the Agricultural field.	
Gram Panchayat members	
Govt. functionaries like operator, Amin, Agriculture worker, forest worker etc.	
NGO functionaries, SHG	
Villagers engaged in social forest culture, poor villager collecting dead branches of trees and leafs (particularly woman and female child) etc.	
Gram Panchayat Level	
Pradhan, members, ex-Pradhan and members, Secretary etc. of the Gram Panchayat (GP)	Traders
Govt. functionaries of various departments	Retailers
	Formal and informal credit institutions etc.

Table 7.3: Block / Sub-divisional Level stake holders

Direct Stake holders	Indirect Stake holders
Block Level	
Block Development Officer	Formal credit institutions
ADO (Agricultural Development Officer)	Traders
Sub-Assistant Engineer (W.R.D. D)	Retailers
Veterinary Officer	Transporters etc.
Revenue Inspector	
Sabhapati and members of Panchayat Samities	
NGO functionaries etc.	
Sub-divisional Level	
Assistant Engineers (WRI&DD)	Formal credit institutions
Sub-divisional Agriculture Officers	Retailers
Other sub-divisional level Govt. Officers including Inspector of BCWD	Sellers
	Media etc.

Table 7.4: District Level stake holders

Direct Stake holders	Indirect Stake holders
Superintending Engineer and Executive Engineers (WRI&DD)	Formal credit institutions
PAO (Principal Agriculture Officer)	Retailers
District Magistrate	Traders
Soil Conservation Officer	Transporters
District Fishery Officer	District level officers of other Govt. Department
Sabhadhipati, Karmadhyaksya, KSOSSS and members of the Zilla Parishad	MLA / MP
CMOH (Chief Medical Officer of Health)	Media etc.
District Veterinary Officer	
District Welfare Officer, BCWD	
NGO functionaries	
District Officers of Agro-Industries Corporation	
Divisional Engineers, WBSEDC Ltd.	
Divisional Engineers, WBSMIC Ltd.	
District land and land revenue officer	
Contractors and suppliers	

Table 7.5: State Level stake holders

Direct Stake holders	Indirect Stake holders
Water Resources, Investigation and Development Department (WRI&DD)	Traders
West Bengal State Minor Irrigation Corporation Ltd. (WBSMIC Ltd.)	Retailers
West Bengal State Agro Industries Corporation Ltd. (WBSAIC Ltd.)	Companies (seed, fertilizer, pesticides, pump-motor and its accessories, pipes valves etc.)
Department of Agriculture, Agricultural Marketing, Fisheries, Horticulture, Animal Resources	Development Programmes of other departments
Department of Panchayat & Rural Development	Media groups etc.
Backward Classes Welfare Department	
West Bengal State Electricity Distribution Company Ltd	
Departments of Finance	
NGO functionaries.	

The Social Assessment Team has identified some 20 of the above as Key stake holders who can exert significant influence on the project's outcomes.

Village level key stakeholders include: (i) land owning cultivators; (ii) share croppers; (iii) absentee landlords; (iv) Gram Panchayat President (Pradhan) and other members; (v) Operators; and (vi) SHGs and other youth organizations.

Block : (i) Panchayat Samiti President (Sabhapati) and members; (ii) Block Development Officer; (iii) Agricultural Development Officer; (iv) Executive/ Assistant Engineer, WRIⅅ and (vi) Contractors and suppliers.

District : (i) Sabhadhipati, Zilla Parishad; (ii) Karmadhyaksya, Krishi – Sech – O – Samabay – Sthayee – Samiti (Standing Committee); (iii) Inspector of Backward Classes Welfare Directorate (BCWD); (iv) Project Officer cum District Welfare Officer of BCWD; (v) Executive Engineer, Superintend Engineer, WRI & DD; (vi) Department of fisheries; (vii) contractors and suppliers; and (viii) West Bengal State Electricity Distribution Company Limited.

State: (i) Secretary, WRIⅅ (ii) Engineer in Chief, WRIⅅ (iii) Project Director, ADMI; (iv) Department of Finance; (v) Department of Panchayat and Rural Development; (vi) Departments of Agriculture, Horticulture, Fisheries.

7.3 STAKE HOLDER CONSULTATION

- **Community level consultation**

Consultations with members of the different communities were conducted during visits to the sites. Inclusion of share croppers, Landless, women, prominent members of

different communities were given priority. Detailed discussions were held with the village elders and knowledgeable persons about the different community groups to understand their issues particularly those associated with community life, social organization and relationship with natural resources. Discussions were also held with the village and sub-divisional level Govt. officials particularly from BCWD and WRI&DD relating to development of communities. Discussions were also held with the Panchayati Raj Institutions and officials of line departments on exploring the possibilities of dovetailing existing Govt. schemes in the area for the overall socio-economic development of different communities. Attempts were also made to assess the vulnerability of the different community groups particularly on their livelihoods and their dependence on minor irrigation schemes. Discussions also focused on the impacts of the proposed project and on the identification of measures required to enhance the participation of different communities in the project planning and implementation.

All the stake holders are aware of Minor Irrigation activities in their areas and have already indicated interest in the development of Minor Irrigation. As the details of WBADMIP is not yet well known to them, group consultations were conducted for analysis of stakeholders requirements in different sample blocks covering all 18 districts.

- **Village level consultation**

Village level consultations were organized at 109 villages covering all the sample blocks in 18 districts of the state.

All such consultations as organized are presented below in **Table 7.6** mentioning stakeholders categories and the strength of participation against each category.

Table 7.6: List of Stakeholder Categories and Strength of Participation against each

Sl.	Location	Type of Scheme	Operation & Maintenance	Total no. of Participants	Officials Present			Villagers Present			
					Deptt	PRI	Total	General	SC / ST	Women	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(A) Coochbehar (13.02.2009 – 14.02.2009)											
1	Dalua Dasgir Coochbehar-I	Major RLI	Department	25	4	1	5	13	7	5	20
2	Monjarampur Tufangunj-II	PDW	Farmers	10	4	1	5	3	2	-	5
3	Bosmansingh Haldibari	STW	Beneficiary	18	4	1	5	6	7	4	13
4	Chilakhana / Tufangunj-I	MDTW	Beneficiary	25	4	1	5	12	8	4	20
(B) Darjeeling (16.02.2009 & 26.04.2009)											
5	Falash / Phansidewa	Mini RLI	Beneficiary	25	4	1	5	15	5	2	20
6	Hatiram / Kharibari	Mini RLI	Beneficiary	20	4	1	5	12	3	3	15

Sl.	Location	Type of Scheme	Operation & Maintenance	Total no. of Participants	Officials Present			Villagers Present			
					Deptt	PRI	Total	General	SC / ST	Women	Total
7	Alokjhari / Kharibari	Sprinkler	Beneficiary	22	4	1	5	8	9	2	17
8	Rajajhar / Naxalbari	PDG	Farmers	42	4	1	5	22	15	20	37
9	Bandargach Phansidewa	RLI	Department	59	8	1	9	32	18	16	50
10	Sukna / Matigara	WDS	Farmers	10	3	1	4	4	2	-	6
(C) Jalpaiguri (15.02.2009 – 16.02.2009 & 25.04.2010)											
11	Niranjapur at Dhupguri	Mini RLI	Beneficiary	47	8	1	9	11	27	5	38
12	Kodal Kathi / Malbajar	STW SFMI	Beneficiary	58	8	1	9	23	26	11	49
13	Dholabari / Malbajar	STW	Beneficiary	28	4	1	5	11	12	4	23
14	Debijhora Dhupguri	SFMI	Beneficiary	37	4	2	6	9	22	7	31
15	Dakshin Bhuskadanga Maynaguri	Mini RLI	Beneficiary	32	8	2	10	7	15	4	22
16	Lalitabari / Rajgunj	MDTW (Proposed)		41	8	2	10	4	27	9	31
17	Uttarmajgram / Mal	STW	Beneficiary	26	8	2	10	16	-	2	16
18	Uttardangapara	STW (Proposed)		31	8	1	9	5	17	3	22
19	Kalabari / Nagrakata	Mini RLI	Farmers	14	4	1	5	4	5	-	9
20	Mujnai Madarihat	WDS	Beneficiary	13	4	1	5	6	2	-	8
21	Chaparerpar Alipurduar-II	STW	Beneficiary	21	4	1	5	10	6	8	16
22	Deomali / Falakata	STW	Beneficiary	22	4	1	5	12	5	4	17
(D) Uttar Dinajpur (11.02.2009 – 12.02.2009)											
23	Aliganj Islampur	STW	Beneficiary	13	3	1	4	6	3	2	9
24	Haria Karandighi	INWB	Farmers	22	3	1	4	18	-	8	18
25	Jatapur Hemtabad	WHT	Farmers	10	3	1	4	5	1	2	6
26	Jamalpur Itahar	Major RLI	Department	25	3	1	4	15	6	4	21
27	Fulatti / Kaliaganj	HDTW	Department	23	4	1	5	13	5	3	18

Sl.	Location	Type of Scheme	Operation & Maintenance	Total no. of Participants	Officials Present			Villagers Present			
					Deptt	PRI	Total	General	SC / ST	Women	Total
(E) Dakshin Dinajpur (10.02.2009 – 11.02.2009)											
28	Gouripara / Banshihari	STW	Beneficiary	19	4	1	5	10	4	3	14
29	Jamalpur / Tapan	WHT	Farmers	13	4	1	5	6	2	3	8
30	Paranpur / Balurghat	Major RLI	Department	28	4	1	5	17	6	4	23
31	Katapur / Gangarampur	Waterbody	Farmers	24	4	1	5	16	3	2	19
(F) Malda (08.02.2009 – 09.02.2009)											
32	Kahartta Harischandrapur -I	STW	Beneficiary	13	3	1	4	6	3	2	9
33	Gobindopur / Ratua-II	Major RLI	Department	21	3	1	4	12	5	3	17
34	Baliadanga Kalichak-I	STW	Beneficiary	14	3	1	4	7	3	2	10
35	Mandirpur / Old Malda	HDTW	Department	31	4	1	5	17	9	4	26
36	Musadanga / Gajol	HDTW	Department	33	4	1	5	21	7	6	28
37	Atgama Gajol	SFMI	Farmers	15	4	1	5	7	3	-	10
38	Bamangola Bamangola	SFMI	Farmers	11	4	1	5	5	1	-	6
(G) Murshidabad (08.02.2009 to 10.02.2009)											
39	Basumati-I / Lalgola	RLI	Department	26	4	1	5	15	6	7	21
40	Bhabta / Beldanga-I	RLI & DTW	Department	37	6	1	7	22	8	5	30
41	Ratanpur / Beldanga-I	RLI	Department	38	4	1	5	17	16	5	33
42	Dighirpar Raninagar-I	RLI	Department	33	4	1	5	20	8	6	28
43	Dasturhat / Sagardighi	Major RLI	Department	38	4	1	5	27	6	4	33
(H) Nadia (28.01.2009 & 29.01.2009)											
44	Bhomrapara Haringhata	Major RLI	Department	29	4	1	5	19	5	3	24
45	Uttar Bahirgachi Nakashipara	HDTW	Department	33	4	1	5	26	2	4	28
46	Dahakula / Karimpur-I	Major RLI	Department	62	4	2	6	47	9	13	56

Sl.	Location	Type of Scheme	Operation & Maintenance	Total no. of Participants	Officials Present			Villagers Present			
					Deptt	PRI	Total	General	SC / ST	Women	Total
(I) 24 Parganas (N) (19.02.2009 & 20.02.2009)											
47	Deara / Bagda	Mini RLI	Beneficiary Committee	47	3	1	4	36	7	9	43
48	Mamudpur Barrackpur-I	DTW	Beneficiary Committee	64	4	1	5	48	11	3	59
49	Aira / Habra-I	HDTW	Beneficiary Committee	62	4	1	5	42	15	12	57
50	Debitala / Minakhan	Lift Scheme	Beneficiary Committee	47	3	1	4	20	23	3	43
51	Patkulpota Sandeshkhali-II	Lift Scheme	Beneficiary Committee	47	3	1	4	15	28	6	43
(J) 24 Parganas (S) (07.01.2009 & 08.01.2009)											
52	Kerolberia Bhangar-II	Major RLI	Department	50	4	1	5	37	8	10	45
53	Atghara / Baruipur	MDTW	Department	31	4	1	5	20	6	3	26
54	Godabar / Kultali	WHT	Farmers	13	4	1	5	4	4	-	8
(K) Howrah (31.12.2008)											
55	Ghsopur / Amta-I	Major RLI	Beneficiary Committee	45	4	1	5	28	12	6	40
(L) Hooghly (27.11.2008, 16.12.2009)											
56	Mashat-Ghoshpara Chanditala-I	WHT	Farmers (no committee)	20	3	1	4	12	4	4	16
57	Debanandapur Chinsura-Mogra	DTW	Department	40	3	1	4	30	6	6	36
58	Multi / Pandua	LDTW DTW	Department	38	3	1	4	12	22	4	34
59	Tarajit Kotulpur Khanakul-II	RLI	Beneficiary Committee	30	3	1	4	22	4	8	26
60	Damodarapur / Goghat-II	RLI	Beneficiary Committee	44	3	1	4	32	8	11	40
61	Basna / Balagarh	INWB	Beneficiary Committee	31	4	1	5	20	6	4	26
62	Hansgora / Chinsura-Mogra	Major RLI	Department	39	8	2	10	22	7	6	29
63	Fatepur / Chinsura-Mogra	DTW	Department	43	8	2	10	25	8	4	33
(M) Burdwan (22.02.2009, 23.02.2009 & 25.03.2010)											

Sl.	Location	Type of Scheme	Operation & Maintenance	Total no. of Participants	Officials Present			Villagers Present			
					Deptt	PRI	Total	General	SC / ST	Women	Total
64	Bharpeta / Memari-I	HDTW	Beneficiary	48	3	1	4	28	16	12	44
65	Shankarpur / Memari-I	LDTW & HDTW	Beneficiary Beneficiary	43	3	1	4	32	7	11	39
66	Chaupira / Memari-I	LDTW	Farmer	20	3	1	4	4	12	5	16
67	Jot Chaitan / Memari-I	LDTW	Society	27	3	1	4	17	6	7	23
68	Teora / Ketugram-II	Dugwel I	Farmer	5	2	1	3	2	-	-	2
69	Dhobani / Faridpur-Durgapur	WHT	Farmer	8	2	1	3	3	2	2	5
(N) Birbhum (11.01.2009, 12.01.2009 & 12.04.2010 – 13.04.2010)											
70	Laldaha / Bolpur-Srinikatan	Mini RLI	Beneficiary Committee	41	4	1	5	11	25	8	36
71	Mahisadal / Bolpur-Srinikatan	RLI & STW	Department & Private	33	4	1	5	3	25	12	28
72	Darpasil / Bolpur-Srinikatan	WDS & STW	Beneficiary & Private	49	4	1	5	28	16	8	44
73	Dam Dama / Bolpur-Srinikatan	Surface flow Schemes	Farmers	35	4	1	5	3	27	7	30
74	Amgachi Suri - I	Un irrigated	-	34	4	1	5	-	29	15	29
75	Gara / Dubrajpur	LDTW	Department	24	4	1	5	11	8	3	19
76	Kharui / Dubrajpur	LDTW	Department	20	4	1	5	9	6	2	15
77	Ramnagar / Ilambazar	LDTW	Department	20	4	1	5	12	3	6	15
78	Sarparajpur / Lavpur	Mini RLI	Beneficiary Committee	30	4	1	5	20	5	4	25
79	Bhola / Nalhati - I	Dug Well	Govt.	7	3	1	4	2	1	-	3
80	Kutubpur / Rampmhat - I	Major RLI	Department	26	3	1	4	17	5	2	22
(O) Paschim Medinipur (03.02.2009 & 04. 02.2009)											
81	Abdalipur, Debra	HDTW	Department	42	4	1	5	15	22	6	37
82	Paschim Dharasol Debra	HDTW	Department	42	4	1	5	12	25	8	37

Sl.	Location	Type of Scheme	Operation & Maintenance	Total no. of Participants	Officials Present			Villagers Present			
					Deptt	PRI	Total	General	SC / ST	Women	Total
83	Amrakuchi, Keshpur	MDTW	Department	32	4	1	5	11	16	3	27
84	Sonadiha, Keshpur	MDTW	Department	29	4	1	5	16	8	4	24
85	Kamalapur, Medinipur	MDTW	Department	30	4	1	5	8	17	8	25
86	Panchkuri, Medinipur	MDTW	Department	23	4	1	5	12	6	3	18
87	Velajhuri, Jhargram	WHT	Farmers	14	3	1	4	-	10	3	10
88	Nutandihi, Binpur - I	WHT	Farmers	18	3	1	4	2	12	5	14
89	Ghosalband, Garbeta - I	INWB	Farmers	17	3	1	4	6	7	4	13
(P) Purba Medinipur (02.02.2009 & 03.02.2009)											
90	Aklabad, Egra - I	DTW	Department	43	4	1	5	30	8	3	38
91	Bara Kumarda Patashpur - II	HDTW	Department	33	4	1	5	22	6	5	28
92	Chak Bhabani Patashpur - II	DTW	Department	40	4	1	5	17	18	6	35
93	Gobardhanpur Patashpur - II	LDTW	Department	39	4	1	5	29	5	2	34
94	Lachubad, Patashpur - II	HDTW	Department	48	4	1	5	28	15	6	43
95	Sirkantha Kalagonda Tamluk - I	Major RLI	Department	36	4	1	5	22	9	4	31
96	Raghunandanpur Contai - III	Major RLI	Beneficiary	28	4	1	5	15	8	3	23
(Q) Bankura (25.02.2009 & 26.02.2009)											
97	Bonkathi, Bishnupur	Mini RLI	Department	24	3	1	4	12	8	3	20
98	Hazrapukur Bishnupur	MDTW	Department	21	3	1	4	11	6	2	17
99	Parasia, Chhatna	RLI	Department	29	3	1	4	18	7	5	25
100	Radhamadhabpur Bishnupur	DTW	Department	19	3	1	4	12	3	2	15
101	Malpur, Bishnupur	HDTW	Department	20	3	1	4	11	5	3	16
102	Jantadumur Ranibandh	Major RLI	Department	28	3	1	4	16	8	5	24
103	Gorasole, Onda	INWB	Farmers	16	4	1	5	6	5	3	11

Sl.	Location	Type of Scheme	Operation & Maintenance	Total no. of Participants	Officials Present			Villagers Present			
					Deptt	PRI	Total	General	SC / ST	Women	Total
104	Koleberia, Kotulpur	WHT	Farmers	9	4	1	5	2	2	-	4
(R) Purulia (24.02.2009 & 25.02.2009)											
105	Nildi, Raghunathpur	RLI	Department	23	3	1	4	12	7	5	19
106	Solanchi	Major RLI	Department	23	3	1	4	14	5	2	19
107	Belguma, Purulia	Dug Well	Beneficiary	7	3	1	4	2	1	1	3
108	Jambad, Hura	SFMI	Farmers	19	4	1	5	6	8	4	14
109	Kushumtikri Bagmundi	SFMI	Farmers	17	4	1	5	5	7	3	12

• **District level Consultation**

District level stakeholder consultations were held in all the 18 districts with the officials of WRI&DD, district level officials of other departments, the District Welfare Officials of Backward Classes Welfare Department and the members of Zilla Parishad. The most important objective of the consultation was to assess the community willingness towards the implementation of Minor Irrigation Schemes and its subsequent operation and maintenance. Consultations in the district were spread over the period from 27.11.2008 to 13.04.2010.

Major issues of the discussions were:

- ⌚ WBADMIP
- ⌚ Status of Minor Irrigation in the district
- ⌚ Scope of development of Minor Irrigation in the district
- ⌚ Selection of sites for MI Schemes to benefit tribal groups
- ⌚ Implementation of MI Schemes
- ⌚ Handing over of MI Schemes to WUA for Operation and Management.

Details of participation of different district level authorities in the discussions are presented in **Table 7.7**.

Table 7.7: District Level Stakeholders categories and strength of Participation

Sl. No.	District	Date	Total no. of Official Discussions	Category of Officials					
				Administra-tion	PRI	SWID	Agri-culture	BCWD	WRDD
1	Darjeeling	16.02.2009	21	2	2	1	3	2	11
2	Jalpaiguri	15.02.2009	27	2	4	2	2	2	15
3	Coochbehar	14.02.2009	14	2	3	1	2	1	5
4	Uttar Dinajpur	12.02.2009	19	2	4	1	3	2	7
5	Dakshin Dinajpur	11.02.2009	9	1	2	-	1	1	4
6	Malda	09.02.2009	16	1	3	2	2	1	7
7	Murshidabad	10.02.2009	12	1	2	1	2	1	5
8	Nadia	28.01.2009	12	1	1	1	2	1	6
9	24-Parganas (North)	19.02.2009	9	1	2	1	1	1	3
10	24-Parganas (South)	07.01.2009	7	1	1	1	1	-	3
11	Howrah	31.12.2008	5	-	1	1	1	-	2
12	Hooghly	27.11.2008	17	1	3	1	3	1	8
13	Burdwan	22.02.2009, 25.03.2010	17	1	3	2	2	2	7
14	Bankura	25.02.2009	12	1	2	1	2	1	5
15	Purulia	24.02.2009	11	1	2	1	2	1	4
16	Birbhum	11.01.2009, 12.04.2010	9	1	2	-	1	2	3
17	Purba Medinipur	02.02.2009	10	1	2	1	2	-	4
18	Paschim Medinipur	04.02.2009	14	1	3	2	2	1	5

- **Consultation in Tribal Districts**

14 districts are included in the Tribal Sub-plan of West Bengal. During consultation at village and district levels, all those districts were covered. 7 villages having tribal concentration more than 40% in the districts of Birbhum and Burdwan were identified. Consultations were also held in those villages to assess the status of Scheduled Tribe communities and their concern about Minor Irrigation.

Consultation in Scheduled Tribe Villages

Major issues discussed in the consultations at 7 identified tribal villages were:

- ⊕ Status of their livelihood
- ⊕ Scope of Minor Irrigation development covering their lands.
- ⊕ Participation in the operation and management of schemes.
- ⊕ Land for installation of Minor Irrigation Schemes.

The stakeholder categories and the strength of participation against each category are presented in **Table 7.8**.

Table 7.8: Stakeholder categories and the strength of participation

Sl. No.	District	Date	Total no. of Participation	Category of Participation						
				PRI	Cultivator	Agril. Labour		Share cropper	Other villagers	WRDD
						Male	Female			
A. District – Burdwan										
1	Chaupira	25.03.2010	20	1	6	5	3	1	1	3
2	Bharpota	Do	48	1	13	9	12	3	7	3
3	Jotchaitan	Do	27	1	6	3	5	2	7	3
B. District – Birbhum										
1	Mahisadal	12.04.2010	33	1	9	5	8	3	3	4
2	Darpasil	Do	49	1	14	15	8	4	3	4
3	Dam Dama	Do	35	1	8	9	6	3	4	4
4	Amgachi *	13.04.2010	34	1	10	6	10	1	2	4

* The village has no irrigation scheme. Agriculture is totally rainfed.

District level consultation for Tribal Welfare

Project Officer cum District Welfare Officers of Backward Classes Welfare Department in the districts of Burdwan and Birbhum were consulted respectively along with District Level Engineers of WRDD.

Major issues for discussions were:

- ⌚ Different ongoing welfare schemes for tribals.
- ⌚ Scope of Minor Irrigation development in the tribal concentrated villages.
- ⌚ Selection of Minor Irrigation schemes in the target villages.

● **State level Consultation**

Consultations were held at state level with senior level officers of different departments, corporations and Board from time to time spread over the period from August, 2008 to June, 2009. During the discussions various inputs related with the WBADMIP were conceived. The list of officials consulted includes:

16. Principal Secretary, Department of WRI&D
17. Engineer in Chief, WRI&DD
18. Chief Engineers, WRDD
19. Managing Director, WBSMIC Ltd.
20. Director, Agriculture
21. Officials of BCWD
22. Director, Agril. Marketing

23. Director, Horticulture
24. Director (Distribution), West Bengal State Electricity Distribution Co. Ltd.
25. Professor to Calcutta University
26. Project Director, WBADMIP
27. Officials of Animal Resources Department
28. Officials of Fisheries Department
29. Officials of Sericulture Department
30. Director, State Water Invention Directorate (SWID)
31. Superintending Geologist, SWID

VIII. LANDS FOR MINOR IRRIGATION FACILITIES

8.1 TYPES OF MINOR IRRIGATION SCHEMES

There are 8 types of Minor Irrigation Schemes in the WBADMI Project.

- | | |
|---|--|
| i) Medium Duty Tube well (MDTW) | ii) Light Duty Tube well (LDTW) |
| iii) Shallow Tube well (STW) | iv) Pump Dug Well (PDW) |
| v) Midi River Lift Irrigation (Midi-RLI) | vi) Mini River Lift Irrigation (Mini RLI) |
| vii) Surface Flow Minor Irrigation Schemes (SFMIS) | viii) Water Detention Structures (WDS) |

Brief details of the sub-projects are noted below.

- | | |
|--|--|
| i) Medium Duty Tube well (MDTW) | Medium Duty Tube well (MDTW) with submersible pump set irrigating CCA 20 ha with discharge of 100 m ³ /hr. The tube well is housed in a pump house of size 4 m x 4 m approx. A tripod connected with 2 loops with 10 spout chambers constitutes the water distribution system. A transformer is installed near the pump house for supply from HT line. |
| ii) Light Duty Tube well (LDTW) | Light Duty Tube well (LDTW) with submersible pump set irrigation CCA 6 ha with discharge of 30 m ³ /hr. The tube well is within a pump house of size 2 m x 2 m approx. Water from the tube well is received in a small chamber outside the pump house from where field channel takes care of water distribution. A transformer is installed near the pump house for power supply. |
| iii) Shallow Tube well (STW) | It is a similar nature of scheme like LDTW but runs with centrifugal pump set electrically / diesel operated. |
| iv) Pump Dug Well (PDW) | Pump Dug Well (PDW) with centrifugal pump set irrigating CCA 5 ha with discharge around 30 m ³ /hr.. Normally, pump house is not constructed. Water is distributed through field channel. In most cases pumps are run with diesel. |
| v) Midi River Lift Irrigation (Midi-RLI) | Water from rivers, canals, beels etc. is lifted by two centrifugal pump sets each capable of discharging 100 m ³ /hr. CCA is 40 ha. A quadruped with 3 loops with 15 spout chambers distributes water in the command. A transformer is installed near the pump house of size 4 m x 4 m approx. in electrical scheme. Pumps are also run by diesel |
| vi) Mini River Lift Irrigation (Mini-RLI) | It is similar to that of Mini RLI. CCA is 20 ha. Discharge of two pump sets at 30 m ³ /hr each.. A tripod with 2 loops with 8 spout chambers distributes water in the command. Pump house, transformer etc are similar. There are diesel run schemes also. |

- vii) Water Detention Structures (WDS)** Water Detention Structures (WDS) store water at the upstream side of a surface run-off. Check dam, Nala bundh etc are types of such structures. Water is distributed to the fields by gravity flow, siphon or even by pump sets.
- viii) Surface Flow Minor Irrigation Schemes (SFMIS)** Surface Flow Minor Irrigation Schemes (SFMIS) diverts water to the fields from water bodies. A diversion structure is constructed at a suitable location near the water body. No pump set is required. CCA is 30 ha to 50 ha.

In general farmers are inclined for conversion of diesel run schemes into electrical one due to steady rise of price of diesel.

Culturable Command Area (CCA) and approximate nos of farmers involved in each sub project are presented in **Table 8.1**

Table 8.1: Area and Number of Farmers

Sl. No.	Technology/Scheme	CCA (acres)	No of Farmers (Approx)
1	MDTW	50	30
2	LDTW	15	9
3	STW	15	9
4	PDW	12	7
5	Midi RLI	100	60
6	Mini RLI	50	30
7	WDS	10-25	6-15
8	SFMIS	75- 125	45- 80

8.2 LAND REQUIREMENTS FOR MINOR IRRIGATION STRUCTURES

Land requirement for individual Minor Irrigation Structures is quite less, maximum requirement in a sample scheme is up to 0.035 acres (3.5 decimal). In all, 256 acres of land are required in the project for installation of 14190 nos (4660 clusters) of schemes for creation of additional CCA of 138901 ha. Scheme wise requirement of land is given in **Table 8.2**. For Surface Flow Minor Irrigation schemes and WDS, practically no land is required due to nature of the schemes. Such schemes are installed at the fringe of the water body and across the surface water runoff respectively.

Table 8.2 : Scheme wise land requirement

Sl. No.	Name of Sub Project	Land requirement Per Scheme	Total no. of Structures in the project	Total land (actual) (Acre)	Total Lands (in practice)* (Acre)
1	MDTW	0.035	359	12.6	16.4
2	LDTW (Cluster of 6)	0.01 x 6	522	31.3	40.7
3	STW (Cluster of 6)	0.01 x 6	1309	78.5	102
4	Midi-RLI (E)	0.035	464	16.2	21
5	Midi-RLI (D)	0.035	113	4.0	5.2
6	Mini-RLI (E)	0.035	892	31.2	40.5

7	Mini-RLI (D)	0.035	525	18.3	23.8
8	SFMIS (30, 40, 50)	nil	95+75+114	nil	nil
9	WDS	nil	117	nil	nil
10	PDG (Cluster of 6)	0.01 x 6	75	4.5	5.9
Total			4660	196.6	255.5

*In practice, some provision will have to be made for access and other purposes, which works out to about 30% of the actual requirement.

8.3 AVAILABILITY OF LAND

Minor irrigation schemes in the state are cultivator friendly. It does not require much of a land for accommodating its structures. Schematic layout plan for different sub-projects are given in **Fig 8.1, Fig 8.2, Fig 8.3 and Fig 8.4**. Current price of 5 decimal of land ranges between rupees five thousand to thirty thousand depending on nature of soil and irrigation facilities etc. Cultivators arrange for voluntary donation of required piece of land for installation of a scheme since tradition. Almost in all cases land donor is partially compensated by the beneficiary committee with cash. Field officers of WRI & DD cannot recall any dispute over the donation of land for Minor Irrigation Schemes.

In the above context, availability of land for schemes under the project is not a problem. The WUA could arrange for such requirements like the beneficiary committees and it would be regarded as a direct contribution towards the project implementation.

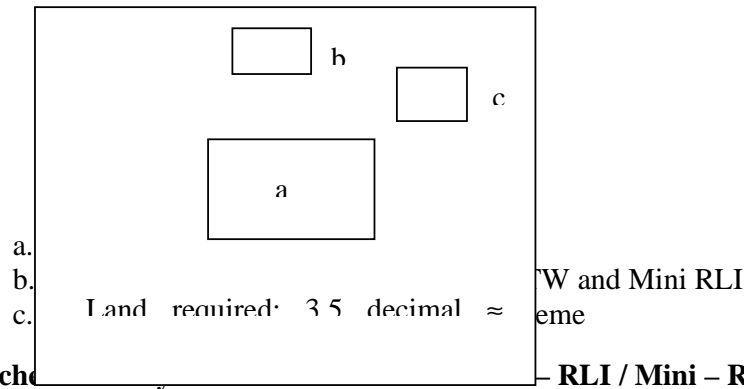


Fig 8.1: Schematic layout plan for Mini-RLI / Mini-RLI

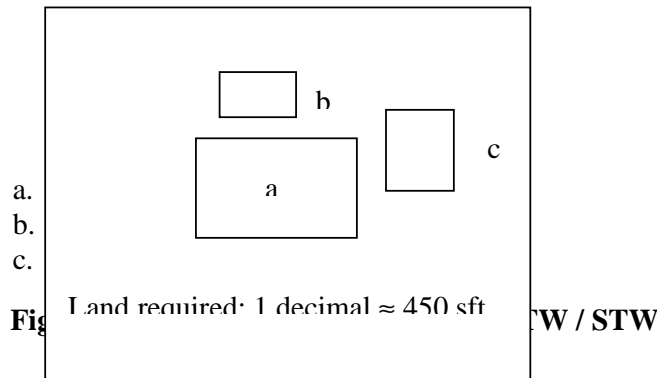
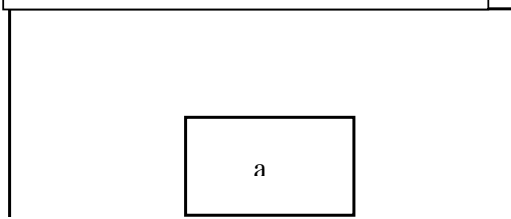
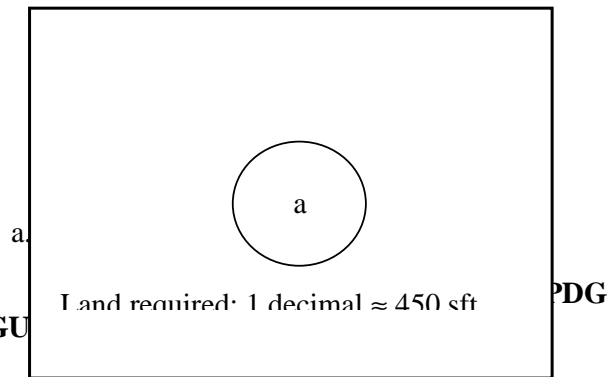


Fig 8.2: Schematic layout plan for W / STW



- a. Pump house 2 m x 2 m approx.

Fig 8.3: Schematic Layout Plan of a Sprinkler / Drip



8.4 SOCIAL SAFEGUARD

8.4.1 Land

Technologies / schemes can be classified into two broad categories: one, those drawing water from surface sources and two based on Ground Water. The former comprise:

- i) River Lift Schemes,
- ii) Water Detention Structures,
- iii) Surface Flow MIS
- iv) Sprinkler and
- v) Drip Irrigation Schemes

The latter comprise: Tube Wells (Medium / Light / Shallow) and Pump Dug Wells. The scheme typology is also indicative of the command area that it would serve. River lifts will have a command area of a maximum of 40 ha, whereas Tube Wells 20 ha. Of the 2395 SWS proposed, 80% of the schemes will have a CCA of a maximum of 20 ha. Likewise, 95% of the GW schemes will have a CCA of 6 ha. Thus, MI scenario is characterized typically by small scale systems and consequently small land requirements. The Social Assessment study indicates that the land requirement arises for three purposes:

- (i) Source Works – Head Works and Pump House
- (ii) Spout - Water outlets for regulating distribution; and
- (iii) Distribution System – Field channels for transmitting water to the fields.

Distribution lines are laid at least 1.2 m below ground elevation, no lands need to be 'acquired'. A spout is a small regulatory chamber requiring at the most an area of 16 sq. ft. Farmers compete with each other to have a spout in their plot as it provides them an advantage in securing water. So, no lands need to be acquired for a spout as not only the requirement is too small but also that it is demanded highly by the farmers. This leaves with the Source Works. Though the extent of land required depends on the type and size of the scheme, at the maximum, it works out to about 1,500 sq. ft., viz, 0.035 Acre. And it is not

necessary that the project should acquire ‘the’ piece of land. Enough flexibility is available for the choice of a land. Given this situation, of lands required being quite small and that it is not necessary that a particular piece of land is required, traditionally, land for source works are secured on a voluntary basis, through donations. Thus, there is no need for involuntary land acquisition.

In order to make this process of voluntary land donations transparent, the following rules shall be adopted:

- i) Voluntariness shall be ascertained by the WRI&D department and duly documented. Under any circumstances, the land user will not be subjected to any pressure, directly or indirectly, to part with the land.
- ii) The Department shall ensure that there shall be no significant adverse impacts on the livelihood of the household donating the land. Preferably, the voluntary donation should not be no more than 10 percent of the area of any holding by the land owner. The land donated should not be more than 1,500 sq. ft.
- iii) This should not result in any physical relocation.
- iv) The facilities requiring land should not be site specific.
- v) The land in question must be free of squatters, encroachers, share cropping or other claims or encumbrances.
- vi) The Department shall facilitate the prospective water users in arriving at extending ‘gratitude’ to the land donor in lieu of the ‘contribution’ s/he has made. The same shall be documented and monitored for compliance.
- vii) Land transfers will be complete, land title will be vested in the Government; and provision will be made for redressal of grievances (ROG) if any.

8.4.2 Processes and Instruments

A. Voluntariness

1. Support Organization and Assistant Engineer of the Department shall conduct enquiries as deemed necessary, to understand the land user’s ‘interest’ / ‘motive’ behind the offer to donate land for the scheme.
2. Support Organization and Assistant Engineer shall also assess adverse impacts (if any) on the household of the donor as a result of parting with the land.
3. A certificate to this effect that they are satisfied of the ‘voluntariness’ and that it will have no impact on the livelihood will be prepared and signed by Support Organization and Assistant Engineer, with counter signature from the donor.
4. The Executive Engineer shall randomly cross check from time to time and satisfies himself of the results.
5. The Department shall develop methodology to conduct such enquiries and a template for the certificate.
6. It is desirable that the project enlists Support Organizations even for the pilot phase. In case, it is not feasible, then, Assistant Engineer alone will shoulder full responsibility with facilitation from GP.
7. Redressal of Grievances. The Executive Engineer shall address grievances, if any. If an amicable solution cannot be found at Executive Engineer level, the same shall be referred to the Superintending Engineer whose decision shall be final and binding.

B. Community's Gratitude

Traditionally, the prospective water users do express their thanks to the donor with some gratuity. This may entail some cash, waving off of the water charges, location of spout, employment or lands etc. It is prudent for the project to play the role of a facilitator in making explicit the 'gratitude', document the same and make it obligatory on the part of community for its fulfillment. The following process shall be adopted.

1. Support Organization and Assistant Engineer shall convene a meeting of the community and facilitate in an extensive deliberations among themselves as well as with the donor.
2. Gratitude agreed upon by the benefiting community and the proceedings of the meeting thereof shall be documented.
3. Minutes of the proceedings shall be signed by the benefiting community members.
4. This Gratitude Note shall find a reference in and annexed to the MOU as and when it is signed.
5. Support Organization and Assistant Engineer shall review / monitor this on a regular basis.

In an interim arrangement, in the absence of Support Organization, Assistant Engineer shall shoulder the responsibility and for the deliberations among:

- i) Self Initiated Community Organizer (SICO), the person who would have initiated the mass petition demanding the scheme.
- ii) GP President (Pradhan) or representative
- iii) 4 representatives of the community
- iv) Assistant Engineer. This gratitude note shall find a reference in and annexed to the MOU as and when it is signed.

IX. ISSUES OF SIGNIFICANCE FOR THE PROJECT

9.1 ISSUES OF SIGNIFICANCE FOR THE PROJECT

Issues of significance in the context of managing this project are as follows:

- (i) **Inclusion and equity.** The biggest challenge before the project is, how to include and equitably benefit the most marginalized sections of the populations (belonging to diverse socio-economic background e.g. ST, SC, women and other poor landless laborers. Should there be a question in 'exclusion', the project should be able to answer appropriately why some households/ sections did not get an opportunity to participate.
- (ii) **Cohesion.** Another challenge relates to, how one can ensure cohesiveness among various stakeholder **groups** and creates an enabling environment for project implementation. As observed, there are conflicts, elite capture and facilities being 'privatized'.
- (iii) **Participation.** As of now, there is no provision for legitimate local level institutions. With the result **arrangements** are rather ad-hoc resulting in inefficient management. Project needs to provide a vehicle for enabling community participation.
- (iv) **Transparency and accountability:** The other important issue before the project is with regard to setting up of a transparent and accountable system as far as implementation of the project is concerned.
- (v) **Decentralization.** Another important issue that the project would like to address is with regard to **establishment** of a decentralized governance mechanisms in implementation of ADMI project.
- (vi) **Land Acquisition.** Lands are required for the project. Involuntary acquisition need not and cannot be resorted to. Traditional practice of land donations in turn for some gratuity by community **needs** to be formalized.
- (vii) **Tribal development.** West Bengal has significant tribal population – about 6% of the total population or about 4.5 million people are categorized as Scheduled Tribes (ST). There are total thirty eight (38) notified STs in the state. The districts having significant tribal population in the state are : (i) W Medinipur; (ii) Purulia; (iii) Dakshin Dinajpur; (iv) Malda; (iv) Jalpaiguri; (v) Birbhum; and (vi) Burdwan. They live predominantly in the rural areas and their **social**, cultural, economic, political, and historical characteristics induce not only vulnerability, but also often renders them 'excluded' from development interventions. Following on the Indian national constitutional provisions, West Bengal state has drawn measures to safeguard and advance the interest of tribals. Given this, and in accordance with the World Bank Policy on Indigenous Peoples, OP 4.10, a Tribal Development Plan needs to be prepared to enable them participate in the project.
- (viii) **Livelihood Development.** While irrigation facility is a pre-requisite, there are equally significant conditions, such as agriculture and allied activity supports, which need to be fulfilled to **enable** the project to enable economic development.

- (ix) **Capacity Support and Capacity Building issues.** Capacity of stakeholders to manage and execute programs at different levels (community, block, district and state level) of project operation is another important issue or challenge before the project. The capacity issues can be broadly categorized as capacity support issues, and capacity building issues. The former is chiefly aimed at mobilizing communities into local level institutions such as Water Users Associations, **SHGs**, Fishers and other Commodity Interest Groups, for group action and link them with the external world as well. etc.. Capacity building comprise imparting training such as to developing knowledge, skills and management practices for performing a set of activities. These are highly critical for ensuring ownership and sustainability.
- (x) **Gender.** Women are one of the key constituents who have large stake but limited influence and **their** inclusion and participation is critical for the success of the project.
- (xi) **Convergence.** The departments directly associated with the project are WRI&DD, Fisheries, Agriculture, Revenue, Panchayati Raj and SC&ST Development departments. However during consultations with these departments, the study team could hardly find any inter-departmental **convergence** in terms of setting up of a common agenda and action plan; common execution strategy; joint monitoring and supervision, etc. for management of MI systems and improving MI based livelihoods. This is particularly the case in respect of inter face between MI and PRI who have to work closely to ensure the success.
- (xii) **Insurgency.** The **Naxalite-Maoist insurgency** is an ongoing conflict between Maoist groups, known as Naxalites or Naxals, and the Central as well as State governments. The insurgency **started** as a peasant rebellion in the eastern Indian village of [Naxalbari](#) in 1967 and has currently spread to a large swath in the central and eastern parts of the country referred to as the "[Red Corridor](#)". In 2006 the Indian Prime Minister called the Naxalites "The single biggest internal security challenge ever faced by our country. In 2009, he said the country was "losing the battle against Maoist rebels". Naxalites claim to be supported by the poorest rural populations, especially poor SCs and STs. They have frequently targeted tribals, police and government workers in what they say is a fight for improved land rights and more jobs for neglected agricultural labourers and the poor and follow a strategy of rural rebellion similar to that of the [protracted People's War](#) against the government.

As of 2009, Naxalites are active across approximately 220 districts in twenty states of India accounting for about 40 percent of India's geographical area. They are especially concentrated in an area known as the "[Red Corridor](#)", where they control [92,000 square kilometers](#). The Naxalites claim to operate in 182 districts in India, mainly in the states of [Jharkhand](#), [Bihar](#), [Andhra Pradesh](#), [Chhattisgarh](#), [Madhya Pradesh](#), [Maharashtra](#) and [West Bengal](#).^[11] In [West Bengal](#) areas west of [Howrah](#) are affected by the insurgency. Areas in West Bengal, specifically those of Jangalmahal and [Lalgarh](#), are some of the worst affected by anti-state violence by Maoist groups who cite the accumulation of unaccounted for wealth in the hands of elites and specific failure of the State to counter problems they were elected to

address such as [social discrimination](#) and [poverty](#). A good number of districts are thus affected by insurgency in the state. The situation is highly dynamic as the nature and extent of impacts vary from time to time and at times could impede project implementation.

X. DESIGN ELEMENTS TO APPROACH THE ISSUES

10.1 INCLUSION AND EQUITY SELECTION OF VILLAGES/ SCHEMES.

Efforts will be made to ensure that the selection is premised on a bottom up approach and through the ladder of PRIs. Individual communities will make a requisition to GPs who, after due examination, will in turn pass it on to PS. After due block level vetting, the same will move up to ZP. A committee at the district level headed by a Chairman, ZP will finalize the list. One of the parameters for finalization will include the proportion of SC/ STs. This administrative list will be subject to technical and social feasibility by the WRI&DD. The feasibility exercise will also involve consultations with the communities on their willingness, or otherwise for participation, seeking their acceptance, ascertaining availability of 'lands', and willingness to shoulder responsibility for operation and maintenance. The feasibility report is then submitted to ZP again with / without any suggestions for change, which will be incorporated before the final selection is made. Feasibility report may suggest modifying (including/ excluding) household coverage to ensure appropriate 'inclusion'. Such a report shall also be endorsed by the GP. WRI&DD will conduct consultations in the field with assistance from Support Organizations specially deployed for the purpose.

10.2 TRIBAL DEVELOPMENT

To ensure 'inclusion' of Tribals, in accordance with the Bank's policy, a separate Tribal Development Plan (TDP) has been prepared. Details of which are available in a separate report.

10.3 LANDS

There will be no involuntary acquisition of lands. Traditional practice of securing lands through donations shall be adopted. Details have been already presented in a previous section.

10.4 COHESION

This relates to nature and extent of understanding among individuals/ groups and has two broad dimensions. One, among the individuals in a group, viz., benefitting community; and two, between groups viz., between a benefitting group and others in the vicinity (upstream or downstream). While special capacity building initiatives have been planned to address intra-group cohesion, inter-group issues are rather 'macro' level and this will be managed as a part of the techno-social feasibility exercise done while selecting a village/ scheme. This is particularly the case in respect of water detention structures. Feasibility report will specifically address and report this as deemed appropriate and enable proper selection.

10.5 INSTITUTIONAL DEVELOPMENT

Project will mobilize the benefitting communities into a Water User Association (WUA) and will be capacitated to serve as a local level village institution. A WUA is created by delineating the command area under a minor irrigation scheme. All land holders (farmers and tenants) within the delineated command area constitute the members of the WUA. The area of a WUA is subdivided in order to equitably handle water management, maintenance, and governance. These constitute the Territorial Constituencies (TC) within a WUA, In the

Surface Flow Minor Irrigation schemes the sub-command area under the flow-outlet is the TC. In lift irrigation schemes Spout Command Area (SCA) is the sub-command area like TC. The existing Government Order will be modified such as to enable WUA to be associated with MI as a full partner (draft Act is ready and expected to be adopted soon). Elaborate provisions will be made for due consultations with the communities and their participation, during planning and construction. Government's commitment to transfer the assets and O&M responsibility to WUAs will be formalized through a Memorandum of Understanding (MOU). The role and responsibilities of WUAs will be delineated in the MoU, which will be signed between them and the District Project Director (DPD) on behalf of District Management Unit (DMU). The WUAs will also have to be empowered to levy & collect all charges including water as WUA funds for OMM purposes.

10.6 WUA's role will be emphasized clearly through a delineation of the activities through the project cycle/ phases-- (i) pre-planning & planning, (ii) implementation and (iii) consolidation:

- Pre-planning and planning phases : These phases will include community organization and facilitating community in preparing the micro-plan that includes (i) net planning, (ii) water audit, (iii) crop plan and (iv) water distribution plan;
- Implementation phase: This phase will also include community's role in execution of micro level water management, i.e, construction of masonry channels or purchase of lay-flat hoses for plot to plot conveyance of water from Spouts or Water Outlets. This is based on the financial limit of works for tendering. Concurrent monitoring and supervision will also be done by WUAs;
- Consolidation phase : This will emphasize on land holding of community based institutions and building their capacities to take over the OMM

10.7 ROLES AND RESPONSIBILITIES OF WUA

Broadly, the following are the responsibilities to be shouldered by WUA.

- Prepare a Scheme Development & Management Plan (SDMP) jointly with other key actors;
- Supervise and actively participate the SDMP implementation.
- Fix up water rates and collection of water charges from its members as per the rates decided by WUA;
- Operate and maintain the system by fixing and collecting user charges. This will include: (i) arranging for diesel; (ii) repair and replacements; (iii) cleaning of field channels; (iv) oversee and ensure efficient distribution of water; (v) prepare agriculture/ fisheries plans; (vi) maintain book of accounts; and (vii) conflict resolution.

10.8 FOR WUA TO FULFILL THE ABOVE OBLIGATIONS, DEPARTMENT AND GPS ARE ALSO REQUIRED TO PERFORM A SET OF FUNCTIONS. THE DEPARTMENT SHALL BE RESPONSIBLE FOR THE FOLLOWING

- Arrange for finances, resources, technical support \ supervision and training to WUA to carry out OMM of handed over MI Schemes;
- Provide the above inputs to WUA to carry out all WUA functions and activities.
- Ensure quality of civil, mechanical and electrical works carried out under the project;
- Provide continued technical support, supervision and training to the WUA at least for 3 years subsequent to the handing over of the MI system to WUA.

10.9 ROLES & RESPONSIBILITIES OF PRADHAN OF GRAM PANCHAYAT (GP)

After receiving the land/ irrigation schedule from the engineers GP will identify the water users in the command area;

- GP will group the farmers according to the Spouts / Territorial Constituencies (TC);
- He/she will convene a general meeting with the farmers of the command area and constitute the following irrigation committees by election - (i) Spout Sub-Committee (SSC); (ii) Beneficiary committee (BC) and (iii) Executive Committee (EC) of beneficiary committee

10.10 PARA-WORKERS (PW)

To assist a WUA in performing its roles and responsibilities, each WUA will have a few para-workers linked to it. These para-workers will be educated persons from the WUA area identified by the respective WUAs and trained by the project to perform specific tasks. Normally, there will be 3 (three) para-workers with each WUA—one for institutional development, one for agriculture development and livelihood promotion and one for water management. The para-workers will be paid a month honourium by the project through the WUA. The project will cover the full amount of the honourium of the para-workers for the first year and only a partial amount for the next year. The remaining amount will have to be borne by the WUA. From 3rd. year onwards, the para-workers will work on the basis of payment of service charge by the WUA or the member who utilize their services.

10.11 SUPPORT ORGANIZATIONS

External non-government organizations specialized in community development shall be deployed to provide community mobilization support to WUA and PWs as well as build their capacity. TOR has been drafted for this purpose. Support Organizations would provide support at the village level for community mobilization, livelihood promotion; facilitation of linkage between community with various government departments, financial institutions and market; etc.

- 10.12** In order to establish an accountable and transparent mechanism, greater emphasis has been given to establish an MLE system that provides timely and necessary information for achieving the same. Therefore, from the very beginning the project would like to set clear deliverables for which process has been started to establish baseline status and set up output/process, outcome and impact indicators so that the progress against the same can be measured from time to time. This would help to not only set right the accountability

mechanism but also provide platform for maintaining transparency within and outside the project with regard to achievement of necessary project outputs. Through establishment of an effective MLE system, the project would also like to assess utilization of funds vis-à-vis quality of activities undertaken under the project and set right the same if there are any deviances. Keeping in mind the importance of establishment of MLE system, the project therefore has placed the provision of MLE expert at state level and district level project operation.

10.13 CONVERGENCE

Specific emphasis has been laid in this project to achieve inter departmental coordination so that an integrated development approach can be adopted under the project by effective channelization and dovetail of funds and resources for promotion of MI based livelihoods.

- ③ Setting up of District Project Unit who in liaison with ZP and the district administration can actually take up initiatives to bring all the departments in one platform and dovetail / channelize resources for the benefit of common mass under the MI system.
- ③ Formally enlisting the Agriculture Department support for agriculture development.
- ③ Formally enlisting the support of fishery department in formation of Primary Fishery Cooperative Society and channelizing infrastructural and resource support from the department for profitable pisciculture activity under a MI system.
- ③ Taking support of SC&ST development department for specifically benefiting these vulnerable groups by linking them under various programs implemented under the department
- ③ Taking support of Panchayati Raj department for effective engagement of PRIs especially in terms of mobilizing community, developing community level micro-plans, identification of beneficiaries, monitoring and supervision, etc.
- ③ Taking support of Agriculture departments for establishment of extension counters, crop diversification, foreshore cultivation, transfer of technical know-how to farmers, etc.
- ③ Similar plans have been also developed to channelize support from Veterinary, Horticulture, Forest and Soil Conservation departments.

10.14 CAPACITY BUILDING AND CAPACITY SUPPORT

For effective execution of project deliverables, the project has to take-up the following capacity building measures at the community level:

- ③ Understanding to take up micro level planning
- ③ Capacity to assess own problems and priorities
- ③ Capacity to form water users' institution
- ③ Knowledge and skills to manage water users' institution
- ③ Technical skill to take-up MI operation and maintenance work
- ③ Skills to mobilize community for generation of community contribution
- ③ Knowledge and skills to take-up various MI based livelihood options
- ③ Negotiation skills for resolving inter and intra stakeholder conflicts and personal differences
- ③ Advocacy skills to demand for services

10.15 RISKS

Major risks and assumptions in the project. Project's access to some of the insurgent areas may be quite difficult. This may impede the progress at times resulting in delays.

XI. PILOT STUDY

11.1 PROJECT INCEPTION ACTIVITIES

The activities of the project started with the focus group discussion with the WRDD officials. It was further accelerated with conduction of two focus group discussion at two different villages at Barasat I in presence of IBRAD's representatives, WRDD officials, and the water committee members and one day training programme with the Government officials.

11.1.1 Meeting on Situation Analysis at the Office of the Water Resource Development Directorate

Date:	30 th January 2009
Time:	12 noon
Place:	Office of the Executive Engineer (Agri-Mech), Barasat (Agri-Mech) Division Administrative building, Water Resources Development Directorate (WRDD) Barasat, Kolkata-700124
Meeting Proceedings	The meeting was organized at WRDD office regarding situation analysis through Focus Group Discussion with the WRDD to assess the baseline condition and finalize the pilot site.

11.1.2 Brief of the Discussion

The WRDD officials presented current status of the total numbers of existing RLI, and DTWs at Barasat I. According to their shared information the number of working DTW currently in Barasat I is 21. The officials also presented their departmental hierarchy and number of staff. They explained abundant human resources of the area as their strength. They expressed that the dual administration of operation and management unit is one of the weaknesses of the entire system. They considered that while the available natural resources can create an opportunity for further work, the rapid urbanization form a real threat.

11.1.3 Outcome of the discussion:

A brief analysis of the current scenario was carried out in the meeting. The pilot sites for the project were finalized on that day and FGD documentation was prepared.

11.2 OVERVIEW OF FOCUS GROUP DISCUSSION WITH THE VILLAGERS AT BURRHO, BARASAT I

The village 'Borrhoh' is situated at Kadambagachi Gram Panchayat in Barasat Block1, district 24th Parganas North, West Bengal. The entire agricultural field in the village is fed by the Deep Tube Well Irrigation (DTW) system. The name of the DTW system is Sarebarya. The village population is dominated mainly by Muslim. Approximately 40 ha of land was determined as command area for cultivation during early 60's. Meanwhile a cotton mill was established by the Aditya Birla Group in 1966, which resulted in 70% decrease in cultivated land area and now only 12 ha of land is under cultivation. But still the major occupation of the villagers is agriculture. The village consists of two localities namely,

Bara-Dakshin Para and Biswas Para. There are 135 households in Bara-Dakshin Para, while, Biswas Para contains only 30 households. The major agro-production of the village is Boro Paddy (Winter Paddy) which occupies 5-6 ha of land and the remaining land is cultivated for some seasonal vegetables such as cabbage (*Brassica oleracea*), cauliflower (*Brassica campestris*), potato (*Solanum tuberosum*), tomato (*Lycopersicon esculantum*) etc. Approximately 40 people are involved with Boro cultivation. The maximum land per capita is about 0.4 ha and the minimum land is about 0.15 ha for the landholders who utilize their lands for cultivations.

11.2.1 Date and Place of the Group Discussion with villagers at Borrho, Barasat I

Date: 2nd February, 2009
Time: 12.30 pm
Place: Deep Tube Well- Sarebarya
 Village- Borrho
 Gram Panchayat- Kadambaghachi
 Block- Barasat 1
 District- 24th Parganas North

A focus group discussion was organized with water committee members in presence of the officials of WRDD department at Burrho village to know the current status of the water committee and the current water cultivation status as well.

11.2.2 Observation

There is a five member Water Committee, which is formed by the villagers to sustain the system of DTW irrigation. The members of this committee are as follows:

- Manirul Islam
- Mehendi
- Muffajal
- Lal Mohammad
- Abdul Malik

Out of 5 members in the committee 3 members are from the same family. The president of the committee is Manirul Islam. The committee has hired a water man (pump operator) for regulating the water supply system for irrigation. The farmers give a nominal subscription of Rs. 10/- per month per household for meeting the expenditure of the waterman and others of the committee. It has been estimated from the survey that the approximate expenditure is Rs. 816/- per acre per month for watering in the field. The villagers are exclusively taking care of their irrigation system and monitoring the same frequently. During repairing of the system and channels, officials play a major role. Villagers also work on daily wages. Often the villagers also share the cost of repairing and cleaning of the channels.

The villagers feel very proud about of the DTW system. They suggest for releasing more sub-channels mainly from 4 numbered channels which is effective for more than 30 acre of land.

It appeared from the discussion with the villagers that they are not satisfied with the moisture conservation status of the soil. They require more water for cultivation. Majority of the villagers are interested for undergoing trainings for facilitating their irrigation and cultivation system. They have estimated that the current cost of the cultivation ranges from Rs. 4500/- to Rs. 5000/- per bigha per season but the market cost of the production is not rising satisfactorily. This is a major difficulty for the farmers of this village. Therefore, they are seriously worried regarding this issue.

11.2.3 Brief of the Discussion:

The following topics were highlighted in the discussion

- Current cultivation status
- Status of water committee
- Status of soil
- Status of deep tube well irrigation
- Cost of cultivation
- Time table for cultivation of crops
- Development of the irrigation system
- Interest for taking training programme

11.2.4 Conclusion of the meeting:

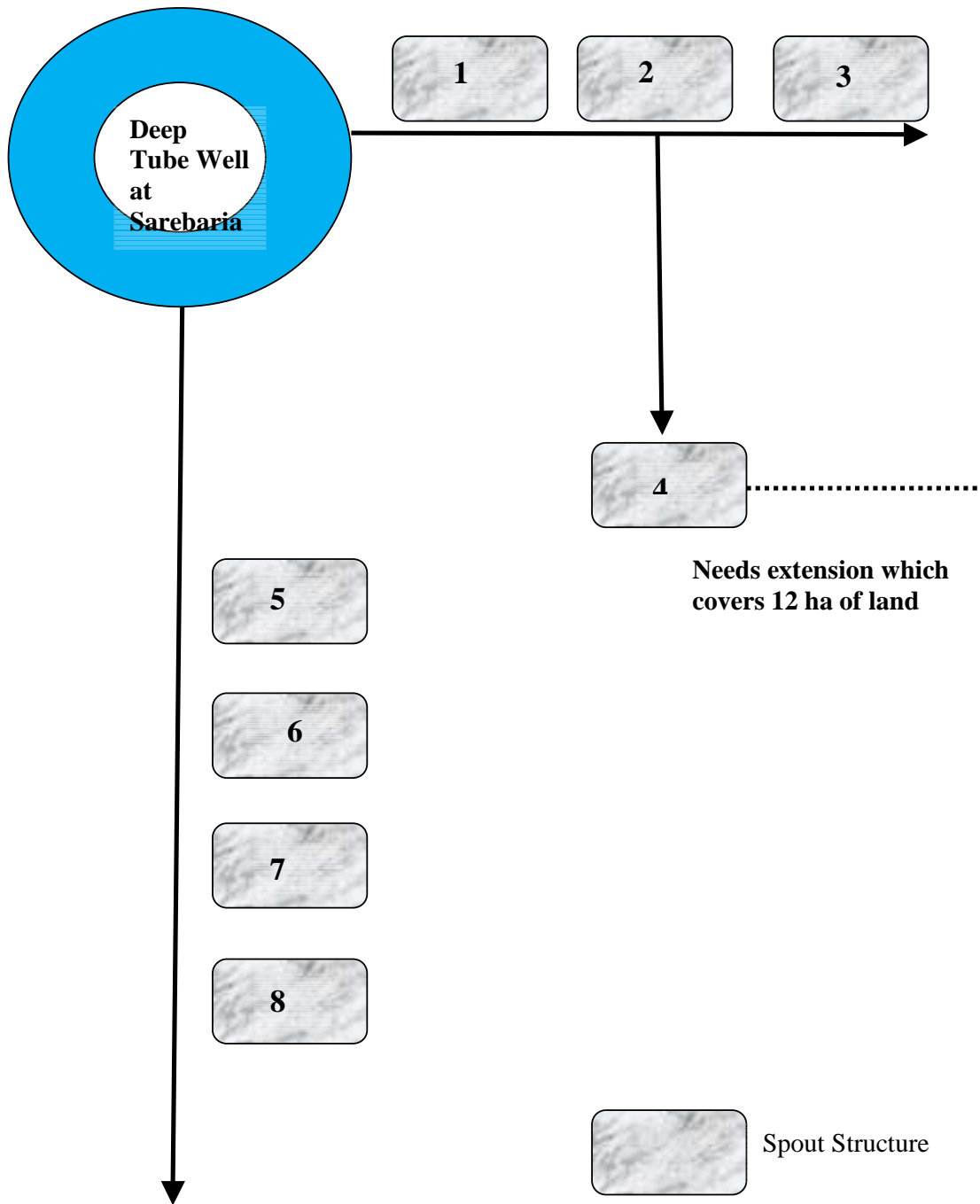
Most of the villagers had shown their interest in attending training programme for the sake of improvement of their skills. The analysis of the current circumstances made the situation transparent to the participants.

Fig 1: Focus Group Discussion at Borrho Village



Fig 2: Deep Tube Well Irrigation System (Sarebarya)





Schematic Presentation of Sarebaria Deep Tube Well Irrigation System in Borrho Village

11.3 OVERVIEW OF FOCUS GROUP DISCUSSION WITH THE VILLAGERS AT KAPASIYA, BARASAT I

The village Kapasiya is situated at Ahira Nilguange Gram Panchayat in Barasat Block1, 24th Parganas North. The irrigation system of the village is based on River Lift Irrigation (RLI) from near Noyai canal. The RLI system is in vogue since late 60's. Earlier it was operated by diesel and since 1975 the system is operated by electricity.

Total 300 households are there in the village. Approximately 250 households are Muslim by caste while 50 household are Hindu. Approximately, 28 ha of land is determined as command area for cultivation. This area is occupied by 150 landowners.

The cultivation of the village are Borro Paddy (Winter Paddy) which is cultivated in 15 ha of land, mustard (*Brassica juncea*), Cabbage (*Brassica oleracea*), Cauliflower (*Brassica campestris*), Potato (*Solanum tuberosum*), Maize (*Zea mays*), Turnip (*Brassica oleracea* var. *Capitata*), Papaya (*Carica papaya*), etc.

11.3.1 Date and Place of the Group Discussion with villagers at Kapasiya, Barasat I

Date: 3rd February, 2009
Time: 3.30 pm
Place: River Lift Irrigation - Noai Khal
Village- Kapasiya
Gram Panchayat- Ahira Nilguange
Block- Barasat 1
District- 24th Parganas North

Another Focus group discussion was organized by IBRAD at Kapasiya Village to know the current status of the water committee and the current water utilization status.

11.3.2 Observation

There is a water committee composed of villagers to organize the system of RLI irrigation sustainably. There are 9 members in this committee. The list of the members in this committee is as follows:

- Saheed
- Sirujal Haquek
- Jiaul Rahaman
- Ensar ali
- Resaul
- Dinaj Mohammad
- Luthfar Rahaman
- Siraj
- Jakir

The members of the committee conduct regular meetings with definite agenda and maintain minutes in the register. The president of the committee is Sirajul Haquek. The committee has hired a water man for regulating the watering system for irrigation. The villagers give a nominal subscription of Rs. 10/- per month per household of the farmers for meeting the expenditure of the waterman and others of the committee. It has been calculated that approximately Rs. 8.16/- is taken as the water tax per Satak. The villagers are very particular in taking care of the irrigation system, channels etc. Often they contribute for the repairing cost, cleaning cost etc. themselves. The villagers play the role of wage labourer during repairing of the irrigation channels or sub-channels.

The villagers are quite proud of the RLI system. They suggest for releasing more sub channels, repairing of the channels and drains, cleaning of the filtrations and for taking permanent water man for regulating the watering system for irrigation.

The members are continuously facing some difficulties, some times salinity of water posing some difficulties, getting subscription or contribution very irregularly etc. and are interested for receiving trainings for facilitating smooth running of their irrigation and cultivation system.

11.3.3 Discussion in meeting

The meeting was initiated with the current cultivation status and the status of water Committees as well. The water committee members gave an idea about status of soil and status of Deep Tube Well Irrigation. The water committee members estimated the cost of cultivation. The representatives of the WRDD discussed various ways of development of the irrigation system. The participants from the water committee had shown interest for taking training and to form a group.

11.3.4 Outcomes of the meeting

At the end of the meeting the current circumstances of the village and the water committee became clear. The participants themselves enlisted the names to form a group. The next date for the meeting was also fixed.



Fig 3: Focus Group Discussion at Kapasiya Village



Fig 4: River Lifting Irrigation System at Kapasiya Village

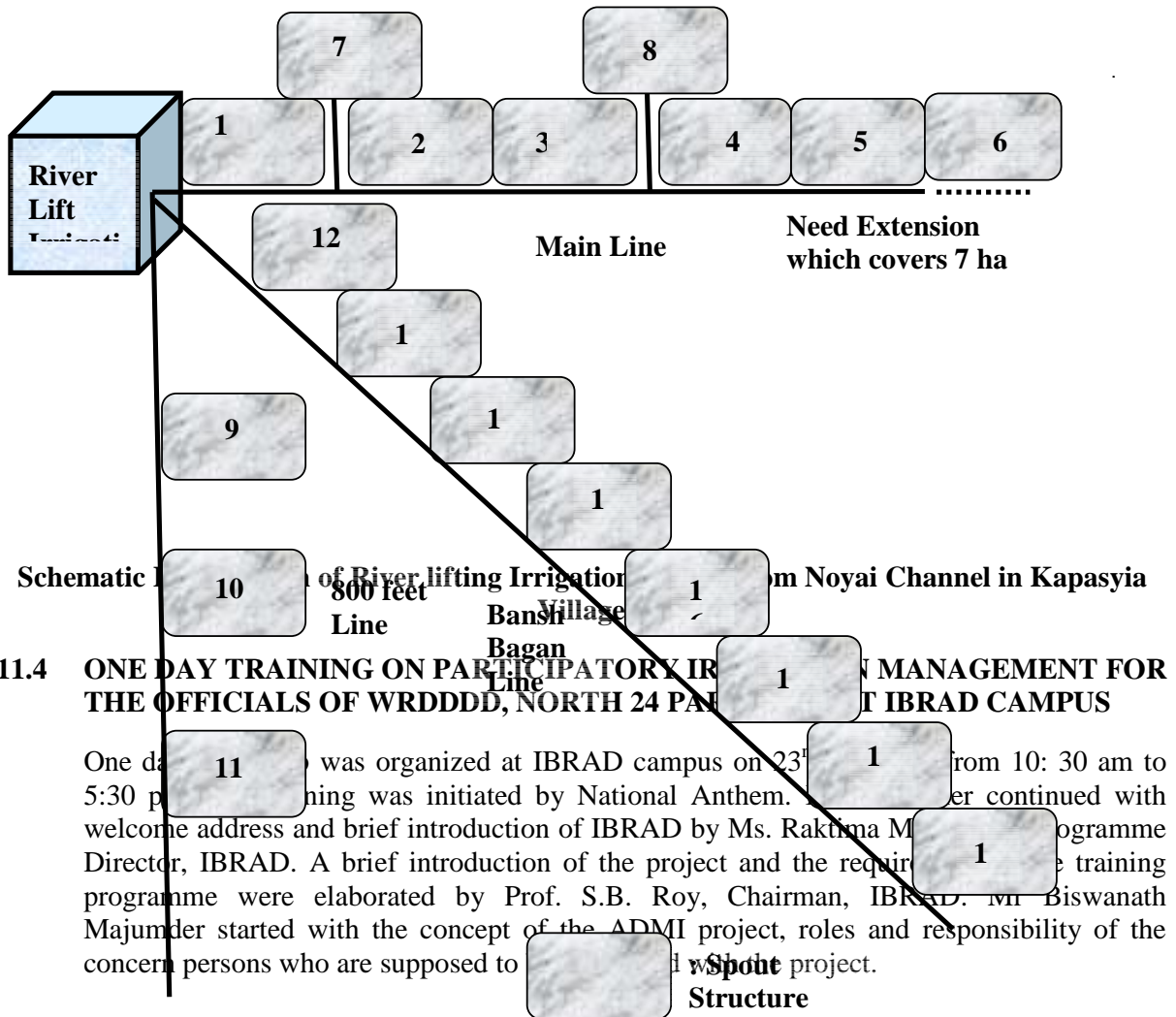


Fig 5: Address by Prof. S.B. Roy



After the tea break the first half of the training was started with the goal of the department and the constraints faced by the officials to achieve the goal.

The second half of the training was mainly focused on the Strength, Weakness, Opportunity and Threat of the irrigation department. The participants identified the following strength, weakness, opportunity and threats of the aforesaid department

11.4.1 Strength

- Young group of technical persons (Engineer/ O& M wing)
- User friendly behavior from the bottom to top level
- Scope of implementation of different new projects
- Natural resources

11.4.2 Weakness

- Dual administration of O & M unit
- Generation of new implementation policy and percolation to the field level properly
- Non review of different Government orders in the respect of the delegation of financial power
- Time consuming decision
- Lack of training opportunities
- Lack of technically sound equipment
- Lack of field level staff
- Level of participation

11.4.3 Opportunity:

- Rain water harvesting
- Career development for the technical staff
- To enhance the eco friendly technology
- To recharge the ground water
- Conjunctive use of ground water and surface water
- Micro irrigation
- Coordination between the BDO and the technical staff

11.4.4 Threats:

- Over withdrawal of ground water
- Leading to Arsenic and salinity
- Rapid urbanization
- Siltation need excavation
- Obstruction due to the encroachment of the outsiders

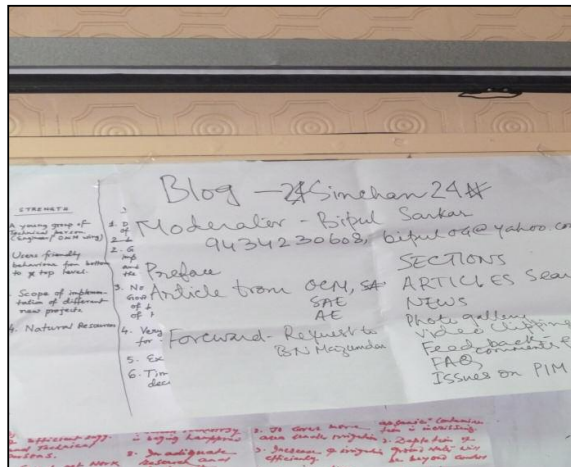
GroupWise SWOT Analysis is given in Table 11.1 in page no 14 to 16.

11.4.5 Formation of Blog: Sichuan 24

The participants and the resource persons decided to form a Blog as a plan of action of the training programme. The Blog will contain the following sections

- Articles
- New photo gallery
- Video clipping
- Feedback
- FAQ
- Issues of the PIM
- Photographs
- New initiative

Fig 6: Blog Sinchan 24



11.4.6 Evaluation

At the end of the training programme the participants were given an evaluation form. The questions mentioned in the evaluation form are given in page no 12.

Fig 7: Evaluation Report filling up by the participants



Q1. Which part of the workshop did you find most helpful?

Q2. Which part of the workshop did you find least helpful?

Q3. Did you learn any specific thing from this workshop? If yes please specify.

Q4. Kindly give your suggestion to make this kind of workshop more effective in future.

Most of the participants considered, transaction analysis, SWOT analysis, logistics, infrastructure of the IBRAD campus, the concept of Knowledge Attitude Practices, Interaction during Group discussion most helpful part of the training programme

Majority of the participants did not found any part of the training programme unnecessary.

The participants mentioned in the evaluation form that they have learnt how to manage the ego state, emotion in the training programme by the transaction analysis. They have also learned the effective micro irrigation management.

The officials suggested that in future the agenda of such kind of training workshop can be informed to its participants earlier. They also suggested including aspects of water resource as valuable topic. The participants also feel the need of the video clipping, and printed literature to make the training programme more fruitful. The participants want to participate in this kind of training work shop in future.

11.4.7 Way forward

- ☞ Identification of village volunteers (SICO) from the command area of the selected RLI/DTW
- ☞ Formation of SICO groups, initiation of SHG
- ☞ Training for OCMs
- ☞ Training of the SICO members on Institution building, conflict management
- ☞ Identification of the weaker section and vulnerable groups and their inclusion with the groups.

Fig 8: Participants involved in SWOT analysis



Fig 9: Participants presenting SWOT analysis



Table 11.1
Group wise SWOT Analysis

Group number	Name of the group member	Strength	Weakness	Opportunity	Threat
Group 1	1. Mr. Biraj Roy, 2. Mr. Jayanta Sankar Chakraborty, 3. Mr. Santi Kumar Ghosh, SAE 4. Mr. Asit Boran Chattopadhyay, 5. Mr. Satabroto Dev, SAE	1. Technically sound human resource 2. Cooperative in nature 3. Grass root contact for helpful development for our social behavior 4. Honesty and responsibility.	1. Resources 2. Technical instrument are not sufficient 3. Youth	1. Different type of project already taken 2. Traditional beneficiaries 3. Consumptive use of ground water and surface water 4. Control of water supply by micro irrigation to avoid losses of water	1. Salinity 2. Siltation 3. Obstruction 4. Water resources are not available in dry season
Group 2	1. Mr. Bipul Sarkar 2. Mr. Sajal Kundu 3. Mr. Anirudhha Sanyal 4. Ms. Anindita Mandal 5. Mr. Kasinath Mandal	1. Availability of sufficient fund 2. Technical know how of staff in connection with related work 3. Sharing of knowledge between young, energetic and experience staff 4. Possibility of ground water recharge and rain water harvesting	1. Communication gap between Government and local bodies and inter Government bodies i.e. WBSEDC Ltd 2. L.O.C is not available through out the year 3. Political interference 4. Shortage of electricity.	1. Plenty of fertile land 2. Road communication 3. Availability of market 4. MI excavation for storage of water and its use for irrigation in the saline zone	1. Depletion of ground water level 2. Rapid urbanization 3. Rapid population growth 4. Arsenic and salinity problem

Group number	Name of the group member	Strength	Weakness	Opportunity	Threat
Group 3	<ol style="list-style-type: none"> 1. Mr. Himansu Sekhar Majumder 2. Mr. Surajit Biswas 3. Miss Rumpa Ghosh 4. Mr. Aman Mandal 5. Mr. Swapan Kumar Guria 	<ol style="list-style-type: none"> 1. Mixing of young and matured staff 2. Office is situated in such a place that we can monitor the scheme properly 	<ol style="list-style-type: none"> 1. Lack of communication between farmers and office staff about the nature of cultivation 	<ol style="list-style-type: none"> 1. We can make surface water scheme where Arsenic and salinity problem is there. 1. Non functional scheme can be rejuvenated by changing the mode of operation. 	<ol style="list-style-type: none"> 1. Over drawl of ground water results in lowering of water level, so drought situation will come near future and concentration of Arsenic and fluoride increase in ground water
Group 4	<ol style="list-style-type: none"> 1. Mr. Shantanu Das 2. Mr. Avijit Dasgupta 3. Mr. Nikhil Chandra Das 4. Mr. Tapan Kumar Bhowmik 5. Mr. Ajay Pandit 6. Mr. Utpal Roy 7. Mr. Maloy Banerjee 	<ol style="list-style-type: none"> 1. Optimum utilization of natural underground resources to create irrigation potential 	<ol style="list-style-type: none"> 1. Lack of diversification in the scope of work 2. Lack of knowledge and interest in participatory irrigation management concept 	<ol style="list-style-type: none"> 1. Rain water harvesting 2. Recharging of ground water 	<ol style="list-style-type: none"> 1. Over exploitation of ground water and depletion of ground water table
Group 5	<ol style="list-style-type: none"> 1. Mr. Shyamal Kumar Das, EE (A-I) 2. Mr. Goutam Biswas, EE (A- M) 	<ol style="list-style-type: none"> 1. A young group of technical persons (Engineer/ O&M unit) 2. User friendly behavior from top to bottom level 	<ol style="list-style-type: none"> 1. Dual administration of O & M unit. 2. Generation of new implementation policy and 	<ol style="list-style-type: none"> 1. Scope of proper use of water resources development activities 2. Proper use of huge 	<ol style="list-style-type: none"> 1. Collapse of total WRDD works due to dual administration 2. Scope of interference of different groups
Group 5		<ol style="list-style-type: none"> 3. Scope of implementation of different new project 4. Natural resources 	<ol style="list-style-type: none"> percolation to field level properly 3. Non review of different Government orders in respect of 	<ol style="list-style-type: none"> quantity of technical personnel 3. Good centralized procurement policy 	<ol style="list-style-type: none"> 3. Not connected in anyway with the project.

Group number	Name of the group member	Strength	Weakness	Opportunity	Threat
			delegation of financial power 4. Very short period for field execution 5. Experimental activities 6. The time consuming decision		
Group 6	1. Mr. Siddhartha Ray 2. Mr. Chanchal Bose 3. Mr. Pradip Kr Dasgupta 4. Mr. Ajoy Chancasati 5. .Mr. Malay Chancasati	1. WRDD consists of good numbers of efficient Engineer and Technical persons 2. Good network offices through out the state 3. Due to nature of our work we are acquainted with farmers directly.	1. Insufficient training opportunity on different discipline 2. Adaptation of modern technology is being hampered 3. Inadequate research and development activities with the Department	1. Unirrigated land in state is still large 2. To cover more areas under irrigation 3. Increase of irrigation efficiency 4. Conjunctive use of surface and ground water 5. Scope of use of micro irrigation system specially drip and sprinkler is wide	1. Use of under ground water is rising day to day thus scarcity of ground water , increase of salinity and arsenic contamination is increasing 2. Depletion of ground water will be beyond control 3. Ignoring sustainability will be detrimental.

Table – 4.20
Salient Features of the State of West Bengal

Demography			
Population		1991	2001
	Total	68077965	80176197
	Male	35510633	41465985
	Female	32567332	38710212
% Share in Country's Population		8.12	7.79
% share of Urban Population (India)		27.48 (25.73)	27.97 (27.82)
% share of Rural Population (India)		72.52 (74.27)	72.03 (72.18)
% share of major religious communities (India)	Hindus	74.72 (82.00)	72.47 (80.46)
	Muslims	23.61 (12.12)	25.25 (13.43)
% share of SC (India)		23.62 (16.48)	23.02 (16.2)
% share of ST (India)		5.59 (8.08)	5.50 (8.2)
% share of Children (0-6)		16.98 (17.94)	14.24 (15.93)
Sex Ratio (India)	All	917 (927)	934 (933)
	SC	931 (922)	949 (936)
	ST	964 (972)	982 (978)
	Children of (0-6)	967 (945)	960 (927)
Population Density (per Sq. Km) (India)		767 (274)	903 (324)
Decadal Growth rate (%) (India)		24.73 (23.85)	17.77 (21.34)

Enclaved Household (%) (01.04.05)	24.34
Av. Population per Bank Offices (RBI-2005)	19000

Employment			
		2001	
		Male	Female
Work participation rate (India)	Rural	54.1 (52.11)	20.9 (30.79)
	Urban	53.7 (50.60)	11.6 (11.88)
% of main worker (India)	Rural	45.8 (44.51)	9.1 (16.77)
	Urban	50.2 (47.46)	9.2 (9.12)
% of marginal worker (India)	Rural	8.3 (7.85)	11.8 (14.21)
	Urban	3.6 (3.38)	2.4 (2.43)
% of agricultural labourers		22.7 (20.82)	32.2 (39.43)
No. of registration during the year through employment exch.(2004)	353944		
No. of Placements effected during 2004	11530		

Others		
Per Capita Income(2003-2004) at current prices (in Rs)	20895.64	
% of cultivable area to total area('04-'05)	65.48	
Cultivable area per agri worker('04-'05) (hectres)	0.44	
% of forest area('04-'05)	13.52	
% of BPL families(P&RD,2002)	36.38	
% of Population below poverty (1999-2000) (NSS) (India)	Total	27.02 (26.10)
	Rural	31.85 (27.09)
	Urban	14.86 (23.62)
No of Dowry Deaths	2003	313
	2004	386
% change in Dowry Deaths	2002-2003	16.36
	2003-2004	22.32

		Education		
			1991	2001
Literacy Rate (%) (India)	All	Total	57.70 (52.21)	68.64 (64.8)
		Male	67.81 (64.13)	77.20 (75.3)
		Female	46.56 (39.29)	59.61 (53.7)
		Rural	50.50 (44.69)	63.42 (58.7)
		Urban	75.27 (73.08)	81.25 (79.9)
	SC	Total	42.21 (37.41)	59.04 (54.7)
		Male	54.55 (49.91)	70.54 (66.6)
		Female	28.87 (23.76)	46.90 (41.9)
	ST	Total	27.78 (29.60)	43.40 (47.1)
		Male	40.07 (40.65)	57.38 (59.2)
		Female	14.98 (18.19)	29.15 (34.8)
	Gender Gap in Literacy			21.25 (24.84)
			Primary	Upper Primary
No of Schools-SSA-2006			50255 (Govt.)	11440 (Govt / Govt aided)
Pupil - Teacher Ratio(Govt)-SSA-'06			45.20	61.41
Net Enrolment Ratio(overall)SSA'06			98.03	78.74
Drop Out Rate(Cohort study SSA 2004)			19.92	29.70

Health		
Infant Mortality Rate (India)	2003	46 (60)
	2004	40 (58)
	2005	38 (58)
Under five Mortality Rate (India)	1998-1999	67.6 (94.9)
Maternal Mortality Rate (India)	1998	266 (407)
Birth Rate (SRS)	2003	20.3 (24.8)
Death Rate (SRS)	2003	6.6 (8.0)
Life Expectancy(2001)	Male	65
	Female	69
Mean age at Marriage (IIPS)	Male	24.7 (24.5)
	Female	18.5 (19.5)
Beds per lakhs population(2003)	86	

Sources : Publications of 2001 Population Census , Power Dept, B.A.E.& S., Econ. Review(WB),Health on the March.

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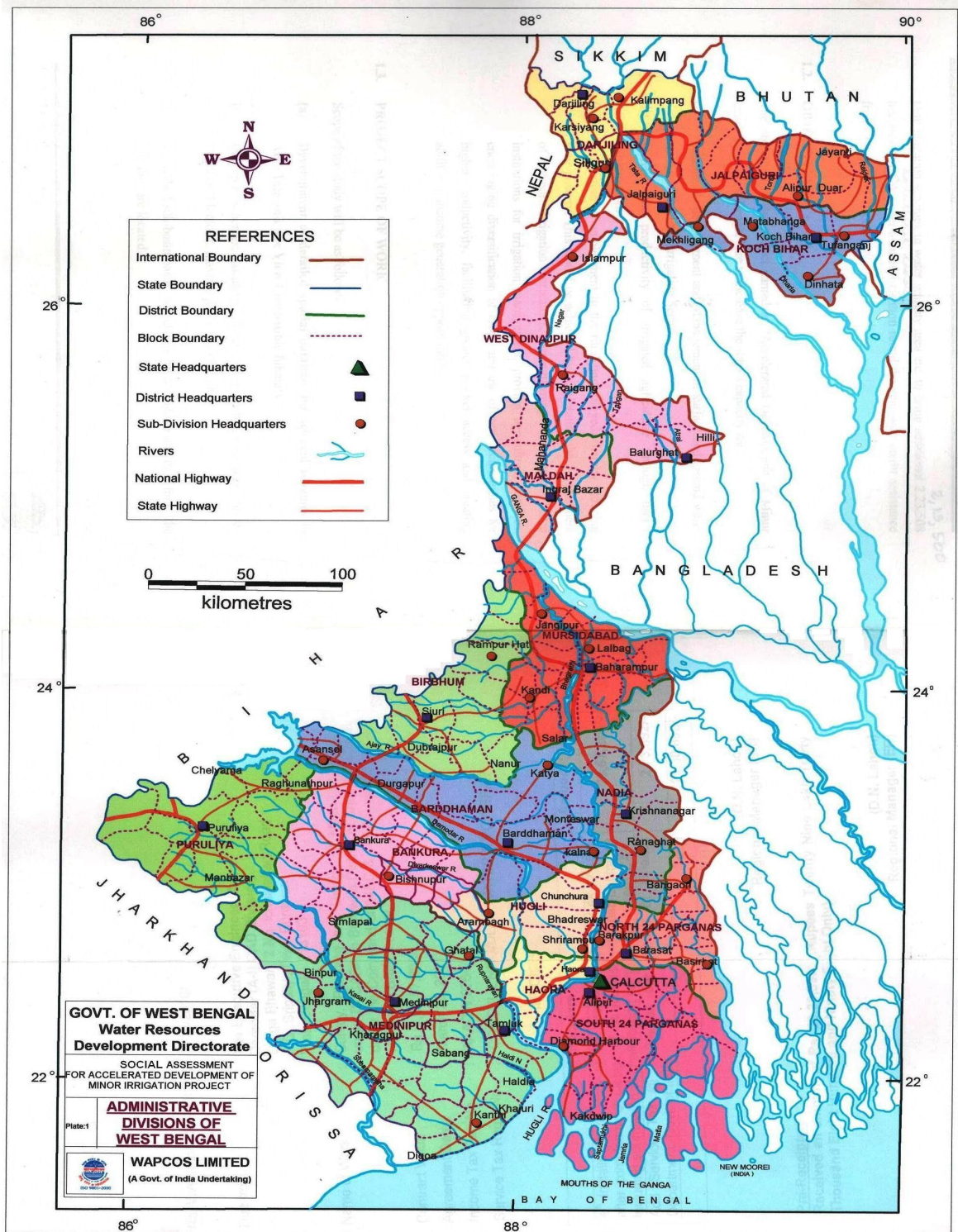


Plate-1

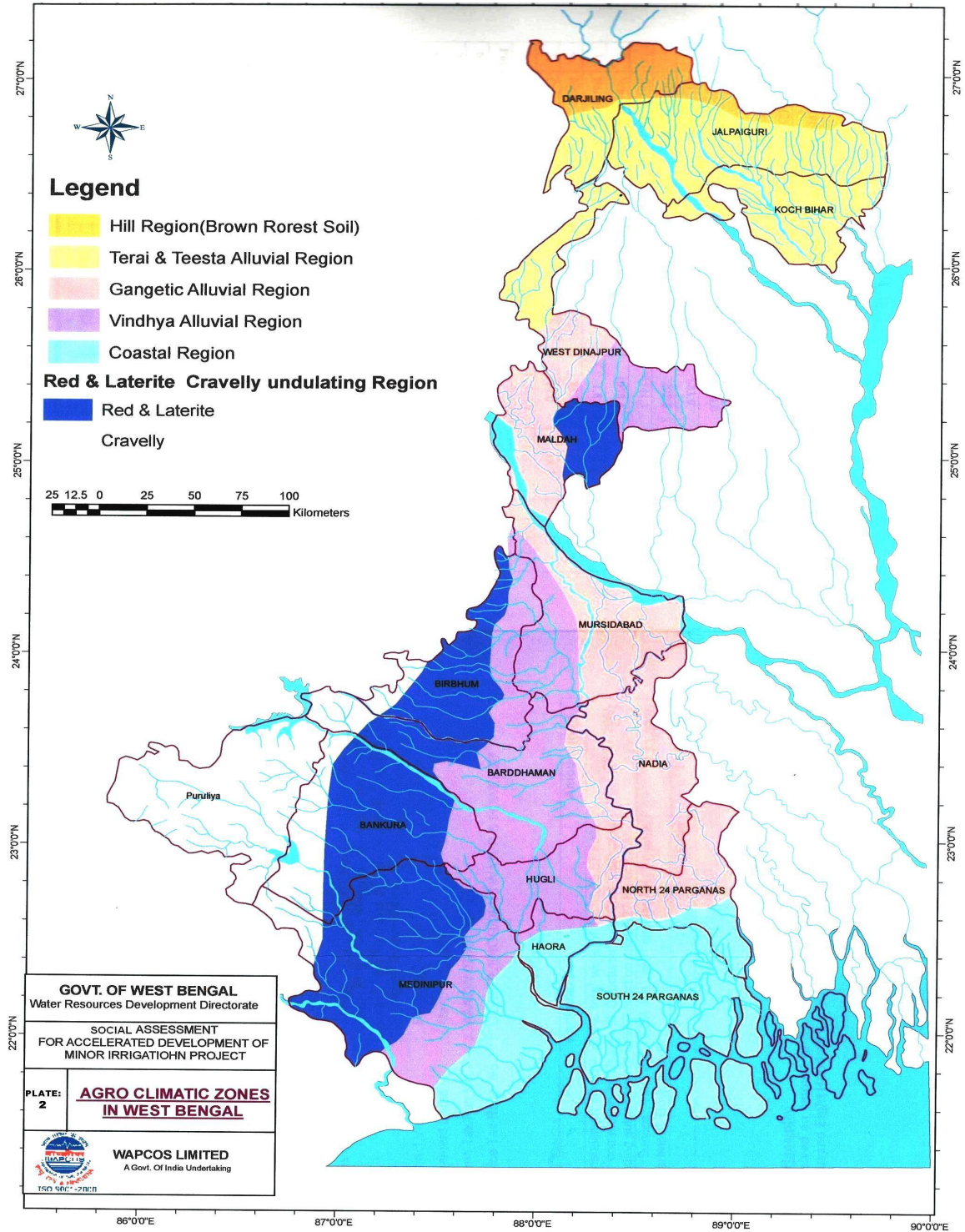


Plate-2

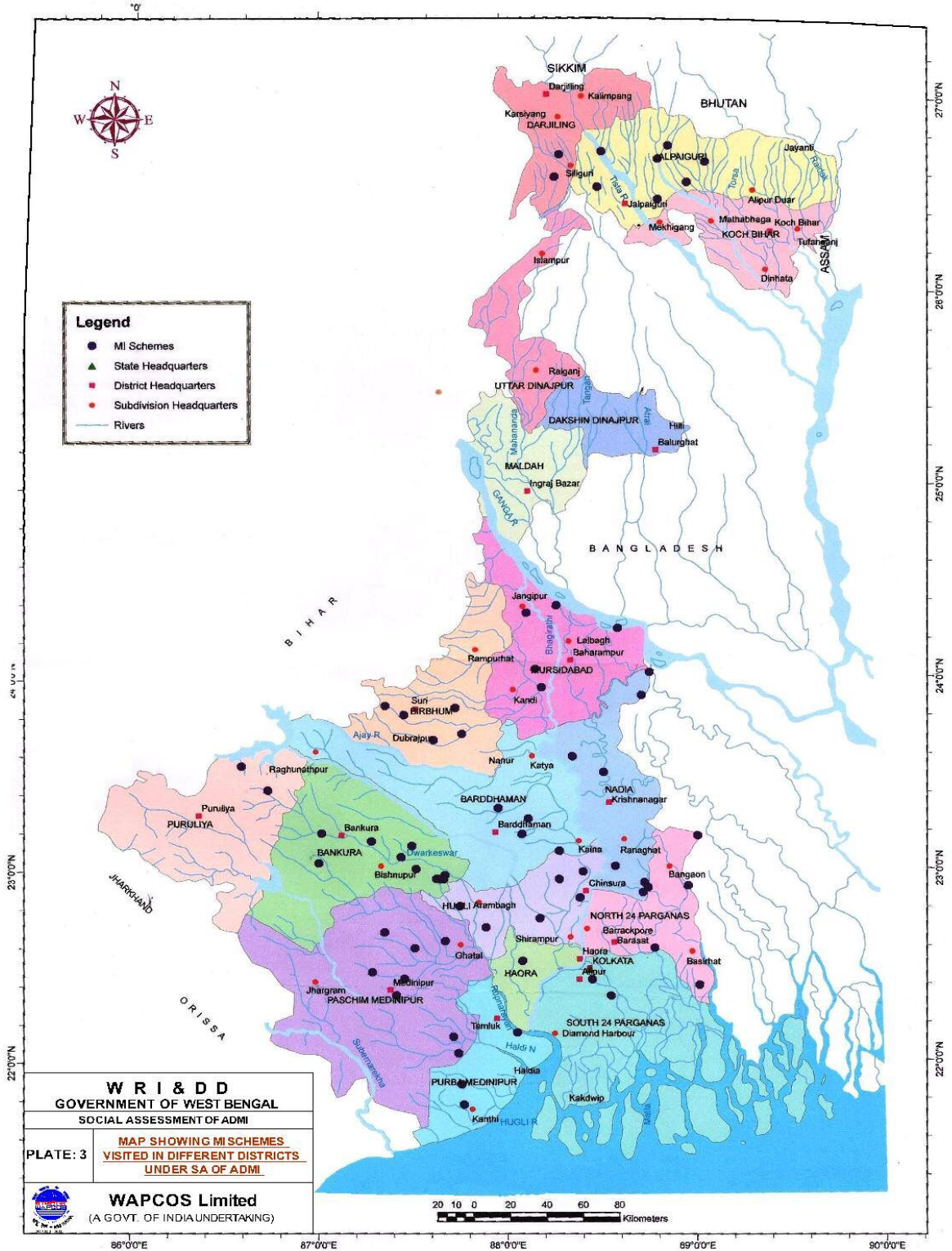


Plate-3

Social Assessment of WBADMI Project
Final Report
