CONTENTS (IWMP I)

CHAPTER- 1

METHODOLOGY

INTRODUCTION

The Government of India (GOI) adopted watershed management as a strategy to address the sustainable agricultural productivity in the rainfed areas since the last three decades. Further, GOI has adopted watershed management as a national policy since 2003. Several studies have highlighted that appropriate natural resource management and its utilization results in enhancement agricultural productivity. In order to achieve food security, minimize the water conflicts and reduce poverty, it has become essential to increase productivity of rain fed / dry land farming by utilization of available natural resources.

In Haryana, watershed activities were undertaken by Department of Agriculture (Soil Conservation), Forest Department and Rural Development Department. The existing scheme of watershed, like DPAP, DDP, Haryali & IWDP were brought under one umbrella in the name of Integrated Watershed Management Programme in the year 2008. The scheme is basically for rainfed area. Common Guidelines were framed by National Rainfed Area Authority. Rural Development Department is the Nodal Department for implementation of IWMP through State Level Nodal Agency.

To implement watershed (IWMP I) area programme a systematic survey has been conducted to know the potentiality of each village / Micro-Watershed. With this view, a baseline survey was conducted in thirteen micro- watershedsBedwa (Part) [6D1F1x4], Bhaini Chanderpal(part) [6D1F1s3], Bhaini Maharajpur (part) [6D1F1s4], Farmana Khas(part) [6D1F1y2], Farmana Badshahpur (part) [6d1f1y3], Bhaini Surjan A (part) [6D1F1s7], Bhaini Surjan B (Part) [6D1F1s7], Madina Gindhran (Part) [2C5F8j7], Bainsi A (part) [6D1F1t8], Bainsi B (part) [6D1F1t8], Girawar (Part) [2C5F8j2], Guga

Heri [6D1F1t9] and Kishangarh [6D1F1h8]. The base line survey conducted shall be considered as bench mark against which the results of project could be compared at the end of the implementation. It would also be helpful in guiding watershed programmes and to plan its goal in identifiable terms and be used as future reference. PRA techniques and transect walk were conducted with the Gram Sabha members and beneficiaries for building confidence in participation during project planning.

1.1 SCIENTIFIC PLANNING

1.1.1 Cluster Approach

This envisages a broader vision of Geo-hydrological unit which involves treating the cluster (IWMP I) of 13 micro watersheds namelyBedwa (Part) [6D1F1x4], Bhaini Chanderpal(part) [6D1F1s3], Bhaini Maharajpur (part) [6D1F1s4], Farmana Khas(part) [6D1F1y2], Farmana Badshahpur (part) [6d1f1y3], Bhaini Surjan A (part) [6D1F1s7], Bhaini Surjan B (Part) [6D1F1s7], Madina Gindhran (Part) [2C5F8j7], Bainsi A (part) [6D1F1t8], Bainsi B (part) [6D1F1t8], Girawar (Part) [2C5F8j2], Guga Heri [6D1F1t9] and Kishangarh [6D1F1h8] with their respective codes.

1.1.2 Base Line Survey

Bench mark survey was conducted for collection of base line data on various bio-physical and socio-economic aspects initiated by the following methods:-

1.1.3 Collection of Primary Data

The project was sanctioned in 30th Steering committee meeting for IWMP on 30.01.2013 and the preparatory phase started in 2013. Initially, a meeting was arranged with officials of concerned departments and technical experts located at Bedwa, Bhaini Chanderpal, Bhaini Maharajpur, Farmana Khas, Farmana Badshahpur, Bhaini Surjan A, Bhaini Surjan B,

Madina Gindhran, Bainsi A, Bainsi B, Girawar, Guga Heri and Kishangarhmicro- watersheds. During this meeting, preliminary details of the proposed project including location of villages and criteria of selection and PPR were discussed.

In order to have first hand information, a joint visit in the project area was made along with PRI members. In this survey, physical location of the watershed, drainage pattern, slope, land use and other problems related to the area were assessed. Sarpanches and local people were involved in the discussions and needs and scope of watershed works were taken up.

The survey of India toposheets (Survey of India) of the area available on the 1:50000 scales were procured of the project area and all assigned villages were marked on the copies of the toposheets (Survey of India) as well as on the maps prepared by Soil and Land Use Survey of India (SLUSI).

The primary data was also compiled from revenue records, Anganwari workers and statistical officers of the district. Rainfall data was collected from the Ground Water Cell to maintain the record of rainfall from rain gauge station located in the Sub division/district headquarter of the project area.

1.1.4 Collection of Secondary data

The data with regard to Demographic, socio-economic, infrastructure, land use, primary and secondary occupation, major crops grown and the production of crops and seasonal vegetable, marketing facilities, fodder production, agro-forestry crops, livestock and milk production, status of self help groups, previous watershed schemes and works undertaken under MGNREGA etc. was gathered with the help of a designed Performa. Additional information was gathered by group and individual discussions with women groups, landless and other poor sections of the society. The issues concerning water availability, use of common property resources, fuel and fodder availability, wage employment opportunity and other major concerns were discussed, debated and recorded.

1.2 PARTICIPATORY RURAL APPRAISAL

The due process of Participatory Rural Appraisal was followed in which village committees were sensitized about project activities. An appraisal of land resources, water resources, forest and pasture land resources, common property resources, production system and livestock resources was carried out by collecting data from primary and secondary sources. Group meeting were organized at common places and problem and possible solution were debated, discussed and efforts were made to reach agreement on activities required under the projects. This was followed by transect walks across the entire area of the village and spots indicated by the community. The Technical possibilities were discussed and measurements were recorded for jointly agreed activities. Similarly, discussions were held on proposedentry point activities and techno-feasible works were finalized keeping in view the availability of funds in the project. Feasible proposals on production activities and techniques to improve crop, fruit and milk production were held. The women groups were sensitized about income generating activities and skill improvement by various types of trainings. The field staff facilitated the process of participation at the planning stage. The roles and responsibilities of all stake holders as per guidelines , the mechanism of fund flows, cost sharing arrangement in different components and operational mechanism of the projects was thoroughly discussed with the community and Watershed Committees (WC).

1.2.1Participatory Net Planning

The action plan was formulated based on the PRA, Geo-hydrological condition, Drainage pattern, Soil class, Soil erosion, forest and agriculture land. The project proposals were deliberated in the Gram Sabha meetings which were approved with required amendments.

Based on the experience of the experts working in the area and catchment area characteristics each structures like the Renovation and digging of percolation pond, Drainage measures, land development works, retaining wall, ramp and inlet

of pond, water conveyance system, culverts, plantation, land leveling, bunding etc. were recommended to conserve and store water used for life saving irrigation potential in the rain fed area and to avoid further degradation of the land.

1.2.2 Community Participants in Social Mapping

The village communities were apprised about project activities. Group meetings were organized at common places, problems and possible solutions were debated, discussed and efforts were made to reach agreement on activities required under the project. Social mapping involving local community was prepared. Infrastructure services and other village resources such as ponds, agriculture land etc. were mapped.

1.2.3 Transect Walk

Reconnaissance survey was carried out through transect walk in order to identify the needs, treatments required and worksites. The sites were marked on the maps and different treatment measures required were recommended.

1.2.4 Focus Group Discussions

Focus Group Discussions (FGD) were conducted in order to obtain communities' approval on various identified needs. It was helpful in complementing the assessment emerged from PRA and to derive the opinion of the communities on various issues.

Gram Sabha Member's Participation in Group Discussion

1.3 USE OF GIS TECHNOLOGY FOR PLANNING

A scientific tool has been promoted at various stages of watershed development planning.

Various maps were prepared such as Base map, Present Land Use, Geo-hydrological, Micro Watershed, Drainage, Contours, Slope, Soil Classification, Land Capability Classification, Soil Fertility, Ground Water Depth, Water Quality and proposed works. The base map prepared by Soil and Land use Survey of India (SLUSI) with coding have been used for the purpose on demarcation of micro-watershed boundaries.

1.3.1 Prioritization

With the assistance of Geographical Information System (GIS), various layers were created like Topography (slope), Drainage and contour, Groundwater conditions, Slope, Soil, Soil fertility and Land Capability classes. All these parameters were given weightage as per the guidelines issued by Govt. of India. The map prepared was used during the field visit for finalization of works.

1.3.2 Planning

Based on the land use and Topographical maps in addition to social maps (PRA) prepared by the participants, analysis was carried out for the planning in micro- watersheds. The action plan was formulated using maps of Drainage pattern, Soil class, Soil erosion, forest, hydrology and present land use. The project proposals were deliberated in the Gram Sabha meetings which were approved with required amendments.

Based on the need and experience of the experts working in the area and catchment area, structureslike Renovation and digging of percolation pond, Drainage measures, land development works, retaining wall, ramp and inlet of pond, water conveyance system, culverts, plantation, land leveling, bunding etc.were provided in consultation with the Gram Sabha Members. However finally only those activities are included which were suggested by the Gram Sabha according to their needs.

1.3.3 Hydrological modeling

The relevant hydrological parameters were used for delineation of micro- watersheds as per the existing drainage system. The works/ activities under drainage line treatment are proposed as per topography, present land use, site conditions and run- off in consultation with WC. These maps were generated as per SLUSI coding system. The maps are produced by developing different layers using GIS technology.

Table 1. Detail of scientific planning and inputs in IWMP projects

S.No.	Scientific Criteria/input used	Whether Scientific Criteria was used
A	**Planning**	
	Cluster approach	Yes
	Hydro-geological survey	Yes
	Contour Mapping	Yes
	Participatory net planning (PNP)	Yes
	Remote sensing data-especially soil	Yes
	Ridge to valley treatment	N.A.
	Online IT connectivity between	Yes
	1. Project and DRDA cell/ZP	Yes
	2. DRDA and SLNA	Yes
	3. SLNA and DoLR	Yes
	Availability of GIS layers	Yes
	1. Survey of India map/imagery /SLUSI map	Yes
	2. Micro- Watershed Boundary	Yes

S.No.	Scientific Criteria/input used	Whether Scientific Criteria was used
	3. Drainage pattern	Yes
	4. Soil (soil fertility status)	Yes
	5. Land use	Yes
	6. Ground water status	Yes
B	Inputs	-
	Bio pesticides	Yes
	Organic manure	Yes
	Vermi- compost	Yes
	Bio Fertilizer	Yes
	Water saving devices	No
	Mechanical tools	Yes
	Bio fencing	No
	Nutrient Budgeting	No
	Automatic water level recorder & sedimentation samplers	No

1.4 Preparation of Action Plan and Approval

Based on the need and problems in watershed area; a draft action plan was prepared and placed before the concerned watershed development committee as per schedule circulated by Additional Deputy Commissioner for approval of the Watershed Committees. After detailed deliberation and incorporation of relevant recommendation/ suggestions into the plan, the action plan was approved in the meeting of Gram Sabha. The resolution of each village falling in the watershed has been received. The record is available with the PIA and WAPCOS.

CHAPTER – 2
PROJECT BACKGROUND

2.1 PROJECT BACKGROUND

Integrated Watershed Management Programme (IWMP I) project is falls in Meham and Lakh anmajra block of Rohtak district in Haryana state. The project is a cluster of thirteen micro- watersheds namely Bedwa (Part) [6D1F1x4], Bhaini Chanderpal(part) [6D1F1s3], Bhaini Maharajpur (part) [6D1F1s4], Farmana Khas(part) [6D1F1y2], Farmana Badshahpur (part) [6d1f1y3], Bhaini Surjan A (part) [6D1F1s7], Bhaini Surjan B (Part) [6D1F1s7], Madina Gindhran (Part) [2C5F8j7], Bainsi A (part) [6D1F1t8], Bainsi B (part) [6D1F1t8], Girawar (Part) [2C5F8j2], Guga Heri [6D1F1t9] and Kishangarh [6D1F1h8]. The total geographical area of the project is **7867 ha** out of which **6337 ha** has been undertaken to be treated under IWMP I starting from year 2012-2013. The project is divided into thirteen micro watersheds. The Base map is shown in Annexure I.

Table 1: Basic Project Information

Sr. No	Name of the project	Name of the micro watersheds	Code No.	Name of the villages	Block	District	Area of the Project (ha)	Area proposed to be treated (ha)	Total Project cost (Rs lacs)	PIA
1	IWMP-I (Meham)	Bedwa (part)	6D1F1x4	Bedwa (part)	Meham	Rohtak	501	363	43.56	ASCO, Rohtak
2		Bhaini Chanderpal (part)	6D1F1s3	Bhaini Chanderpal (part)	Meham	Rohtak	522	407	48.84	
3		Bhaini Maharajpur (part)	6D1F1s4	Bhaini Maharajpur (part)	Meham	Rohtak	428	373	44.76	

Sr. No	Name of the project	Name of the micro watersheds	Code No.	Name of the villages	Block	District	Area of the Project (ha)	Area proposed to be treated (ha)	Total Project cost (Rs lacs)	PIA
4		Farmana Khas(part)	6D1F1y2	Farmana Khas(part)	Meham	Rohtak	522	547	65.64	
5		Farmana Badshahpur (part)	6d1f1y3	Farmana Badshahpur (part)	Meham	Rohtak	596	407	48.84	
6		Bhaini Surjan A	6D1F1s7	Bhaini Surjan A	Meham	Rohtak	513	499	59.88	
7		Bhaini Surjan B	6D1F1s7	Bhaini Surjan B	Meham	Rohtak	738	652	78.24	
8		Madina Gindhran (part)	2C5F8j7	Madina Gindhran (part)	Lakhan Majra	Rohtak	776	410	49.2	
9		Bainsi A (Part)	6D1F1t8	Bainsi A (Part)	Lakhan Majra	Rohtak	680	635	76.2	
10		Bainsi B (part)	6D1F1t8	Bainsi B (part)	Lakhan Majra	Rohtak	569	561	67.32	
11		Girawar (part)	2C5F8j2	Girawar (part)	Meham	Rohtak	681	456	54.72	
12		Guga Heri (part)	6D1F1t9	Guga Heri (part)	Lakhan Majra	Rohtak	480	547	65.64	
13		Kishangarh (Kheri Meham)	6D1F1h8	Kishangarh (Kheri Meham)	Lakhan Majra	Rohtak	861	480	57.6	
					Grand Total		**7867**	**6337**	**760.44**	

2.2 NEED OF WATERSHED DEVELOPMENT PROGRAMME

Watershed development programme is prioritized on the basis of thirteen parameters namely;

i. poverty index,
ii. percentage of SC,
iii. actual wages,
iv. percentage of small and marginal farmers,
v. ground water status,
vi. moisture index,
vii. area under rain fed agriculture,
viii. drinking water situation in the area ,
ix. percentage of degraded land,
x. productivity potential of land,
xi. continuity of any other watershed already developed/treated,
xii. cluster approach for plain terrain,
xiii. cluster approach for hilly terrain,

The criteria and weightage of each of the parameters has been given in **Table 2**.

Table 2. Criteria and Weightage for Selection of Watershed

S. No.	Criteria	Maximum Score	Ranges and Scores			
i.	Poverty index (% of poor to population)	10	Above 80 % (10)	80 to 50 % (7.5)	50 to 20 % (5)	Below 20% (2.5)
ii.	% of SC/ST population	10	More than 40 % (10)	20 to 40 % (5)	Less than 20% (3)	
iii.	Actual wages	5	Actual wages are significantly lower than minimum wages (5)	Actual wages are equal to or higher than minimum wages (0)		
iv.	% of small and marginal farmers	10	More than 80 % (10)	50 to 80 % (5)	Less than 50% (3)	
v.	Ground water status	5	Over exploited (5)	Critical (3)	Sub Critical (2)	Safe (0)
vi.	Moisture index/ DPAP/DDP block	15	-66.7 & below (15) DDP block	-33.3 to -66.6 (10) DPAP Block	0 to -33.2 (0) Non DPAP/DDP Block	
vii	Area under rain fed agriculture	15	More than 90 % (15)	80 to 90 % (10)	70 to 80 % (5)	Below 70 % (Reject)
viii	Drinking water	10	No source (10)	Problematic village (7.5)	Partially covered (5)	Fully covered(0)
ix	Degraded land	15	High-above 20 % (15)	Medium-10 to 20 % (10)	Low-less than 10 % of TGA (5)	
x	Productivity potential of the land	15	Lands with low production & where productivity can be significantly enhanced with reasonable efforts (15)	Lands with moderate production & where productivity can be enhanced with reasonable efforts (10)	Lands with high production & where productivity can be marginally enhanced with reasonable efforts (5)	

S. No.	Criteria	Maximum Score	Ranges and Scores			
xi	Contiguity to another watershed that has already been developed/treated	10	Contiguous to previously treated watershed & contiguity within the micro-watersheds in the project (10)	Contiguity within the micro-watersheds in the project but non contiguous to previously treated watershed (5)	Neither contiguous to previously treated watershed nor contiguity within the micro-watersheds in the project (0)	
xii	Cluster approach in the plains (More than one contiguous micro-watersheds in the project)	15	Above 6 micro-watersheds in cluster (15)	4 to 6 micro-watersheds in cluster (10)	2 to 4 micro-watersheds in cluster (5)	
xiii	Cluster approach in the hilly tract (More than one contiguous micro-watersheds in the project)	15	Above 5 micro-watersheds in cluster (15)	3 to 5 micro-watersheds in cluster (10)	2 to 3 micro-watersheds in cluster (5)	
	Total	**150**	**150**	**93**	**37**	**2.5**

Based on above criteria and weightage of 66 concerning these thirteen parameters, a composite ranking was given to Meham Watershed (IWMP I) project as given in **Table- 3.**

The total numbers of families under BPL are 21% of the total number of household in the village. Hence a score of 5 was allotted. Rainfed agriculture is more and more than 80% and more than 50% farmers are small and marginal. So the scoring is 10 &5 resp. The percentage of schedule castes in this watershed is about 20 percent of the total population, hence 3 score was allotted. Considering these parameters watershed score is 66.

Table- 3: Weightage of the Project

District	Name of the project	No. of micro-watersheds proposed to be covered	Proposed project area (ha)	Type of project (Hilly/ Desert/ Others)	Proposed cost (Rs. in lakh)	Weight age under the criteria#													
						i	ii	iii	iv	v	vi	vii	viii	ix	x	xi	xii	xiii	Total
Rohtak	Meham watershed (IWMP I)	13	6337	Semi Arid	760.44	5	3	0	5	3	0	10	0	5	15	10	10	0	66

Table 4: Watershed Information

Name of the Project	No. of Micro-Watersheds to be Treated	Watershed codes	Watershed regime/type/order
Meham Watershed (IWMP I)	13	6D1F1x4f, 6D1F1s3, 6D1F1s4, 6D1F1y2, 6d1f1y3, 6D1F1s7, 2C5F8j7, 6D1F1t8, 2C5F8j2, 6D1F1t9 and 6D1F1h8	Others

2.3 OTHER ONGOING DEVELOPMENT PROJECTS / SCHEMES IN THE PROJECT VILLAGES

These villages being backward have been on top priority in number of developmental projects. These programmes are Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Total Sanitation Campaign (TSC),

Swarnajaynti Gram Swarojgar Yogna (SGSY) and Indira Awas Yojana (IAY), NWDPRA etc. All the active programmes are tabulated in **Table 5.**

Table5. Ongoing Developmental Programs in the Project Area

S. No.	Name of the Program /Project	Name of Micro watersheds	Sponsoring agency	Objective	Estimated number of beneficiaries for year 2013-14 (Job card issued)
1	MGNREGA	Bedwa	DRDA, Rohtak	To provide assured employment of 100 days in a year to unskilled labour and village development	26
2	MGNREGA	Bhaini Chanderpal	DRDA, Rohtak	To provide assured employment of 100 days in a year to unskilled labour and village development	67
3	MGNREGA	Bhaini Maharajpur	DRDA, Rohtak	To provide assured employment of 100 days in a year to unskilled labour and village development	75
4	MGNREGA	Farmana Khas	DRDA, Rohtak	To provide assured employment of 100 days in a year to unskilled labour and village development	293
5	MGNREGA	Farmana Badshahpur	DRDA, Rohtak	To provide assured employment of 100 days in a year to unskilled labour and village development	22
6	MGNREGA	Bhaini Surjan	DRDA, Rohtak	To provide assured employment of 100 days in a year to unskilled labour and village development	43

7	MGNREGA	Bainsi	DRDA, Rohtak	To provide assured employment of 100 days in a year to unskilled labour and village development	46
8	MGNREGA	Girawar	DRDA, Rohtak	To provide assured employment of 100 days in a year to unskilled labour and village development	-
9	MGNREGA	Guga Heri	DRDA, Rohtak	To provide assured employment of 100 days in a year to unskilled labour and village development	100
10	MGNREGA	Kishangarh	DRDA, Rohtak	To provide assured employment of 100 days in a year to unskilled labour and village development	-
11	MGNREGA	Madina Gindhran	DRDA, Rohtak	To provide assured employment of 100 days in a year to unskilled labour and village development	-

The District Rural Development Agency has undertaken various schemes under watershed development programme and the status is presented in **Table 6.**

Table 6: Previous Watershed Programme in the Project Area (if any)

S. No.	Names of Districts	Total micro-watersheds in the District		Micro-watersheds covered so far						Net watersheds to be covered	
				Dept. of Land Resources		Other Ministries/ Depts.		Total watersheds covered			
				Pre-IWMP projects (DPAP +DDP +IWDP)		Any other watershed project					
		No.	Area (ha.)	No.	Area (ha.)	No.	Area (ha.)	No.	Area (ha.)	No.	Area (ha.)

1.	**Rohtak**	**288**	**158460**	**38**	**19000**	**-**	**-**	**38**	**19000**	**250 (balance)** **21**	**139460 (balance)** **10061**

CHAPTER – 3

BASIC INFORMATION OF THE PROJECT AREA

GEOGRAPHY AND GEOHYDROLOGY

The Meham Watershed (IWMP-I) falls in Meham and Lakhan Majra block of District Rohtak. Physiographically, the area falls under dune and interdunal plains. The area of watershed lies in between 28 49'30''to 28°56'30'' N Latitude & 76°47'10'' to 76°50'30'' east longitude with general elevation varies between 216-227 m (MSL) above mean sea level. Annual average rainfall of the district is 274 mm and about 80 percent of its annual rainfall is received in the month of July to September. Despite total rainfall received in this area, water retention is low to medium, due to light texture and dune topography. The Contour and Drainage map is presented in **Annexure-II.**

3.1 LAND USE PATTERN

The village wise land use pattern is tabulated in **Table-1.** Land use map is shown in **Annexure-III.**

Table. 1 Land use pattern of Meham Watershed (IWMP-I)

Sr. No.	Name of Micro Watersheds With Code	Name of Villages	Geographical Area in (ha)	Treatable area of the village(ha)	Land under agriculture use (ha)	Rain fed area (ha)	Wasteland	
							Cultivable	Non-Cultivable
1	Bedwa (part)	Bedwa (part)	501	363	449	311	-	52
2	Bhaini Chanderpal (part)	Bhaini Chanderpal (part)	522	407	398	283	35	89
3	Bhaini Maharajpur (part)	Bhaini Maharajpur (part)	428	373	352	297	10	66
4	Farmana Khas(part)	Farmana Khas(part)	560	547	258	245	13	289
5	Farmana Badshahpur (part)	Farmana Badshahpur (part)	596	407	513	324	11	72
6	Bhaini Surjan A	Bhaini Surjan A	513	499	393	379	31	89
7	Bhaini Surjan B	Bhaini Surjan B	738	652	315	229	15	408
8	Madina Gindhran (part)	Madina Gindhran (part)	776	635	428	287	-	348
9	Bainsi A (Part)	Bainsi A (Part)	680	561	484	365	6	190
10	Bainsi B (part)	Bainsi B (part)	569	456	487	374	7	75
11	Girawar (part)	Girawar (part)	681	547	439	305	104	138

Sr. No.	Name of Micro Watersheds With Code	Name of Villages	Geographical Area in (ha)	Treatable area of the village(ha)	Land under agriculture use (ha)	Rain fed area (ha)	Wasteland	
							Cultivable	Non-Cultivable
12	Guga Heri (part)	Guga Heri (part)	480	410	422	352	-	58
13	Kishangarh (Kheri Meham)	Kishangarh (Kheri Meham)	861	480	762	381	2	97
			7905	**6337**	**5700**	**4132**	**234**	**1971**

(Source – District Census Handbook, 2001 Rohtak)

3.2 SOIL AND TOPOGRAPHY

The soils of Meham Watershed are very deep, sandy loam to clay loam or clay typic ustipssament, typic haplusteps, typic natrustalf and a eric ustifluvent. The topography of the area ranges from level to gentle slopes. Soils are subject to susceptible to moderate to severe water and wind erosion. The slope ranges from 0.5 to 3% and above most of the area of micro watersheds falls under level to gentle slopes on dune and level to nearly level in interdunal depressions. Slope map is presented in **Annexure IV.**

Table 2. Soil type and Topography

Sr. No.	Name of Micro Watersheds	Code	Geographical area (ha)	Major Soil types	Topography
1.	Bedwa (part)	6D1F1x4	501	Sandy loam to clay loam	Level to nearly level land
2.	Bhaini Chanderpal (part)	6D1F1s3	522	Sandy loam to clay loam	
3.	Bhaini Maharajpur (part)	6D1F1s4	428	Sandy loam to clay loam	

4.	Farmana Khas(part)	6D1F1y2	560	Sandy loam to clay loam	
5.	Farmana Badshahpur (part)	6d1f1y3	596	Sandy loam to clay loam	
6.	Bhaini Surjan A	6D1F1s7	513	Loamy sand to sandy clay loam	
7.	Bhaini Surjan B	6D1F1s7	738	Sandy loam to clay loam	
8.	Madina Gindhran (part)	2C5F8j7	776	Loamy sand to sandy clay loam	
9.	Bainsi A (Part)	6D1F1t8	680	Loamy sand to sandy clay loam	
10.	Bainsi B (part)	6D1F1t8	569	Loamy sand to sandy clay loam	
11.	Girawar (part)	2C5F8j2	681	Sandy loam to clay loam	
12.	Guga Heri (part)	6D1F1t9	480	Sandy loam to clay loam	
13.	Kishangarh (Kheri Meham)	6D1F1h8	861	Sandy loam to clay loam	
			7905		

Source: - Department of Agriculture, Haryana

3.2.1 Flood and Drought Condition

There have been very few incidences of flood in watershed villages. The data collected from the revenue department reveals that the instances of drought once in 4 years. The drought resulted in low to very low yields of the crops.

Table 3. Flood and Drought condition

Sr.No.	Name of Micro- watersheds	Flood Incidence	Drought Incidence
1.	Bedwa (part)	Nil	once in 4 years
2.	Bhaini Chanderpal (part)		
3.	Bhaini Maharajpur (part)		
4.	Farmana Khas(part)		
5.	Farmana Badshahpur (part)		
6.	Bhaini Surjan A		
7.	Bhaini Surjan B		
8.	Madina Gindhran (part)		
9.	Bainsi A (Part)		
10.	Bainsi B (part)		
11.	Girawar (part)		
12.	Guga Heri (part)		
13.	Kishangarh (Kheri Meham)		

3.3 SOILS

3.3.1 Soil Erosion

In the identified thirteen micro watersheds, it is observed that due to light texture & less vegetative cove the soil loss is comparatively high. To minimize the loss of soil in the watershed area the efforts are to be made in collective manner. This results in degradation of agricultural land, deforestation and low organic matter contents.Average annual rainfall is 274 mm of the area. In the watershed area the upper soil crest gets washed away in the form of runoff during rainy season. If heavy storm occurs also carries valuable top soil (sheet) and causes heavy losses. Soil erosion in respect of sheet is very severe. Majority of the watershed Community are dependent on agriculture. Agriculture suffers due to deficit rainfall in the region, resulting in further deterioration of socio economic conditions of community.

3.3.2 Soil Salinity/Alkalinity (Salinity ingress)

There is moderate soil salinity in the Project and pH is normal and within the limits of 7.0 to 8.3.

Based on the soil samples analysis and reports the village wise distribution of pH is tabulated and shown in Table. 4.

Table 4. Soil pH and Salinity

S.No.	Name of Micro Watersheds	Soil pH	Type of salinity
1.	Bedwa (part)	7.4-8.1	Medium to Safe
2.	Bhaini Chanderpal (part)	7.1-7.5	Medium to Safe
3.	Bhaini Maharajpur (part)	7.4-7.9	Medium to Safe
4.	Farmana Khas(part)	7.1-7.9	Medium to Safe
5.	Farmana Badshahpur (part)	7.3-7.9	Medium to Safe
6.	Bhaini Surjan A	7.5-8.3	Medium to Safe
7.	Bhaini Surjan B	7.5-8.3	Medium to Safe
8.	Madina Gindhran (part)	7.4-8.2	Medium saline areas
9.	Bainsi A (Part)	7.2-7.8	Salinity and waterlogging

			problems
10.	Bainsi B (part)	7.2-7.8	Salinity and waterlogging problems
11.	Girawar (part)	7.0-8.2	Salinity and waterlogging problems
12.	Guga Heri (part)	7.2-8.3	Salinity and waterlogging problems
13.	Kishangarh (Kheri Meham)	7.2-7.9	Medium to Safe

3.3.3 SOIL CLASSIFICATION

The Soil map is presented in **Annexure V. The fertility status of the project area, available nitrogen and phosphorus are low. However, the available potash is medium to high. The fertility status map of the project area is exhibited in Annexure-VI.**

3.3.4 Land Capability Classification

It is an interpretative grouping of soils based on inherent soil characteristics, external land features and environmental factors that limit the use of land. As per land capability classification, class 1 to class IV land is suitable to agriculture. Classes V to VIII are not suitable for agriculture. These are used for pastures, forestry, and wildlife and recreation purposes and other industrial and township. Depending upon the degree of limitation and the kind of problems involved in management of soils, the land capability sub classes were indicated by adding the following limitation symbols to the capability classes:

1. Erosion and runoff (e) including risk of erosion and great erosion damage.
2. Excess of water (w) including wetness, high water table, and problem of drainage.
3. Root zone limitation (s) including shallow depth, low water holding capacity, salinity or alkalinity/rockiness.
4. Climate limitation (c).

The soils of the selected Watersheds have been grouped into two land capability classes. A brief description of each capability sub class is given as under and the **Land capability map is exhibited in Annexure-VII.**

Land capability subclass III e2s2

These soils are moderately deep, light to coarse textured, level to nearly level land and intra dunal plains. These soils are well drained, moderately permeable, and have low water holding capacity with slight to moderate erosion hazard.

Following recommendations are suggested for the economic use of this sub-class:

1. Land leveling should be done as per guidelines, because farmers are not economically capable to bear the cost of land leveling.
2. Engineering measures like earthen embankments (if required)with drop structure for safe disposal of excess rainwater should be under taken.
3. Agronomic measures; mainly dry land farming, leguminous crop growing as mix cropping should be recommended.
4. Provide proper drainage system in low lying depression in the area.
5. Increase biomass through adopting agro- forestry on field bunds.

Land capability subclass IV e3s3

These soils are greatly light textured soils developed on nearly level. The water holding capacity is very poor and the water and wind erosion hazard is moderate to severe.

Following recommendations are suggested for the economic use of this sub-class:

1. Suitable soil conservation measures should be adopted to check water and wind erosion. Soils should be provided permanent vegetation (Agro forestry) cover to check further deterioration of soils and check wind erosion.
2. Soils would be occasionally cultivated in suitable crop rotation with indigenous grasses.

3. Land leveling should be done as per guidelines, because formers are not economically capable to bear the rate of land leveling.
4. Earthen Embankment and field bunding with agro- forestry should be provided to check water erosion and dune stabilization.

3.3.5 Climatic Conditions

The average rainfall of the district is 274.2 mm (during the past 10 year's data). The highest rainfall is 465 mm during the year 2008 and lowest 132 mm during the year 2013. The uneven rainfall distribution is leading to run off soil every year to the steams, rivulets and depressed area of the Meham Watershed (IWMP I). The year wise rainfall from 2004 to 2013 is presented in **Table.5.**

Table-5. Rainfall during the years 2000-11

S.No	Year	Rainfall(in mm)
1	2004	272
2	2005	465
3	2006	130
4	2007	238
5	2008	411
6	2009	257
7	2010	414
8	2011	239
9	2012	184
10	2013	132
	Average	**274.2**

(Source: - Ground Water Cell, Rohtak)

The mean maximum temperature is 40.5˚ C (May and June) and mean minimum is 7˚ C (January) of the district. The rainfall data reveals that the district has 23 rainy days in the year.

3.3.6 Physiography and Relief

Physiographically, the area is divided into two parts active and stabilized sand dunes. The general Elevation in the area belongs to stabilized sand dunes and Interdunal plains 216-227 m above mean sea level. The water is drained through fields and create temporary water logging conditions in depressions and along the canal**.** Upper area is badly affected by wind er osion due t o abse nce of ve getative co ver and uneve n slopes. The el evation r ange and per centage sl ope distribution has been presented in **Table 6.**

Table 6. Physiography and Relief

Project Name	Elevation (MSL)	Slope Range (%)
Meham Watershed (IWMP I)	216-227	0.5-3%

3.4 LAND AND AGRICULTURE

The land holding pattern of the villages under Meham Watershed shows that the majority of the land holding is below 1 ha. In the majority of Watershed area suffering from assured irrigation source has forced the majority of the farmers to adopt side income source to survive because the rainfed agriculture does not fulfill of their daily needs. The nearest Industrial Area is Rohtak. This affects directly the demographic profile of the village.

The major crops Bajra, Gwar, Arahar, Green fodder and pulses in Kharif under rainfed conditions. The major crops during Rabi Wheat, Green fodder and seasonal vegetables, Gram, Mustard in rain fed and irrigated conditions. The soil and water conservation measures such as Engineering structures, digging and renovation of percolation pond, Drainage

measures, land development works, retaining wall, ramp and inlet of pond, water conveyance system, culverts, plantation, land leveling, bunding etc. The project would help the farmers to improve crop production which will enhance the net production value. The following plants are commonly observed in the Project Area. The natural vegetation in the project area is exhibited in **Table 7.**

Table 7. NATURAL VEGETATION

Sr. No.	Trees	Fruits	Grasses and Shrubs
1	Neem	Ber	Doob
2	Keekar	Guava	Botha
3	Sheesham	Kinnow	Congress Grass
4		Mango	
5		Chiku	
6		Papaya	

3.4.1 Land Ownership Details

The Caste wise land owned (in ha) is Tabulated in Table 8.

Table-8:- Land Ownership Details

GENERAL	OBC	SC	ST	Total owners
4070	292	27	-	4389

3.4.2 AGRICULTURE/PATTERN

Table 9. Agriculture/ Pattern

Sr. No.	Name of Micro Watersheds	Village	Land under agriculture use (ha)	Net Sown area (ha)	
				One time	Two times
1	Bedwa (part)	Bedwa (part)	449	378	289
2	Bhaini Chanderpal (part)	Bhaini Chanderpal (part)	398	336	253
3	Bhaini Maharajpur (part)	Bhaini Maharajpur (part)	352	291	221
4	Farmana Khas(part)	Farmana Khas(part)	258	195	132
5	Farmana Badshahpur (part)	Farmana Badshahpur (part)	513	426	318
6	Bhaini Surjan A	Bhaini Surjan A	393	331	234
7	Bhaini Surjan B	Bhaini Surjan B	315	269	198
8	Madina Gindhran (part)	Madina Gindhran (part)	428	374	238
9	Bainsi A (Part)	Bainsi A (Part)	484	412	301
10	Bainsi B (part)	Bainsi B (part)	487	421	291
11	Girawar (part)	Girawar (part)	439	376	273
12	Guga Heri (part)	Guga Heri (part)	422	367	261
13	Kishangarh (Kheri Meham)	Kishangarh (Kheri Meham)	762	651	483
		Total	**5700**	**4827**	**3492**

(Source: Department of Agriculture, Haryana)

3.4.3 IRRIGATION

Lack of Assured Irrigation Facilities

The area being located in the tail end of the canal network where surface water availability is uncertain. The present source of irrigation in the watershed has been tabulated in **Table 10.**

Table 10. Irrigation Pattern.

S. No	Name of Micro Watersheds	Name of Villages	Source 1: Canal		Source 2: Groundwater (Tube wells)	
			Availability months	Net area (ha)	Availability months	Net area (ha)
1.	Bedwa (part)	Bedwa (part)	July to June	138	July to June	-
2.	Bhaini Chanderpal (part)	Bhaini Chanderpal (part)	July to June	115	July to June	-
3.	Bhaini Maharajpur (part)	Bhaini Maharajpur (part)	July to June	55	July to June	-
4	Farmana Khas(part)	Farmana Khas(part)	July to June	13	July to June	-
5	Farmana Badshahpur (part)	Farmana Badshahpur (part)	July to June	189	July to June	-
6	Bhaini Surjan A	Bhaini Surjan A	July to June	100	July to June	-
7	Bhaini Surjan B	Bhaini Surjan B	July to June		July to June	-
8	Madina Gindhran (part)	Madina Gindhran (part)	July to June	135	July to June	6
9	Bainsi A (Part)	Bainsi A (Part)	July to June	214	July to June	18
10	Bainsi B (part)	Bainsi B (part)	July to June		July to June	
11	Girawar (part)	Girawar (part)	July to June	134	July to June	-
12	Guga Heri (part)	Guga Heri (part)	July to June	68	July to June	2
13	Kishangarh (Kheri Meham)	Kishangarh (Kheri Meham)	July to June	375	July to June	6
		Total		**1536**		**32**

(Source – District Census Handbook Rohtak**)**

3.4.4 CROPPING PATTERN (crop details)

Cropping Pattern

The village wise area production and productivity of each crop is tabulated in **Table 11 A and 11 B** (Rabi and Kharif)**.**

Table 11 A. Crop Details (Rabi)

S. No.	Name of Micro Watersheds	Rabi crops (Wheat)				(Oilseed)			
		Area (ha)	Prod. (000'kg)	Productivity (kg/ha) Avg.	Use of fertilizer	Area (ha)	Prod. (000'kg)	Productivity (kg/ha) Avg.	Use of fertilizer
1.	Bedwa (part)	205	811.8	3960	DAP/Urea	66	101.2	1534	DAP/Urea
2.	Bhaini Chanderpal (part)	235	922.1	3924	DAP/Urea	55	86.0	1564	DAP/Urea
3.	Bhaini Maharajpur (part)	225	884.9	3933	DAP/Urea	48	71.8	1496	DAP/Urea
4	Farmana Khas(part)	325	1263.9	3889	DAP/Urea	92	139.0	1511	DAP/Urea
5	Farmana Badshahpur (part)	295	1163.8	3945	DAP/Urea	65	96.6	1486	DAP/Urea
6	Bhaini Surjan A	252	1011.0	4012	DAP/Urea	75	115.7	1543	DAP/Urea
7	Bhaini Surjan B	355	1415.4	3987	DAP/Urea	125	190.8	1526	DAP/Urea
8	Madina Gindhran (part)	335	1281.7	3826	DAP/Urea	115	172.8	1503	DAP/Urea
9	Bainsi A (Part)	325	1252.6	3854	DAP/Urea	115	178.6	1553	DAP/Urea
10	Bainsi B (part)	295	1141.4	3869	DAP/Urea	78	118.2	1516	DAP/Urea
11	Girawar (part)	295	1162.9	3942	DAP/Urea	83	123.8	1491	DAP/Urea
12	Guga Heri (part)	245	970.7	3962	DAP/Urea	56	86.1	1537	DAP/Urea
13	Kishangarh (Kheri Meham)	295	1149.3	3896	DAP/Urea	58	85.9	1481	DAP/Urea
		3682	**14431.5**			**1031**	**1566.6**		

Table 11 B. Crop Details (Kharif)

S. No.	Name of Micro Watersheds	(Bajra)				(Paddy)			
		Area (ha)	Prod. (000'kg)	Productivity (kg/ha) Avg.	Use of fertilizer	Area (ha)	Prod. (000'kg)	Productivity (kg/ha) Avg.	Use of fertilizer
1.	Bedwa (part)	102	214.8	2106	DAP/Urea	65	119.1	1833	DAP/Urea
2.	Bhaini Chanderpal (part)	105	222.5	2119	DAP/Urea	82	151.4	1846	DAP/Urea
3.	Bhaini Maharajpur (part)	102	219.9	2156	DAP/Urea	76	138.6	1824	DAP/Urea
4	Farmana Khas(part)	155	323.3	2086	DAP/Urea	75	139.8	1864	DAP/Urea
5	Farmana Badshahpur (part)	125	265.1	2121	DAP/Urea	52	93.9	1805	DAP/Urea
6	Bhaini Surjan A	175	373.1	2132	DAP/Urea	85	155.2	1826	DAP/Urea
7	Bhaini Surjan B	238	507.4	2132	DAP/Urea	110	202.0	1836	DAP/Urea
8	Madina Gindhran (part)	225	474.3	2108	DAP/Urea	95	175.0	1842	DAP/Urea
9	Bainsi A (Part)	195	406.8	2086	DAP/Urea	105	188.9	1799	DAP/Urea
10	Bainsi B (part)	220	467.5	2125	DAP/Urea	85	153.4	1805	DAP/Urea
11	Girawar (part)	183	383.2	2094	DAP/Urea	115	210.0	1826	DAP/Urea
12	Guga Heri (part)	125	267.0	2136	DAP/Urea	65	119.1	1833	DAP/Urea
13	Kishangarh (Kheri Meham)	95	201.0	2116	DAP/Urea	115	211.1	1836	DAP/Urea
		2045	4325.9			1125	2057.5		

3.4.5 Livestock

Farmers in these villages have maintaining the milch animals; mostly buffalos. The milk production of these animals (local breeds) is low (**Table 12)**. There is a need for the improvement of the local breed through artificial insemination, proper vaccination and nut ritive f eed. I ntroduction of cr oss breed co ws and m urrah buf falo w ith bet ter m ilk production w ill popularize dairy farming in the area. Also, the farmyard manure procured from these animals would help improve the soil health.

Table 12. Village Wise Distribution of Milk Production in Meham Watershed (IWMP I)

Sr. No	Name of Micro Watersheds	Villages	Buffalo(*Lit/per day/annum) for 6 months	Cow(*lit/per day/annum) for 6 months	Sheep	Goat	Camel
1	IWMP-I	Bedwa	272/2040/367200	156/546/98280	-	-	-
2		Bhaini Maharajpur	568/3976/715680	197/887/159570	252	119	-
3		Bhaini Chanderpal	1049/8917/1604970	498/1494/268920	110	93	-
4		Bhaini Surjan	1147/7455/1341990	497/1988/357840	10	128	-
5		Kishangarh	669/4683/842940	340/1190/214200	198	55	-
6		Girawar	1311/10488/1887840	877/3946/710370	-	177	-
7		Gugaheri	450/3375/607500	158/553/99540	48	7	-
8		Farmana Badshshpur	567/3686/663390	382/1146/206280	115	58	-
9		Madina	895/6265/1127700	438/1752/315360	-	75	-
10		Bainsi	1004/7530/1355400	1555/5442/979650	99	36	-

(Source: Animal Husbandry, Rohtak)

***Average yield of Buffalo is 7-8 lit/day and the Average yield of Cow is 3-4 lit/day**

3.4.6 Ground Water Concern

a) Depth to Water

Ground Water Cell of Haryana has fixed hydrograph station scattered over the district whose monitoring is undertaken during pre and post monsoon season. The water level data has been analyzed for the purpose of ground water studies in the watershed area. The ground water level of all micro watersheds varies from 0.3-7.65 m depth. The village wise water level data has been tabulated in **Table 13.** Depth to water level map has been prepared and presented in the **Annexure VIII.**

Table 13. Village Wise Depth to Water Level of Meham Watershed (IWMP I)

Sr. No.	Name of Micro Watersheds	Ground Water Level (m)
1	Bedwa	5.97
2	Bhaini Maharajpur	5.72
3	Bhaini Chanderpal	6.31
4	Bhaini Surjan	7.65
5	Kishangarh	7.65
6	Girawar	1.19
7	Gugaheri	2.81
8	Farmana Badshshpur	8.11
9	Madina	2.29
10	Bainsi	1.69

The ground water quality of the area is marginal to saline under shallow ground water condition whereas deeper aquifer are highly saline. The water quality map of the area is presented in **Annexure-IX**.

b) Water table fluctuation

From the availability of the data from the period June 1974 to June 2014, it is observed that the water table is rising at the rate of 12 cm per year.

The seasonal fluctuation i.e. Pre and Post monsoon period is 1- 1.5 m.

c) Rain water harvesting

Conservation of ground water is important because it takes years to be replenished. In areas where ground water is used, care must be taken to replenish with rainwater in the areas underlain by marginal where the depth to water is more than 5 m.

It has been proposed to make rainwater-harvesting by construction of water harvesting structures. The provision of this has been provided in the project proposal.

3.4.7 DETAILS OF COMMON PROPERTY RESOURCES: The department of panchayat has maintained the record of common property resources of area under various institutions. The data has been taken has been collected D DPO, Rohtak. The details of common property resource in Meham Watershed (IWMP I) are tabulated in **Table 14.**

Table14. Detail of Common Property Resources

Name of the Project	CPR Particulars	Total Area, ha (Area owned / in possession of)				Area available for treatment (ha)			
		Pvt. Person	Govt.	PRI	Any Other	Pvt. Person	Govt.	PRI	Any Other
Meham Watershed (IWMP I)	Waste land	71	203	1874	57	10	21	678	-
	Pasture	-	-	-	-	-	-	-	-
	Orchards	-	-	-	-	-	-	-	-
	Village wood lot	-	-	-	-	-	-	-	-
	Forest	-	-	-	-	-	-	-	-

	Village ponds, lake	-	-	47	-	-	-	23	-
	Community Buildings	-	-	8	-	-	-	-	-
	Weekly Mkts	-	-	-	-	-	-	-	-
	Permanent Mkts	1	-	-	-	-	-	-	-
	Temples/place of worship	-	-	-	50	-	-	-	-
	Others	-	-	-	-	-	-	-	-

3.5 SOCIO ECONOMIC AND LITERACY PROFILE

Land holdings: The area under the project is cultivated by small and marginal farmers. Almost 70 percent of the farmers fall under this category

Poor economic conditions of farmers: The general socio economic condition of the farmers in this area is quite poor. They cannot use necessary agriculture inputs in a timely fashion due to financial constraints which adversely affects the crop yield.

Village wise household, total population and schedule caste population has been worked out from the census book and is tabulated in **table 15.** The literacy rate of micro watershed wise distribution is also exhibited in **Table 16**.

3.5.1 Demographic Status

Table 15. Demographic Status/ Population Pattern

S. No.	Name of the Micro watershed	Total no. of houses	Total Population			SC			
			Male	Female	Total	Male	Female	Total	%age
1.	Bedwa (Part)	192	583	518	1101	74	69	143	13.0
2.	Bhaini Chanderpal (Part)	1062	3011	2611	5622	593	538	1131	20.1

S. No.	Name of the Micro watershed	Total no. of houses	Total Population			SC			
			Male	Female	Total	Male	Female	Total	%age
3.	Bhaini Maharajpur (Part)	617	1712	1565	3277	427	402	829	25.3
4	Farmana Khas (Part)	1845	5232	4475	9707	1381	1167	2548	26.2
5	Farmana Badshapur (Part)	687	1974	1645	3619	440	378	818	22.6
6	Bhaini surjan	1137	3172	2778	5950	1029	888	1917	32.2
7	Madina Gindhran	1283	3640	3140	6780	599	511	1110	16.4
8	Bainsi	1176	2986	2498	5484	1324	1095	2419	44.1
9	Girawar	1459	4328	3599	7927	780	683	1463	18.5
10	Guga Heri	331	942	771	1713	261	194	455	26.6
11	Kishangarh (Kheri Meham)	620	1726	1485	3211	498	455	953	29.7
	Total	**10409**	**29306**	**25085**	**54391**	**7406**	**6380**	**13786**	**25.3**

(Source- District Census 2011)

Table16. Village wise Literacy Rate in Meham Watershed (IWMP I)

S.No.	Name of the Micro watershed	Total population	Literacy					
			Total Literates	% age	Male	% age	Female	% age
1.	Bedwa (Part)	1101	720	65.4	420	58.3	300	41.7
2.	Bhaini Chanderpal (Part)	5622	3595	63.9	2174	60.5	1421	39.5
3.	Bhaini Maharajpur (Part)	3277	2114	64.5	1268	60.0	846	40.0

4	Farmana Khas (Part)	9707	6282	64.7	3817	60.8	2465	39.2
5	Farmana Badshapur (Part)	3619	2177	60.2	1336	61.4	841	38.6
6	Bhaini surjan	5950	3870	65.0	2343	60.5	1527	39.5
7	Madina Gindhran	6780	3715	54.8	2206	59.4	1509	40.6
8	Bainsi	5484	3715	67.7	2206	59.4	1509	40.6
9	Girawar	7927	4884	61.6	2977	61.0	1907	39.0
10	Guga Heri	1713	1182	69.0	711	60.2	471	39.8
11	Kishangarh (Kheri Meham)	**3211**	**2074**	64.6	**1244**	60.0	**830**	40.0
	Total	54391	34328	63.1	20702	60.3	13626	39.7

(Source- District Census- 2011)

Table 17. EMPLOYMENT STATUS

S.No.	Name of Micro Watersheds	Schedule caste		Cultivators		Agricultural labourers		Household industry workers		Other workers	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1.	Bedwa (Part)	74	69	138	8	73	6	0	0	73	1
2.	Bhaini Chanderpal (Part)	593	538	675	55	62	9	2	0	554	308
3.	Bhaini Maharajpur	427	402	240	84	58	37	7	3	290	143

	(Part)										
4	Farmana Khas (Part)	1381	1167	941	105	142	27	54	9	1031	498
5	Farmana Badshapur (Part)	440	378	423	130	124	27	2	5	406	203
6	Bhaini surjan	1029	888	637	123	153	53	5	2	391	231
7	Madina Gindhran	599	511	840	233	168	78	28	6	576	147
8	Bainsi	1324	1095	225	54	134	8	11	2	736	251
9	Girawar	780	683	912	183	259	46	45	34	448	48
10	Guga Heri	261	194	168	16	33	2	1	0	65	59
11	Kishangarh (Kheri Meham)	**498**	**455**	**374**	**56**	**8**	**6**	**13**	**0**	**249**	**35**
	Total	**7406**	**6380**	**5573**	**1047**	**1214**	**299**	**168**	**61**	**4819**	**1924**

Source: Census 2011

3.5.2 MIGRATION PATTERN

The major reason for migration is lack of employment opportunities, small uneconomical holding, and lack of fodder availability in summer etc. The village wise migration, period, reason for migration and probe able income generation has been compiled and shown in **Table 18.**

Table 18. Migration Pattern in Meham Watershed (IWMP I)

Sr. No.	Name of Micro Watersheds	Total Population	No. of persons migrating	No. of days per year of migration (days)	Main reason for migration	Income during migration/ month/person (in Rs.)
1	Bainsi	5484	593	110	Poor economic condition	4400
2	Madina Gindhran	6780	653	130		6300

Sr. No.	Name of Micro Watersheds	Total Population	No. of persons migrating	No. of days per year of migration (days)	Main reason for migration	Income during migration/ month/person (in Rs.)
3	Farmana Badshahpur	3619	350	140		4300
4	Gugaheri	1713	185	150		5000
5	Girawar	7927	308	120		4000
6	Bedwa	1101	197	145		5000
7	Bhaini Maharajpur	3277	315	145		5200
8	Bhaini Chanderpal	5622	463	140		4500
9	Bhaini Surjan	5950	330	115		4200
10	Kishangarh	3211	405	145		5300

POVERTY: The distribution of the BPL and their percentage is presented in table 19.

Table 19. BPL Pattern

Sr. No.	Name of villages	Total houses	Total Household- BPL	% of BPL HH
1	Bedwa (Part)	192	30	15.6
2	Bhaini Chanderpal (Part)	1062	210	19.8
3	Bhaini Maharajpur (Part)	617	121	19.6
4	Farmana Khas (Part)	1845	356	19.3
5	Farmana Badshapur (Part)	687	209	30.4
6	Bhaini surjan	1137	138	12.1
7	Madina Gindhran	1283	220	17.1
8	Bainsi	1176	384	32.7
9	Girawar	1459	275	18.8
10	Guga Heri	331	102	30.8

Sr. No.	Name of villages	Total houses	Total Household- BPL	% of BPL HH
11	Kishangarh (Kheri Meham)	620	126	20.3
	Total	**10409**	**2171**	**20.9**

(Source: District Administration Rohtak, Haryana)

INFRASTRUCTURE DETAILS

All the villages are well connected by pucca road and primary or middle school exists in all villages. Health facility is available in villages or nearby Health Centers. The village wise details of infrastructure are shown in **Table 20** and the facilities/ household assets in the villages under watershed is shown in **Table 21**.

Table 20. Village Infrastructure

Sr. No.	Name of Micro watersheds	Bank Y/N	Post office Y/N	School Primary/ High/ Sr.Sec	Milk Collection Centre Y/N	Pucca Road to Village Y/N	Health Facility Govt/Private Y/N	Veterinary facility Y/N
1	Bainsi	Y	Y		Y	Y	N	Y
2	Madina	Y	Y	1/3/3	Y	Y	Y	Y
3	Farmana Badshahpur	Y	Y	-/2/1	Y	Y	Y	Y
4	Gugaheri	N	Y	-/1/-	Y	Y	Y	Y
5	Girawar	Y	Y	1/3/2	Y	Y	Y	Y
6	Bedwa	N	N	1/-/-	Y	Y	N	N
7	Bhaini Maharajpur	N	Y	1/1/-	Y	Y	Y	Y
8	Bhaini Chanderpal	N	N	-/2/1	Y	Y	Y	Y

Sr. No.	Name of Micro watersheds	Bank Y/N	Post office Y/N	School Primary/ High/ Sr.Sec	Milk Collection Centre Y/N	Pucca Road to Village Y/N	Health Facility Govt/Private Y/N	Veterinary facility Y/N
9	Bhaini Surjan	N	N	3/3/-	Y	Y	N	N
10	Kishangarh	Y	Y	3/3/1	Y	Y	N	N

FACILITIES/ HOUSEHOLD ASSETS

Table 21. Facilities/ Household assets in Meham Watershed (IWMP I)

Sr. No.	Name of micro water sheds	Total no. of Houses	HHs with Safe latrines	HHs with phones		HHs with vehicles		HHs with TV sets	HHs with cooking gas	HHs with drinking water	HHs with fridge
				Landline	Mobile	2 wheelers	4 wheelers				
1	Girawar	2000	1500	30	4000	850	53	1200	1325	1560	1085
2	F. Badshahpur	1100	900	20	1500	200	10	890	500	700	800
3	Gugaheri	350	304	10	400	300	20	250	256	297	185
4	Madina	1500	836	30	3000	725	50	1200	735	1500	1130
5	Bainsi	1500	1200	40	6000	395	15	1300	1025	1310	1125
6	Kishangarh	1000	706	130	1000	317	42	874	785	1000	512
7	B. Surjan	900	600		850	820	12	650	600	600	500
8	B. Chanderpal	1400	1120	10	1350	600	10	620	980	1260	560
9	B. Maharajpur	620	456	-	1000	320	42	600	495	485	352

Sr. No.	Name of micro water sheds	Total no. of Houses	HHs with Safe latrines	HHs with phones		HHs with vehicles		HHs with TV sets	HHs with cooking gas	HHs with drinking water	HHs with fridge
				Landline	Mobile	2 wheelers	4 wheelers				
10	Bedwa	200	200	8	190	52	20	170	92	-	65

3.5.3 LIVELIHOOD PATTERN: The livelihood from agriculture, animal husbandry, casual labour and others in the micro watershed (village wise) is shown in table 22.There is no major income from the common property resource to the individuals.

Table 22. Per capita (Household) income Meham Watershed (IWMP I)

Sr. No.	Name of micro watersheds	Name of villages	Agriculture in Rs. P.A (in Lakh)	Animal Husbandry in Rs. P.A	Casual labour in Rs. P.A	Others in Rs. P.A	Total income Rs.
1	IWMP-I	Girawar	16000	8000	4000	3500	**31500**
2		F. Badshahpur	14500	6000	4500	4000	**29000**
3		Gugaheri	12000	7000	4800	2500	**26300**
4		Madina	13000	7500	5500	2800	**28800**
5		Kishangarh	12000	8500	5000	3000	**28500**
6		B. Surjan	13500	9000	4500	3500	**30500**
7		B. Chanderpal	9000	8500	4000	2900	**24400**
8		B. Maharajpur	11000	8000	4700	4000	**27700**
9		Bedwa	11500	7500	4500	4500	**28000**
10		Bainsi	9500	6500	5000	3500	**24500**

3.5.4 Comparative Status of crop Productivity

Three major crops namely Wheat, Mustard and Bajra are sown in Watershed villages. Main crops grown in the area are Wheat, Mustard and Bajra. Compared to rest of the district and the state, the average yield of these crops is quite low.

3.6 REASONS FOR LOW PRODUCTIVITY

- Moderate to severe erosion hazard
- Poor physical and chemical properties of the soils.
- Low water holding/ retention capacity.
- Medium to Moderate permeability.
- Low organic carbon content.
- Poor nutrients status in soils.
- Lack of assured irrigation facility.
- Acceptance of hybrid/ high yielding varieties is very low.
- Irregular and erratic rainfall: there is long span between two subsequent rainfalls in the area.
- Sudden change in climate of the area.
- Micro- nutrient deficiency in the soil.
- Full and partial dependence of monsoon.
- Imbalanced use of fertilizer per unit cropped area.
- Lack of economic strength of farmers.
- Lack of good quality of seeds and fertilizer.
- Lack of post harvesting facilities such as storage and marketing.
- Poor ground water quality.

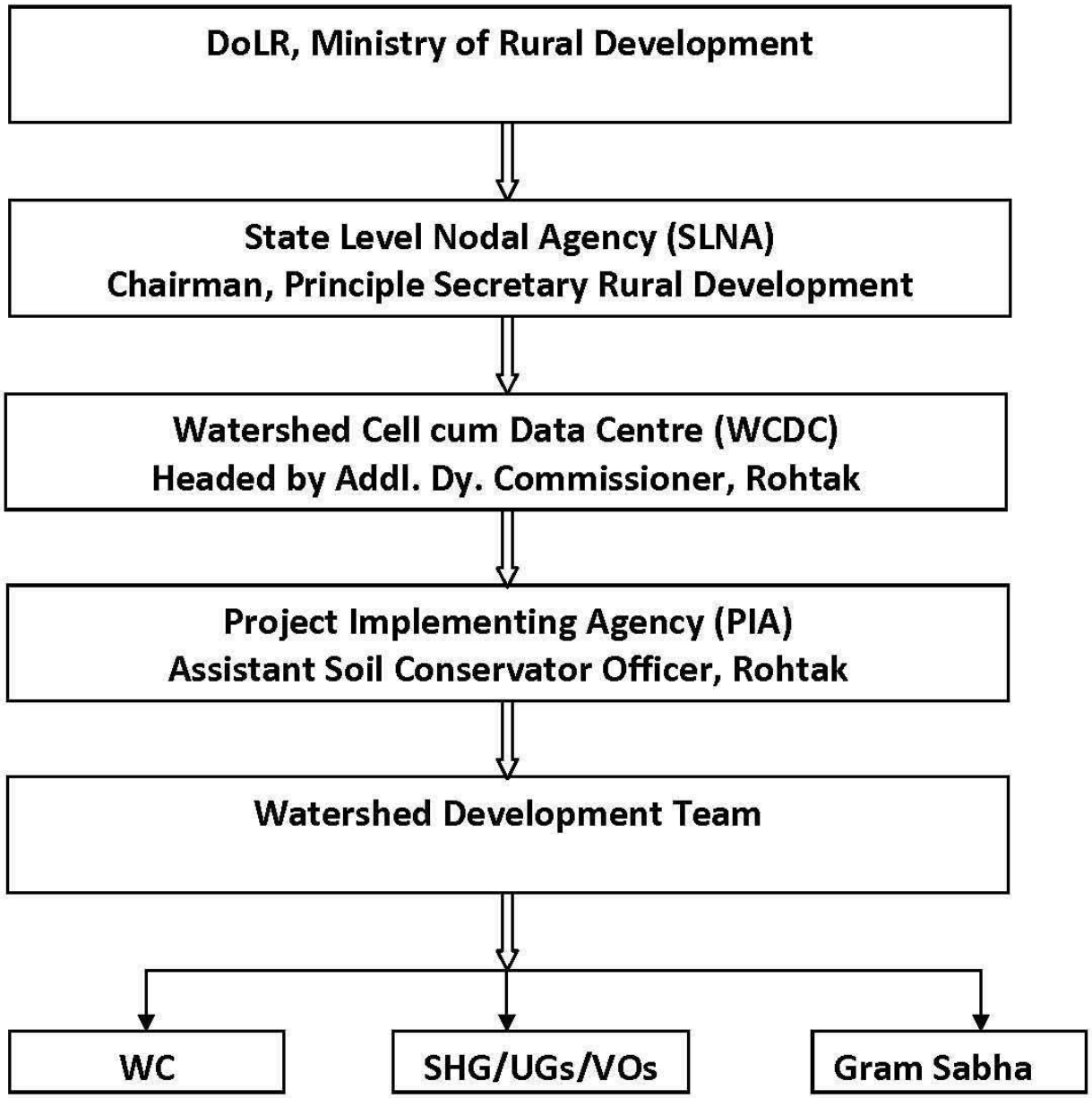
CHAPTER-4

PROJECT MANAGEMENT AGENCIES

4.1 INSTITUTIONAL ARRANGEMENT

Institutions play a major role in managing the projects. Realizing the importance of Community Participation, Decentralized Participatory Approach has been adopted for Watershed Management. Following decentralization and to achieve the objectives, there is a dire need for establishment of Institutional set up from National to Village Level (Micro Watershed Level), including cluster (Watershed Level) and district level. These institutions need to be oriented from time to time and also empowered so that they take up the assigned tasks and work as per their responsibilities from the start of the program to effective management of Project. Considering the prevalent circumstances, these institutions should take decisions at their respective level. The involvement and participation of beneficiaries and other stakeholders is desired to be encouraged right from the planning stage.

The institutional set up is given below:


DoLR, Ministry of Rural Development
State Level Nodal Agency (SLNA)
Chairman, Principle Secretary Rural Development
Watershed Cell cum Data Centre (WCDC)
Headed by Addl. Dy. Commissioner, Rohtak
Project Implementing Agency (PIA)
Assistant Soil Conservator Officer, Rohtak
Watershed Development Team
WC
SHG/UGs/VOs
Gram Sabha

4.2 STATE LEVEL NODAL AGENCY, HARYANA

State Level Nodal Agency (SLNA) is headed by Chief Executive Officer and supported by Technical Experts is fully functional. The regular meetings with PIA and other stake holders are held to provide necessary guidance to them as per the revised, common guidelines, 2011. The main functions of SLNA are:

- ❖ To implement the approved perspective and strategy plan of watershed development for the state.
- ❖ Acts as Nodal Agency at State Level for appraisal and clearance.
- ❖ To establish and maintain a State Level data cell from the funds sanctioned to the State and connect it online with the National Level Data Centre.
- ❖ To provide technical support to Watershed Cell cum Data Centre throughout the state.
- ❖ To approve a list of independent institutions for capacity building of various stakeholders within the state and work out the overall capacity building strategy in consultation with NRAA/Nodal Ministry.
- ❖ To appr ove pr oject i mplementing agenci es identified/selected by WCDC/District Level C ommittee by adopting appropriate objective selection criteria and transparent systems.
- ❖ To est ablish m onitoring, eva luation and l earning syst ems at va rious levels (Internal and e xternal/independent system).
- ❖ To ensure regular and quality online monitoring of watershed projects in the State in association with Nodal Agency at the Central Level and securing feedback by developing partnerships with independent and capable agencies.

4.3 WATERSHED CELL CUM DATA CENTRE, ROHTAK

WCDC has been notified by SLNA and the same has been constituted. The team comprises of 3 to 4 subject matter specialists on Agriculture, Water Management, Social Mobilization and Management & Accounts. WCDC is be headed by Deputy Commissioner and Additional Deputy Commissioner has been designated as Project Manager under IWMP. The

WCDC members comprise of Technical Expert, Computer Operator and Accountant. As per guideline 3 to 6 full time staff (3 in district with less than 25000 ha project area and 6 in districts with more than 25000 ha project area) would assist the Project Manager. The Project Manager will prepare well defined annual goals against which the performance that will be monitored. The WCDC will be financially supported by the DoLR after review of available staff, infrastructure and actual requirement.

Organization of WCDC and its Objective

The primary objective is successful implementation of watershed programme. The organization bears the responsibility to assist and facilitate PIA from time to time. The broad functions of WCDC are as under:

- Providing technical support in planning and implementation of the project.
- Facilitation in preparation of Annual Action Plan.
- Monitoring and of project activities.
- Co-ordination with allied departments.
- Submission of various reports to SLNA.

4.4 Project Implementation Agency

The project Implementing Agencies (PIA), ASCO Rohtak is selected by the State Level Nodal Agency (SLNA) for Integrated Watershed Management Programme (IWMP) in Haryana. In the district Rohtak, where the area of development is 10061 ha, a separate dedicated unit, called the Watershed Cell cum Data Centre has been established which will oversee the implementation of watershed programme. The PIA is responsible for implementation of watershed project. Soils and Water Conservation Department, Rohtak. With the vast experience in implementing various watershed development Projects.PIA will put dedicated watershed development team and will provide necessary technical guidance

to the Gram Sabha /Watershed Committee for implementation of development plans for the watershed projects through Participatory Rural Appraisal Exercise.

PIA will also undertake:

a) Community Organization,
b) Trainings for the village communities,
c) Supervise Watershed Development Activities,
d) Inspect & authenticate project accounts,
e) Monitor & review the overall project implementation,
f) Set up institutional arrangements for post project operations and
g) Maintenance and further development of the assets created during the project period.

Table 1. PIA/ Project Implementing Agency

S.No.	Name of the Project	Details of PIA	
1	Meham Watershed (IWMP-I)	i) Type of organization	Govt Organization
		ii) Name of organization	Assistant Soil Conservation Officer, Rohtak
		iii) Designation & Address	ASCO, Rohtak
		iv) Telephone	-----
		v) Fax	-----
		vi) E-mail	ascorohtak@gmail.com

The PIA is well competent to effectively manage this project and has a good rapport with the village community. The watershed committee members are giving them positive response in the preparatory phase. The overall responsibility of the PIA would be to oversee the project progresses well and to provide technical knowhow as when required. PIA has

qualified and highly experienced staff to accomplish this task and take this project forward for its logical conclusion. PIA will be assisted by the Watershed Development Team.

4.4.1 Monitoring Level Staff at PIA Head Office

The highly experienced staff is engaged in the monitoring the project. The technical guidance to field staff from time to time is being provided. Meetings are being periodically held by head office with officials from the Rohtak district to apprise themselves of the status of ongoing project.

4.5 Watershed Development Team

The watershed development team (WDT) is an integral part of the PIA. WDT would consist of subject specialists such as Agriculture, Animal Husbandry, Horticulture, Soil & Water Management and Forest. One woman member with experience in Social mobilization is also included in WDT. Assistant Soil Conservation Officer would be team leader of the WDTs. Team Leader will coordinate with other WDT members for smooth implementation of the project. One member of the WDT will be departmental official of the rank ADO (Soil Conservation)/ ADO (Agriculture) who will also be responsible for disbursement of funds along with Secretary Watershed Committee.

WDT will guide the watershed committee in the formulation of watershed action plan. An indicative list of the roles and responsibilities of the WDT would include among others, the following.

a) Constitution of Watershed Committee and its functioning,
b) Organizing and strengthening User groups, Self Help Groups,
c) Mobilizing women to ensure that the perspectives and interests of women are adequately reflected in the watershed action plan

d) Conducting Training and Capacity Building,
e) Common property resource management and equitable sharing
f) Preparing detailed resource development plan including Soil & Water Conservation,
g) Undertake engineering surveys,
h) Prepare engineering drawings and cost estimate for structures to be built.
i) Monitoring, checking, assessing, undertaking physical verification and measurements of the work done
j) Facilitating the development of livelihood opportunities for the landless
k) Maintaining project accounts
l) Arranging physical, financial and social audit of the work undertaken
m) Setting up suitable arrangements for post- project operation, maintenance and future development of the assets created during the project period.

4.6 WATERSHED COMMITTEE DETAILS

The process of formation of watershed committees of all villages has been completed and watershed committees have been formed in all villages. The representation on these committees consists of members from- SC, landless, women and members from self help groups and user groups. The committees would be imparted training for smooth management of the activities related to watershed.

Their representation of various groups is as under:

- Minimum of 50% members from SHGs and UGs, SCs, women and landless.
- One member from Watershed Development Team, especially women member (subject matter specialist in Social Science).

The Govt. of Haryana vide department memo no. PO (IWMP)-2012/1479 dated 05.03.2012 has decided to include the following members as members of the Watershed Committees.

- All alive ex-Sarpanches of concerned Gram Panchayats,
- Concerned member of Panchayat Samiti,
- Concerned member of Zila Parishad,

One of the members of Watershed Committees is nominated as Watershed Secretary to perform the following duties:

- Convening meetings of Watershed Committee, Gram Sabha,
- Maintaining all records and proceedings of the meetings.
- Follow up action on all decisions taken in the meetings.
- Ensuring people's participation.

4.6.1 Formation of Watershed Committees (WC)

The watershed committee has been constituted as per the guidelines para 6.3 (44) after convening a meeting of Gram Sabha. The schedule of the meeting was circulated by the Additional Deputy Commissioner well in advance. The watershed committees were constituted in each village as detailed below: **(Table 2)**

Table 2. Watershed Committees (WC) Details

Name of Micro Watersheds	Name of President	Name of Members
Bedwa	Raj Mal	Virender, Bimla, Ruldu Ram, Jai Singh, Kishor, Krishan, Ramesh, Jaibir Nehra, Suresh, Bhagat, Jai Bagwan, Sumita, Suman, Ravinder, Rajmal
Bhaini Chanderpal	Gyan Singh	Rani, Raj Kumar, Raju, Rajpati, Ajmer, Mukesh, Narinder, Rajbir, Duneder Singh, Jaibir, Sumer, Sukhbir, Shamsher, Sumer Singh

Name of Micro Watersheds	Name of President	Name of Members
Bhaini Maharajpur	Babita	Maya, Prem, Balwan, Muktyari, Balbir, Mukesh, Chaju Ram, Surajmal, Sunil, Kalawati, Balbir, Satyawan, Amarjit, Mahabir
Farmana Khas	Jagdish	Shashi Kapoor, Balkar Singh, Prakashi, Kamvesh, Parkash, Narinder, Ramesh, Jai Hari, Ram Bhaj, Parwar, Jagan, Jaibir, Sunita
Bhaini Surjan	Sanjay	Mishari, Satvir, Gulab Singh, Rajpal, Sabanti, Mukesh, Devi Singh, Jagdish, Satewan, Kalawati, Sanjay, Satbir, Bansi, Kuldeep, Surajmal
Madina Gindhran	Kamlesh	Lilu, Satyawan, Ram Kumar, Bebi, Kamlesh, Ramesh, Mukesh, Sunil Kumar, Sant Ram, Hari Ram, Suresh, Narinder, Jai Singh, Mahtab, Jaibir, Ram Chander
Bainsi	Dalip Singh	Roshani, Raj Rani, Randhir, Krishan Lal, Hitesh Bhatia, Sumita, Partap, Mewa Devi, Ashok, Ram Chander, Nathu, Mamta, Sanjay, Satyawan, Ajit
Girawar	Mamta	Krishan, Balwan Singh, Aatma Ram, Amar Singh, Ram Pal, Suresh Kumar, Suman Devi, Hukam Chand, Tara, Jagbir, Jagbir, Premwati, Suresh Kumar
Guga Heri	Mahesh Chander	Mina, Sunita, Birmati, Bhagat Ram, Suresh, Somnath, Satvir Singh, Anil Gandhi, Rajesh, Udey Singh, Rakesh, Kashmiri Lal, Jaibir

As per the government decision, Sarpanch of the village is the Chairman of the watershed committee. The Secretary of the Watershed Committee has been appointed by the Watershed Committee in the meeting of Gram Sabha. The Secretary will be paid honorarium and would be independent from the functioning of Panchayat Secretary. The secretary

would be dedicated in the project activities and would take care of the watershed supervision and would be fully responsible for organizing the meeting and maintenance of records. The main responsibilities of secretary are as under:

- Convening the meeting and recording the minutes of WC meeting and will be responsible for follow up the decision taken by the WC Committee.
- The secretary will be responsible for financial transactions of the project and will sign the cheques with WDT nominee on the behalf of WC.
- He will motivate the villagers for voluntary contribution and ensure equitable distribution of resources.

4.7 INSTITUTIONAL SETUP AT WATERSHED LEVEL

4.7.1 Self Help Groups

The formation of the self help group is all the villages is underway. It is proposed to form at least 2 self help group in each village. In each village Self Help Groups consisting of 10 to 15 members having common goal are being formed. The members of SHGs would be drawn from very poor families, BPL families, SC families, Land less families, Small and Marginal farmers SHG would be homogeneous in nature and would work together for their socio-economic up-liftment. SHGs need to be imparted. Under the project, each SHGs would be given revolving fund Rs. 25000 each after 6 months of the date of formation. The income generating activities would be identified. For adopting economic activities would depend upon the decision of Self Help Group. Accordingly the Orientation and Trainings for their skill up gradation would be arranged in the project as activity. It is the responsibility of Watershed Committee to form SHGs in their respective villages under the guidance of Watershed Development Team and Project Implementing Agency.

4.7.2 User Groups

The Watershed Committee will constitute user group in the watershed area with the help of the WDT. In each Watershed village, user groups are also being formed. Members of these groups would be the beneficiaries of the Watershed project.

User group are formed to manage the activities and also asset created under the programme on the long term basis. These groups would also be homogeneous in nature. User groups shall be given technical support as and when required by Watershed Committee and Watershed Development Team. During the preparatory stage while discussing with the Gram Sabha member it was decided that each group would formulate certain internal rules and have a feeling of ownership with community spirit. The members would be from various categories like landless, small farmer, marginal farmer and large farmer.

CHAPTER- 5

BUDGETING

MICRO WATERSHED WISE/COMPONENTS AND THEIR YEAR WISE PHASING BUDGET UNDER IWMP

IWMP I MEHAM WATERSHED

5.1 BUDGETING

The State Level Nodal Agency will distribute funds to WCDC keeping in view the detailed annual action plan of each micro- watershed. The expenditure under the various component of the project will be carried out as per the guidelines. The activity wise allocations of funds as per the provision of budget components have been work out and exhibited in table. 1. The first step in the budgeting is dividing the cost of project into various components as detailed in the revised common guidelines. It would help the PIA in further identifying activities under different components and allocate appropriate funds.

MICRO WATERSHED WISE / COMPONENT WISE PHASING
YEAR WISE BUDGET PHASING UNDER IWMP I

Area in Hectares and Funds in Rs.

Table 1. Activity wise allocation of funds for Project Village

(BUDGET AT A GLANCE)

Name of the project	Project Area	Effective Area	Funds Available	Name of activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
Meham Watershed (IWMP I)	7867	6337	76044000	Administrative costs	760440	760440	2281320	2281320	1520880	**7604400**
				Monitoring	0	0	0	760440	0	**760440**
				Evaluation	0	190110	190110	190110	190110	**760440**
				Entry point activities	3041760	0	0	0	0	**3041760**
				Institution and capacity building	0	3802200	0	0	0	**3802200**
				Detailed project report	760440	0	0	0	0	**760440**
				Watershed development works	0	6083520	12167040	12927480	11406600	**42584640**
				Livelihood activities for the asset less persons	0	0	2281320	3802200	760440	**6843960**
				Production system and micro enterprises	0	0	2281320	3041760	2281320	**7604400**
				Consolidation phase	0	0	0	0	2281320	**2281320**
				Total	4562640	10836270	19201110	23003310	18440670	**76044000**
				Percentage of total cost	**6%**	**14.25%**	**25.25%**	**30.25%**	**24.25%**	**100%**

MICRO WATERSHED WISE/COMPONENT WISE PHASING
YEAR WISE BUDGET PHASING UNDER IWMP

Area in Hectares and
Funds in Rs.

Table 2. PHASING YEAR WISE (Name of the Micro Watershed: Bedwa)

(BUDGET AT A GLANCE)

Effective Area	Funds Available	Name of activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
363	4356000	Administrative costs	43560	43560	130680	130680	87120	**435600**
		Monitoring	0	0	0	43560	0	**43560**
		Evaluation	0	10890	10890	10890	10890	**43560**
		Entry point activities	174240	0	0	0	0	**174240**
		Institution and capacity building	0	217800	0	0	0	**217800**
		Detailed project report	43560	0	0	0	0	**43560**
		Watershed development works	0	348480	696960	740520	653400	**2439360**
		Livelihood activities for the asset less persons	0	0	130680	217800	43560	**392040**
		Production system and micro enterprises	0	0	130680	174240	130680	**435600**
		Consolidation phase	0	0	0	0	130680	**130680**
		Total	**261360**	**620730**	**1099890**	**1317690**	**1056330**	**4356000**
		Percentage of total cost	**6%**	**14.25%**	**25.25%**	**30.25%**	**24.25%**	**100%**

MICRO WATERSHED WISE/COMPONENT WISE PHASING
YEAR WISE BUDGET PHASING UNDER IWMP

Area in Hectares and
Funds in Rs.

Table 3. PHASING YEAR WISE (Name of the Micro Watershed: Bhaini Chanderpal)

(BUDGET AT A GLANCE)

Effective Area	Funds Available	Name of activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
407	4884000	Administrative costs	48840	48840	146520	146520	97680	**488400**
		Monitoring	0	0	0	48840	0	**48840**
		Evaluation	0	12210	12210	12210	12210	**48840**
		Entry point activities	195360	0	0	0	0	**195360**
		Institution and capacity building	0	244200	0	0	0	**244200**
		Detailed project report	48840	0	0	0	0	**48840**
		Watershed development works	0	390720	781440	830280	732600	**2735040**
		Livelihood activities for the asset less persons	0	0	146520	244200	48840	**439560**
		Production system and micro enterprises	0	0	146520	195360	146520	**488400**
		Consolidation phase	0	0	0	0	146520	**146520**
		Total	**293040**	**695970**	**1233210**	**1477410**	**1184370**	**4884000**
		Percentage of total cost	**6%**	**14.25%**	**25.25%**	**30.25%**	**24.25%**	**100%**

MICRO WATERSHED WISE/COMPONENT WISE PHASING

YEAR WISE BUDGET PHASING UNDER IWMP

Area in Hectares and

Funds in Rs.

Table 4. PHASING YEAR WISE (Name of the Micro Watershed: Bhaini Maharajpur)
(BUDGET AT A GLANCE)

Effective Area	Funds Available	Name of activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
373	4476000	Administrative costs	44760	44760	134280	134280	89520	**447600**
		Monitoring	0	0	0	44760	0	**44760**
		Evaluation	0	11190	11190	11190	11190	**44760**
		Entry point activities	179040	0	0	0	0	**179040**
		Institution and capacity building	0	223800	0	0	0	**223800**
		Detailed project report	44760	0	0	0	0	**44760**
		Watershed development works	0	358080	716160	760920	671400	**2506560**
		Livelihood activities for the asset less persons	0	0	134280	223800	44760	**402840**
		Production system and micro enterprises	0	0	134280	179040	134280	**447600**
		Consolidation phase	0	0	0	0	134280	**134280**
		Total	**268560**	**637830**	**1130190**	**1353990**	**1085430**	**4476000**
		Percentage of total cost	**6%**	**14.25%**	**25.25%**	**30.25%**	**24.25%**	**100%**

MICRO WATERSHED WISE/COMPONENT WISE PHASING
YEAR WISE BUDGET PHASING UNDER IWMP

Area in Hectares and Funds in Rs.

Table 5. PHASING YEAR WISE (Name of the Micro Watershed: Farmana Khas)

(**BUDGET AT A GLANCE)**

Effective Area	Funds Available	Name of activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
547	6564000	Administrative costs	65640	65640	196920	196920	131280	**656400**
		Monitoring	0	0	0	65640	0	**65640**
		Evaluation	0	16410	16410	16410	16410	**65640**
		Entry point activities	262560	0	0	0	0	**262560**
		Institution and capacity building	0	328200	0	0	0	**328200**
		Detailed project report	65640	0	0	0	0	**65640**
		Watershed development works	0	525120	1050240	1115880	984600	**3675840**
		Livelihood activities for the asset less persons	0	0	196920	328200	65640	**590760**
		Production system and micro enterprises	0	0	196920	262560	196920	**656400**
		Consolidation phase	0	0	0	0	196920	**196920**
		Total	**393840**	**935370**	**1657410**	**1985610**	**1591770**	**6564000**
		Percentage of total cost	**6%**	**14.25%**	**25.25%**	**30.25%**	**24.25%**	**100%**

MICRO WATERSHED WISE/COMPONENT WISE PHASING

YEAR WISE BUDGET PHASING UNDER IWMP

Area in Hectares and Funds in Rs.

Table 6. PHASING YEAR WISE (Name of the Micro Watershed: Farmana Badshahpur)

(BUDGET AT A GLANCE)

Effective Area	Funds Available	Name of activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
407	4884000	Administrative costs	48840	48840	146520	146520	97680	**488400**
		Monitoring	0	0	0	48840	0	**48840**
		Evaluation	0	12210	12210	12210	12210	**48840**
		Entry point activities	195360	0	0	0	0	**195360**
		Institution and capacity building	0	244200	0	0	0	**244200**
		Detailed project report	48840	0	0	0	0	**48840**
		Watershed development works	0	390720	781440	830280	732600	**2735040**
		Livelihood activities for the asset less persons	0	0	146520	244200	48840	**439560**
		Production system and micro enterprises	0	0	146520	195360	146520	**488400**
		Consolidation phase	0	0	0	0	146520	**146520**
		Total	**293040**	**695970**	**1233210**	**1477410**	**1184370**	**4884000**
		Percentage of total cost	**6%**	**14.25%**	**25.25%**	**30.25%**	**24.25%**	**100%**

MICRO WATERSHED WISE/COMPONENT WISE PHASING
YEAR WISE BUDGET PHASING UNDER IWMP

Area in Hectares and
Funds in Rs.

Table 7. PHASING YEAR WISE (Name of the Micro Watershed: Bhaini Surjan A)
(BUDGET AT A GLANCE)

Effective Area	Funds Available	Name of activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
499	5988000	Administrative costs	59880	59880	179640	179640	119760	**598800**
		Monitoring	0	0	0	59880	0	**59880**
		Evaluation	0	14970	14970	14970	14970	**59880**
		Entry point activities	239520	0	0	0	0	**239520**
		Institution and capacity building	0	299400	0	0	0	**299400**
		Detailed project report	59880	0	0	0	0	**59880**
		Watershed development works	0	479040	958080	1017960	898200	**3353280**
		Livelihood activities for the asset less persons	0	0	179640	299400	59880	**538920**
		Production system and micro enterprises	0	0	179640	239520	179640	**598800**
		Consolidation phase	0	0	0	0	179640	**179640**
		Total	**359280**	**853290**	**1511970**	**1811370**	**1452090**	**5988000**
		Percentage of total cost	**6%**	**14.25%**	**25.25%**	**30.25%**	**24.25%**	**100%**

MICRO WATERSHED WISE/COMPONENT WISE PHASING
YEAR WISE BUDGET PHASING UNDER IWMP

Area in Hectares and
Funds in Rs.

Table 8. PHASING YEAR WISE (Name of the Micro Watershed: Bhaini Surjan B)
(BUDGET AT A GLANCE)

Effective Area	Funds Available	Name of activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
652	7824000	Administrative costs	78240	78240	234720	234720	156480	**782400**
		Monitoring	0	0	0	78240	0	**78240**
		Evaluation	0	19560	19560	19560	19560	**78240**
		Entry point activities	312960	0	0	0	0	**312960**
		Institution and capacity building	0	391200	0	0	0	**391200**
		Detailed project report	78240	0	0	0	0	**78240**
		Watershed development works	0	625920	1251840	1330080	1173600	**4381440**
		Livelihood activities for the asset less persons	0	0	234720	391200	78240	**704160**
		Production system and micro enterprises	0	0	234720	312960	234720	**782400**
		Consolidation phase	0	0	0	0	234720	**234720**
		Total	**469440**	**1114920**	**1975560**	**2366760**	**1897320**	**7824000**
		Percentage of total cost	**6%**	**14.25%**	**25.25%**	**30.25%**	**24.25%**	**100%**

MICRO WATERSHED WISE/COMPONENT WISE PHASING
YEAR WISE BUDGET PHASING UNDER IWMP

Area in Hectares and
Funds in Rs.

Table 9. PHASING YEAR WISE (Name of the Micro Watershed: Madina Gindhran)
(BUDGET AT A GLANCE)

Effective Area	Funds Available	Name of activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
635	7620000	Administrative costs	76200	76200	228600	228600	152400	**762000**
		Monitoring	0	0	0	76200	0	**76200**
		Evaluation	0	19050	19050	19050	19050	**76200**
		Entry point activities	304800	0	0	0	0	**304800**
		Institution and capacity building	0	381000	0	0	0	**381000**
		Detailed project report	76200	0	0	0	0	**76200**
		Watershed development works	0	609600	1219200	1295400	1143000	**4267200**
		Livelihood activities for the asset less persons	0	0	228600	381000	76200	**685800**
		Production system and micro enterprises	0	0	228600	304800	228600	**762000**
		Consolidation phase	0	0	0	0	228600	**228600**
		Total	**457200**	**1085850**	**1924050**	**2305050**	**1847850**	**7620000**
		Percentage of total cost	**6%**	**14.25%**	**25.25%**	**30.25%**	**24.25%**	**100%**

MICRO WATERSHED WISE/COMPONENT WISE PHASING
YEAR WISE BUDGET PHASING UNDER IWMP

Area in Hectares and
Funds in Rs.

Table 10. PHASING YEAR WISE (Name of the Micro Watershed: Bainsi A)
(BUDGET AT A GLANCE)

Effective Area	Funds Available	Name of activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
561	6732000	Administrative costs	67320	67320	201960	201960	134640	**673200**
		Monitoring	0	0	0	67320	0	**67320**
		Evaluation	0	16830	16830	16830	16830	**67320**
		Entry point activities	269280	0	0	0	0	**269280**
		Institution and capacity building	0	336600	0	0	0	**336600**
		Detailed project report	67320	0	0	0	0	**67320**
		Watershed development works	0	538560	1077120	1144440	1009800	**3769920**
		Livelihood activities for the asset less persons	0	0	201960	336600	67320	**605880**
		Production system and micro enterprises	0	0	201960	269280	201960	**673200**
		Consolidation phase	0	0	0	0	201960	**201960**
		Total	**403920**	**959310**	**1699830**	**2036430**	**1632510**	**6732000**
		Percentage of total cost	**6%**	**14.25%**	**25.25%**	**30.25%**	**24.25%**	**100%**

MICRO WATERSHED WISE/COMPONENT WISE PHASING
YEAR WISE BUDGET PHASING UNDER IWMP

Area in Hectares and
Funds in Rs.

Table 11. PHASING YEAR WISE (Name of the Micro Watershed: Bainsi B)
(BUDGET AT A GLANCE)

Effective Area	Funds Available	Name of activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
456	5472000	Administrative costs	54720	54720	164160	164160	109440	**547200**
		Monitoring	0	0	0	54720	0	**54720**
		Evaluation	0	13680	13680	13680	13680	**54720**
		Entry point activities	218880	0	0	0	0	**218880**
		Institution and capacity building	0	273600	0	0	0	**273600**
		Detailed project report	54720	0	0	0	0	**54720**
		Watershed development works	0	437760	875520	930240	820800	**3064320**
		Livelihood activities for the asset less persons	0	0	164160	273600	54720	**492480**
		Production system and micro enterprises	0	0	164160	218880	164160	**547200**
		Consolidation phase	0	0	0	0	164160	**164160**
		Total	**328320**	**779760**	**1381680**	**1655280**	**1326960**	**5472000**
		Percentage of total cost	**6%**	**14.25%**	**25.25%**	**30.25%**	**24.25%**	**100%**

MICRO WATERSHED WISE/COMPONENT WISE PHASING
YEAR WISE BUDGET PHASING UNDER IWMP

Area in Hectares and
Funds in Rs.

Table 12. PHASING YEAR WISE (Name of the Micro Watershed: Girawar)
(BUDGET AT A GLANCE)

Effective Area	Funds Available	Name of activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
547	6564000	Administrative costs	65640	65640	196920	196920	131280	**656400**
		Monitoring	0	0	0	65640	0	**65640**
		Evaluation	0	16410	16410	16410	16410	**65640**
		Entry point activities	262560	0	0	0	0	**262560**
		Institution and capacity building	0	328200	0	0	0	**328200**
		Detailed project report	65640	0	0	0	0	**65640**
		Watershed development works	0	525120	1050240	1115880	984600	**3675840**
		Livelihood activities for the asset less persons	0	0	196920	328200	65640	**590760**
		Production system and micro enterprises	0	0	196920	262560	196920	**656400**
		Consolidation phase	0	0	0	0	196920	**196920**
		Total	**393840**	**935370**	**1657410**	**1985610**	**1591770**	**6564000**
		Percentage of total cost	**6%**	**14.25%**	**25.25%**	**30.25%**	**24.25%**	**100%**

MICRO WATERSHED WISE/COMPONENT WISE PHASING
YEAR WISE BUDGET PHASING UNDER IWMP

Area in Hectares and
Funds in Rs.

Table 13. PHASING YEAR WISE (Name of the Micro Watershed: Guga Heri)
(BUDGET AT A GLANCE)

Effective Area	Funds Available	Name of activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
410	4920000	Administrative costs	49200	49200	147600	147600	98400	**492000**
		Monitoring	0	0	0	49200	0	**49200**
		Evaluation	0	12300	12300	12300	12300	**49200**
		Entry point activities	196800	0	0	0	0	**196800**
		Institution and capacity building	0	246000	0	0	0	**246000**
		Detailed project report	49200	0	0	0	0	**49200**
		Watershed development works	0	393600	787200	836400	738000	**2755200**
		Livelihood activities for the asset less persons	0	0	147600	246000	49200	**442800**
		Production system and micro enterprises	0	0	147600	196800	147600	**492000**
		Consolidation phase	0	0	0	0	147600	**147600**
		Total	**295200**	**701100**	**1242300**	**1488300**	**1193100**	**4920000**
		Percentage of total cost	**6%**	**14.25%**	**25.25%**	**30.25%**	**24.25%**	**100%**

MICRO WATERSHED WISE/COMPONENT WISE PHASING
YEAR WISE BUDGET PHASING UNDER IWMP

Area in Hectares and
Funds in Rs.

Table 14. PHASING YEAR WISE (Name of the Micro Watershed: Kishangarh)
(BUDGET AT A GLANCE)

Effective Area	Funds Available	Name of activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
480	5760000	Administrative costs	57600	57600	172800	172800	115200	**576000**
		Monitoring	0	0	0	57600	0	**57600**
		Evaluation	0	14400	14400	14400	14400	**57600**
		Entry point activities	230400	0	0	0	0	**230400**
		Institution and capacity building	0	288000	0	0	0	**288000**
		Detailed project report	57600	0	0	0	0	**57600**
		Watershed development works	0	460800	921600	979200	864000	**3225600**
		Livelihood activities for the asset less persons	0	0	172800	288000	57600	**518400**
		Production system and micro enterprises	0	0	172800	230400	172800	**576000**
		Consolidation phase	0	0	0	0	172800	**172800**
		Total	**345600**	**820800**	**1454400**	**1742400**	**1396800**	**5760000**
		Percentage of total cost	**6%**	**14.25%**	**25.25%**	**30.25%**	**24.25%**	**100%**

CHAPTER – 6

PREPARATORY PHASES

During the first year, all activities involved by adopting participatory approach and empowerment of local institutions (WC, SHG, and UG). WAPCOS team assumed the role of facilitator during this phase. In this phase, the main activities are as follows:

6.1 AWARENESS GENERATION AND MOTIVATION FOR PARTICIPATION

Fortunately, due to the implementation of earlier watershed management projects and operation of various ongoing soil and water conservation schemes, there has been regular interaction of the departmental staff with the community. Because of positive result of earlier projects, people are responsive and are looking forward for projects intervention. The need for the soil and water conservation works have emerged due to persistent draught, which the area is facing. However, production system need lot of improvement and hence the need of awareness generation and motivation for collective efforts to face the malady of recurrent floods and draught.

6.1.1 Collection of Base Line Data and Hydrological Data

As explained earlier, base line data from all possible sources is collected for the purpose of not only future impact assessment but also to design project intervention. Most of this was done at the PPR and DPR stages, which forms integral part of the preparatory phase. In addition, data on rain fall amount and distribution, weather conditions and frequency of floods and drought was compiled at DPR stage.

6.1.2 Formation of Village Level Institutions

It has been decided by the state that project activities shall be implemented throughout the watershed committees (WCs). In collaboration with the department, the village level WCs were formed by holding well-attended meeting in which all settlement and section of the society were represented. Due representation was given to women, landless and BPL families as per norms issued by DoLR.

The self- Help Groups were formed during earlier projects but most of them are inactive and non – functional. Those groups will be revived and new ones were formed depending upon willingness of the interest groups. The type of activities these groups want pursue and their capacity building requirements were noted.

6.1.3 Preparation of DPR

PRA exercise and comprehensive data base have been carried out for DPR preparation. Meetings were held at district, micro- watershed wise and village wise with the lined departments and members of Gram Sabha on this aspect**.** The Draft Project Report was prepared on the basic information generated from primary and secondary sources. This also includes the outcome of participatory rural appraisal and outcome of transect walk and stakeholders' discussions. A list of scope of works that finally emerged was prepared. Based on the technical survey, detailed cost estimates were prepared for components including resource management, entry point activities and production system. A broad frame work for capacity building at all levels as per the guidelines of DoLR was prepared. The livelihood opportunities which emerged from local product and market facility were analyzed and outlines of the same were included. Since the financial provisions were decided according to the area proposed to be covered, these provisions were distributed across project activities. The project activities are sequenced into three phase's namely preparatory phase, work phase, consolidation and withdrawal phase. So, the activities were segregated in the sequence and explained in detail. Finally the details about budget and its spilt up into annual action plan were also attempted. Various maps using GIS were created likes Base

map, Present Land Use, Geo-hydrological, Micro Watershed, Drainage, Contours, Slope, Soil Classification, Soil fertility, Land Capability Classification, Ground Water Depth and Quality, Proposed Activities of works. All the works proposed in the DPR are location specific and are as per the local demand and socio- economic conditions of the watersheds.

Strength, Weakness, Opportunities, Threat (SWOT) analysis of IWMP

A critical analysis of main strength of the proposed project, evident weaknesses, opportunities available for successful implementation and scope of achieving set objectives was made. Attention is also paid to possible threat against which sufficient inbuilt safeguards are provided. Such an analysis was done for the project in hand and an d summaries of observations were made and are mentioned below for the all Seven watersheds in Rohtak district.

Strengths

- Strong linkage with national and state level institutes and KGK for capacity building and technical guidance. The HAU is situated nearby the watershed so the services can be utilized in case of assistance in farming.
- Most families are engaged in animal husbandry activities.
- Availability of drinking water.
- Good response to earlier watershed management programmes.
- Local residents are active in micro enterprises.

Weaknesses

- Erratic rainfall
- Poor ground water quality for irrigation
- Lack of good quality fodder.
- Lack of advanced cattle breed.
- Low level of milk production.
- Lack of knowledge base regarding scientific cattle management.

- ❖ Prevalence of soil erosion
- ❖ No organized micro enterprises activities.
- ❖ Lack of technical skills.

Opportunities

- ❖ Available Rain Water harvesting for life saving irrigation.
- ❖ Promotion of organic farming.
- ❖ Promotion of horticultural activities (dry land plants).
- ❖ Provide training on dairy farming and other income generating activities.
- ❖ Promotion of nursery raising and pasture development.

Threats

There are few negative issues that may have adverse effect

- ❖ Unreliable rainfall.
- ❖ Absence of assured irrigation and poor ground water quality.
- ❖ Lack of cooperation and contribution from local residents.
- ❖ Low literacy rate in the project area.
- ❖ Rapid climate change affecting crops.
- ❖ Lack of awareness of Dairy farming as a commercial activity.
- ❖ Frequent droughts.
- ❖ Poor avenues for employment.
- ❖ Wild life menace.

CAPACITY BUILDING- 5%

Rs. 38, 02,200/-

6.2 Capacity Building

1. Introduction

Watershed development is conceived as a strategy for protecting livelihoods of people inhabiting fragile eco systems, which over period of time have become subject to multidimensional land degradation. Main stress has been to ensure availability of water for drinking and irrigation to support agro-horti-forestry operation vis-à-vis raise income level and provide adequate employment opportunities for communities living in such areas of concerns. As an intervention Integrated Wasteland Development is nearly 20 years old. The initiatives have been subject to periodic reviews by expert committees with a broader view to improve upon its strategy and components as well as match with the growing socio-ecological requirements

Para 9.VIII of common guidelines necessitate capacity building and training of all functionaries and stakeholders involved watershed programme on a war footing with definite action plan, requisite professionalism and all round competence.

2. Vision

A sincere effort to provide required professionalism and competence to the stakeholders associated with planning and implementation of IWMP in the state. This would include organisation development, human resource development, cooperation and network development and institutional development, all seen as a continuous process enabling functionaries to enhance their knowledge and skills and to develop the required orientation and perspectives thereby becoming more effective in discharging their roles and responsibilities.

3. Need

The term Capacity Development is understood as the development of peoples, organizations and societies' capability to manage resources effectively and efficiently in order to realize their own goals on a sustainable basis. In this context, four dimensions have to be distinguished:

- The development of the human resource or personnel development.
- The strengthening of the effectiveness and efficiency of organization or organizational development.
- The strengthening of cooperation between organizations and network development.
- The promotion of institutional frameworks for development.

Further, already 47 projects sanctioned in 2011-2012 in the state covering around 248 micro watersheds measuring 179531 hectares of area. The implementation of these new projects under the umbrella of common guidelines is reported to be in the initial stage under preparatory phase. The establishment of desired institutional setup at all levels, required level of awareness for ensuring effectiveness of all institutions and community participation is therefore necessitated for conclusive participation by all.

This also necessitates a comprehensive package to provide appropriate knowledge for speedy implementation of the projects in the state particularly in the districts.

4. Rationale

Para 81 of common guidelines for watershed development lays special emphasis on the following key elements of Capacity building strategy.

- Dedicated & decentralized institutional support & delivery mechanism

- Annual Action Plan for Capacity Building
- Pool of resource persons
- Well prepared training modules and reading materials
- Mechanism for effective monitoring and follow-up.

Keeping in firsthand experience of the state in launching 47 projects under IWMP and current state of planning and implementation under preparatory phase the current action plan is primarily prepared to build the capacity of different principal stakeholders of projects to speed up further implementation and also lay a strong foundation for subsequent phases.

5. Objectives

The main objectives of the current action plan for ongoing 47 projects are outlined as follows:-

- Create common understanding on different features and provisions of common guidelines as well as instructions directions issued from time to time by Central and State Governmental agencies.
- Develop proper conceptual understanding about integrated participatory watershed management including other issues such as equity, environmental and social sustainability among all implementing agencies at project and village levels, PRIs and local communities (**KNOWLEDGE**).
- Build necessary and required skills and managerial competence of all stakeholders about planning, implementation and management of various project activities using participatory approach (**SKILLS**).
- Help institutional growth of watershed committees at GP level.
- Strengthening community participation, ensuring positive involvement of communities and improvement of socio economic conditions in watershed areas (**ATTITUDES**).

Table 1. Statement of Targets under Proposed Training Action Plan at Micro Watershed Level to be conducted by WDT members of Rohtak District

Sr. No.	Title of Training Programme and Duration	Level of Participants	Total persons	Trainees Per Programme	Number of Programmes
01	District Level Sensitization Workshop for Watershed Committees. **One Day**				
	Rohtak District	Members of Watershed Committees @ 10 per committee would also include accompanying WDT Members.	210	200-250	1
02	Block Level Functional Programmes for Secretaries of Watershed Committees. **Two Days**				
	Rohtak District	Secretaries of Village Watershed Committees	21	25-30	1
03	Project Level Sensitization Camps for WC **One Days**				
	Rohtak District	Members of Watershed Committees @ 10 Persons (Tentative) per WC	210	50	6
04	Village Level Awareness Camps on IWMP at Micro Watershed Level for User Groups **One Day**				
	Rohtak District	Approximately 50 prospective user groups per micro watershed.	1050	50	21
05	Block Level Functional Programmes for SHGs [Leader, Secretary and Treasurer] under IWMP **One Day**				
	Rohtak District	Three persons (Leader, Secretary and Treasurer) per Self Help Group @ around one SHG per village.	63	50	2

Note: Training programmes under Sl. No. 01 are proposed to be conducted by HIRD in collaboration with SLNA and WCDCs.

6. Training Methods

A group of selected Watershed Development Team members would be trained on various methods to ensure that they are able to conduct the proposed interventions effectively with the help of some of the following methods.

- Interactive learning.
- Experience Sharing.
- Experimental Learning.
- Presentation of case studies.
- Classroom deliberations.
- Group [structured] exercises and discussions.

7. Tools

- Projectors
- Flip Charts
- Electronic films
- Print Material
- Other IEC material.

8. Resource Persons

8.1. Internal

Around two persons per WDT identified from the initial training activities by HIRD, Nilokheri would be trained on various aspects for designing and conducting the training programmes. It is expected that each WDT members would be required to function as a internal resource person for the proposed training programmes. Technical experts from each WCDC and PIA would also function as facilitators in the proposed training activities.

8.2. External

Further, in order to make the proposed interventions meaningful for achieving the broader objectives efforts would be made to liaison with various experts from district level line departments, agencies and state level institutions including HIRD as per the need of the programme.

9. Fund Requirement

The **approved revised norms for training for PRIs and RD functionaries" by MoRD, GoI in 2010** have been strictly used [for fixed and variable costs].

Table 2. Statement showing funds Requirement for training on IWMP in Haryana (Preparatory Phase – District Level)

Sr. No	Training Programmes for SLNA, WDT, PIA , Field Functionary , WDC member's , SHG & UG organize by HIRD	Total Funds
1	District Level Sensitization Workshop(s) for Watershed Committees	77883
2	Block Level Functional Programmes for Secretaries of Watershed Committees. Two Days	10338
3	Village Level Sensitization Camps for WC One Days	53567
4	Village Level Awareness Camps on IWMP at Micro Watershed Level for Prospective User Groups One Day	124079
5	Block Level Functional Programmes for SHGs [Leader, Secretary and Treasurer] under IWMP One Day	19529
	Total	**285396**

Table 3. Micro Watershed Wise Exposure cum training Visit for SLNA, WDT, PIA, Field Functionary, WDC, SHG & UG Members of IWMP I (Rohtak)

S. No.	Target Group	Training Topics	No. of days	Budget per camp	No. of Camps	No. of Participant per camp	Cost for all participant per day	Cost per partici pant/ per day	Cost per person	Total Budget
1	Self He lp Groups- 2 SHGs- micro watershed level	Orientation on IWMP, S HGs cum Exposure Visit	2	26000	5	13	65000	1000	2000	130000
2	User gr oups from each micro watershed	NRM, Po st Pr oject Management et c. – Exposure Visit	2	26000	5	13	65000	1000	2000	130000
3	Sub w atershed Level- WDT Members	Part II -Module I t o V-Exposure Vis it Outside S tate- Conceptual, Technical, So cial, Management of Finance, Monitoring and Evaluation.	4	54000	5	13	97500	1500	6000	270000
4	Sub w atershed Level- PIA Members	Exposure Visi t- Within Fundamentals of Watershed, Finance Management, Fi nal Report on WDP etc	2	39000	5	13	97500	1500	3000	195000
5	District L evel- WDC	Exposure visit t o successful watershed/ University.	2	26000	5	13	65000	1000	2000	130000

S. No.	Target Group	Training Topics	No. of days	Budget per camp	No. of Camps	No. of Participant per camp	Cost for all participant per day	Cost per partici pant/ per day	Cost per person	Total Budget
6	District L evel-Line D eptt., WDC	Exposure visit t o successful watersheds w ithin state.	2	26000	5	13	65000	1000	2000	130000
7	SLNA and District L evel Controlling Officers	Exposure visit t o successful watersheds out side state	4	54000	5	13	97500	1500	6000	270000
Total			**18**		**35**	**91**				**1255000**

Table 4. Farmer's / Beneficiaries training camps with Extension Programmes of IWMP I (Rohtak)

S. No.	District	No. Micro watershed	No. of Camps/ Year/ Micro watershed	Total No. of camps per Year	Total No. of camps for 5 Year's	Amount of per Camp	Amount per Micro watershed	Total Budget
1.	Farmer Tr aining C amp i n each season	13	2	26	130	12,000	120000	15,60,000
2.	Propaganda & Documentation (Puppet show, doc umentary movies show, v ideography, Photography, w all P ainting, Display B oard, pam phlets, leaf lets. Etc)	13	2	26	130	5000	50000	650000
3	Contingency charges							51804
	Total							**2261804**

i) **Training Programmes for SLNA, WDT, PIA , Field Functionary , WDC member's , SHG & UG organize by HIRD = 2,85,396/-**

ii) **Micro Watershed Wise Exposure cum training Visit For SLNA, WDT, PIA , Field Functionary , WDC, SHG & UG Members**
= 12,55,000/-

iii) **Farmer's / Beneficiaries training camps with Extension Program's = 22,61,804/-**

Grand Total = 38,02,200/-

6.2.1 EXPECTED OUTCOME OF CAPACITY BUILDING

- All principal stakeholders would be covered under proposed training interventions by March, 2013.
- The knowledge level of different stakeholders on various provisions of Common Guidelines will increase to a significant level.
- The skill level of the principal stakeholders will be improved in managing watershed projects in consonance with the provisions of common guidelines and state government instructions.
- The programmes will help in ensuring that all stakeholders/agencies/institutions work with positive attitudes in order to utilize the benefit of the projects in fulfilling the objectives set forth.
- Programmes will create a sense of responsible partnership amongst various stakeholders.
- The programmes will also help in further identifying areas for future interventions.
- Improved participation of different stakeholders leading to speedy implementation of watershed development work phase.
- Experiences would help in consolidating other gaps for better planning and management of Capacity Building and Training interventions under new projects in future.

6.3 Entry Point Activities 4%

EPA activities are taken up under the watershed to build rapport with village community at the beginning of the project, generally certain important works which are in urgent demand of the local community are taken up. A group discussion was conducted in the Gram Sabha meeting/watershed committee regarding EPA activities. It was conveyed to the Gram Sabha that an amount of **Rs. 30, 41,760/-** was provided for EPA. The provision of IEC material for community will be met under EPA. The stake holders discussed the various activities which they felt is important but after the discussion the following activities were finalized. The convergence with the other project can also be undertaken.

Table 5. Entry Point Activities in Meham Watershed (IWMP I)(Rs. In Lacs)

Block	No. of EPA Targeted/Identified	No. of EPAs not yet started	No. of EPA in progress	No. of EPAs completed	Name/Nature of EPA	Location	Expenditure
Meham & L. Majra	33	0	1	32	1. Cattle trough with floor near samshanghat. 2. Cattle through with floor in Vet. Hospital. 3. Drinking Water tanki in primary schoo.	Bedwa	1.66
					1. UGPL for Draining out waste water for irrigation purposes. 2. Cattle crush in dhanak chopal. 3. Cattle Crush near water works.	Bhaini Chanderpal	1.88
					1. Arrangement of clean drinking water in Govt. School. 2. Cattle crush 2 No.	Bhaini Maharajpur	1.30
					1. Cattle trough with floor & cattle crush at jonawala pond. 2. Cattle trough with floor & cattle crush at	Farmanakhas	2.40

					dhamawala pond. 3. Cattle trough with floor at jeetori pond. 4. Cattle crush at Beelwala pond.		
					1. Cattle trough with floor & cattle crush in common land near school. 2. Cattle trough with floor & cattle crush in common land near PHC.	Farmana Badshapur	1.79
					1. Underground pipe line for irrigation from village pond to farmer's field 930 m. 2. Cattle trough with pucca floor & crush	Bhaini Surjan	4.82
					1. Cattle trough & cattle crush with pucca floor on Rohtak-Hissar road. 2. Cattle trough and crush near Ghagsha pond. 3. Cattle trough and crush with pucca floor at Khindari talab.	Madina Gndhran	2.66
					1. Cattle trough & cattle crush with pucca floor. 2. Cattle crush at common land near Ashok Nagar. 3. Cattle crush near mail wala talab. 4. Cattle crush Beri road.	Kishangarh	0.78
					1. Cattle trough with floor in Vety. Hospital. 2. Cattle crush at Vety. Hospital. 3. Cattle trough & crush in common land.	Gugaheri	1.43
					1. Cattle trough with Pucca floor both side at Gausala. 2. Cattle trough with floor Gausala-II 3. Cattle crush near peer baba. 4. Cattle trough with floor and crush near Boys School. 5. 2 No. cattle trough with floor Jassiwala pond & Bus Stand.	Bainsi	4.09
					1. Retaining wall in new pond. 2. Cattle crush at common land.	Girawar	2.24
	33	**0**	**1**	**32**			**25.05**

CHAPTER- 7

WORK PHASE

7.1 WATERSHED DEVELOPMENT WORKS - 56%

The Works under the project have been identified after the detailed survey of the Project Area and discussions held with team of experts comprising of PIA, Hydrologist from Haryana supported by Livelihood expert, Agriculture and Horticulture expert and expert in Animal Husbandry. Participatory approach has been adopted to identify the activities under the project. The detailed discussions were held with watershed committees and works identified along with villagers after making visits to identified sites. The works mainly relate to soil and water conservation activities like Renovation and digging of percolation pond, Drainage measures, land development works, retaining wall, ramp and inlet of pond, water conveyance system, culverts, plantation, land leveling, bunding etc. The proposed project proposals were presented in the Gram Sabha meeting as per the schedule and were approved with certain changes. The works thus identified are given in the attached sheets along with estimates – micro watershed wise.

Proper publicity about the proposed project proposal through brochure , pamphlet, wall writing at common place must be carried out in the project areas.

Drainage line Treatment

Most of the area is nearly level, however at few places near stabilized sand dunes where slopes are gentle, small rills with complex slope have been formed which need specific treatment and afforestation to avoid further degradation of the area.

The existing ponds which have been silted-up needs remodeling and strengthening, the provision of which have been provided in the project proposals. Under the IWDP/ Haryali some works like construction/renovation of farm ponds, field bunding has been undertaken but still at few places inlet of the ponds and outlet needs to be constructed. So their repair and renovation is proposed. During the discussion, it was felt to be genuine demand for repair, renovation and capacity enhancement in the area, which would also increase the water potential by rain water harvesting. As per need, retaining walls are proposed at strategic locations to protect the farm lands and bank of ponds.

There is an acute scarcity of water for livestock as village ponds dry out in summer months. Most ponds are silted up and need desiltation. Some are leaking from sides and water is lost quickly. Most of ponds do not have proper inlets, outlets and ramps for water disposal. There is genuine demand for repair, renovation and capacity enhancement construction of new ponds in the area.

7.2 Proposed Activity

The provision for construction/ renovation of pond, inlet, outlet, ramp etc. is the main requirement by project stakeholders which has been provided. In some villages, the constructions of new ponds are proposed, subject to availability of funds. Ponds as such are the best source of rainwater harvesting.

Due to the paucity funds the repair works has been undertaken under different schemes in piece meal. The main requirement of retaining wall was ignored due to inadequate funds. During the discussions/interaction the stake holders gave high priority for construction of retaining wall as lot of water is being wasted through cutting of banks.

The DPR proposals shall be implemented in participatory mode. In this watershed management program, it was planned to rehabilitate the degraded watersheds. The scope of integrated watershed regeneration/rehabilitation works which emerged from the PRA are as under:-

Sample estimates are as follows:

Activities under NRM (56%) Micro Watershed Wise (IWMP I Rohtak) is given below and the proposed Action Plan/ Treatment Plan map shown in **Annexure-X.**

Table 1: Name of Project: IWMP- I Watershed: Meham/Lakhan Majra Name of Village: Madina Gindran

Sr. No.	Nature of Work	Location			Physical				Unit Cost (Rs. In Lacs)	Estimated Cost (Rs. In lacs)	Objective
		Name	Long.	Lat.	No.	Size	Submergence/ Pondage Area (sqm)	Catchment /benefitted area (Ha.)			
1	Deepening of pond	1 Naya Talab 2 Darash wala pond	76°26.951 76°26'-100"	28°56'-191" 28°56'-842"	1 1	120x120x1 (m) 120x90x1 (m)	14400 10800	85 63	5.00	10.00	Enhancement of pondage capacity and improvement in ground water level
2	Land Development works	Panchayati land	76°66'-117"	28°55'-843"	1	10 ha	-	10	0.75	7.50	To check soil erosion
3	Retaining wall	Naya Talab	76°26'-057"	28°56'-191"	1	150 Mtr.	-	50	0.09 /M	13.50	Conservation of natural resources
4	Water conveyance system	Sheetal Baba Mandir to Drain(open pakka channel)	76°26'-536"	28°55'-591"	1	500 Mtr	-	170	1500 /M	7.50	To enhance efficiency of available water to provide drinking water for live stock
5	Culverts	1 Madina to Mokhara road 2 Madina Bye-pass	76°25'-875" 76°26'-537"	28°55'-652" 28°55'-713"	6 4	5x3x1 Mt	-	90 60	0.50	5.00	To provide passage for proper flow of water and to conserve soil and increase in bio mass
6	Soil & moisture conservation works like Earthen bundh, Field bundh, RRWHS, PWC,Lining of WC,L.R Leveling .*etc.	Earthen bundh on Mokhra road	76°25'-956"	28°55'-651"	1	500 Mt	-	109	400 /Mt	2.00	Conservation of natural resources and to protect flood hazards.
Total								**677**		**45.50**	
Available fund								**635**		**42.67**	
Convergence								**42**		**2.83**	

- **Before executing detail topographic survey and assessment must be carried out before implementation.**

MICRO WATERSHED WISE ACTIVITIES UNDER IWMP (56%)

Table 2: Name of Project: IWMP- I Watershed: Meham/Lakhan Majra Name of Village: Kishangarh

Sr. No.	Nature of Work	Location			Physical				Unit Cost (Rs. In Lacs)	Estimated Cost (Rs. In lacs)	Objective
		Name	Long.	Lat.	No.	Size (m)	Submergence/ Pondage Area (sqm)	Catchment /benefitted area (Ha.)			
1	Deepening of pond	**1 Mahu wala pond** **2 Goyat wala pond** **3 Balamba wala pond**	**76°'17'-951"** **76°17'18-43"** **76°18'-124"**	**28°57'-475"** **28°55'-873"** **28°57'-332"**	**1** **1** **1**	**60x70x1** **152x120x1** **100x90x1**	**4200** **15000** **9000**	**124**	**2.50**	**7.50**	**Enhancement of pondage capacity and improvement in ground water level**
2	**Retaining wall**	-	-	-	-	**80 m**	-	**75**	**9000 /**	**7.20**	**Conservation of natural resources**
3	**Water conveyance system**	**Balamba miner to Goyat wala pond**	**76°17'-817"**	**28°'56'-070"**	**1**	**1800 Mtr.**	-	**190**	**500 /**	**9.00**	**To enhance efficiency of available water to provide drinking water for live stock**
4	**Ramp**	**Goyat wala pond**	-	-	**1**	**10x6**		**25**	**1.00 /**	**1.00**	**To conserve natural resources**
5	**Soil & moisture conservation works like Earthen bundh, Field bundh, RRWHS, PWC,Lining of WC,L.R.,Levelling * etc.**	**1G. High school RWHS** **2 G.S.S. school** **Sah wala rasta (field bundh)**	**76°17'-888"** **76°17'-743"** **76°17'-488"**	**28°57'-452"** **28°57'-631"** **28°57'-089"**	**1** **1** **1**	**60x50 m** **120x90 m** **250 m**	 -	**80**	**2.50 /** **5.00 /** **400 /m**	**2.50** **5.00** **1.00**	**Conservation of natural resources and to protect flood hazards**
Total								**494**		**33.20**	
Available fund								**480**		**32.26**	
Convergence								**14**		**0.94**	

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MICRO WATERSHED WISE ACTIVITIES UNDER IWMP (56%)

Table 3: Name of Project: IWMP- I Watershed: Meham/Lakhan Majra Name of Village: Bedwa

Sr. No.	Nature of Work	Location			Physical				Unit Cost (Rs. In Lacs)	Estimated Cost (Rs. In lacs)	Objective
		Name	Long.	Lat.	No.	Size	Submergence/ Pondage Area (sqm)	Catchment /benefitted area (Ha.)			
1	Deepening of pond	**1 Dabh wala pond**	**76°'18'-567"**	**29°04'-011"**	**1**	**180x150x1**	**27000**	**125**	**6.75**	**6.75**	**Enhancement of pondage capacity and improvement in ground water level**
2	**Retaining wall**	**1 Dabh wala pond**	**76°'18'-567"**	**29°04'-011"**	**1**	**40 m**	**-**	**38**	**9000 /**	**3.60**	**Conservation of natural resources**
3	**Water conveyance system**	**1 Maniyana pond to kadsola miner** **2 Maniyana pond to Dabh wala pond**	**76°18'-795"** **76°18'-567"**	**29°'04'-094"** **29°04'-011"**	**1** **1**	**500 mt** **1400 mt**	**-**	**85** **145**	**500**	**10.00**	**To enhance efficiency of available water to provide drinking water for live stock**
4	**Ramp**	**1 Dabh wala pond**	**76°'18'-567"**	**29°04'-011"**	**2**	**40 x20 m**	**-**	**50**	**2.50**	**5.00**	**Conservation of natural resources**
5	**Soil & moisture conservation works like Earthen bundh, Field bundh, RRWHS, PWC,Lining of WC,L.R.,Levelling * etc.**	**RRWHS in Govt. Primary School**	**76°18'-795"**	**29°'04'-094"**	**1**	**30x25 m**	**-**		**2.00**	**2.00**	**Conservation of natural resources and to protect flood hazards.**
6	**Land development**	**Panchayati land**	**76°'18'-567"**	**29°04'-011"**	**-**	**6 ha**		**6**	**3.29**	**3.29**	**To check soil erosion and management of irrigation water**
Total								**455**		**30.64**	
Available fund								**363**		**24.39**	

Convergence	**92**		**6.25**	

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Table 4: Name of Project: IWMP- I Watershed: Meham/Lakhan Majra Name of Village: Bhaini Surjan

Sr. No.	Nature of Work	Location			Physical				Unit Cost (Rs. In Lacs)	Estimated Cost (Rs. In lacs)	Objective
		Name	Long.	Lat.	No.	Size (m)	Submergence/ Pondage Area (sqm)	Catchment /benefitted area (Ha.)			
1	Deepening of pond	1 Beloda Pond 2 Baba Beer pond 3 Naghraj Pond 4 Doshe wala pond	76°16'.862" 76°16'-995" 76°16'-439"	29°00'-860" 29°00'-758" 29°01'-082"	1 1 1 1	90x90x1 120x90x1 60x60x1 120x120x1	8100 10800 3600 14400	155	5.00	20.00	Enhancement of pondage capacity and improvement in ground water level
2	Retaining wall	Doshe wala pond	76°16'-439"	29°01'-082"	1	170 Mtr.	-	125	0.09 /M	15.00	Conservation of natural resources
3	Water conveyance system	Doshe wala pond	76°16'-439"	29°01'-082"	4	4000 Mtr	-	400	500 /M	20.00	To enhance efficiency of available water to provide drinking water for live stock
4	Soil & moisture conservation works like Earthen bundh, Field bundh, RRWHS, PWC,Lining of WC,L.R.,Levelling *etc.	Mandir Wala Rasta to Bhodu wala field bund	76°16'.032"	29°01'-525"	4	3070 m	-	351	500/m	15.35	Conservation of natural resources and to protect flood hazards.
5	Culverts	Mandir Wala Rasta	76°16'.032"	29°01'-525"	4	5x3x1 Mt	-	50	0.50	2.00	To provide passage for proper flow waterand to conserve soil and increase in bio mass
6	Ramp	1 Beloda Pond 2 Baba Beer pond	76°16'.862" 76°16'-995"	29°00'-860" 29°00'-758"	1 1	40x20 m 40x20 m		70	2.50	5.00	Conservation of natural resources

Total								**1151**		**77.35**	
Available fund								**1151**		**77.35**	
Convergence								**-**		**_**	

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Table 5: Name of Project: IWMP- I Watershed: Meham/Lakhan Majra Name of Village: Bhaini Chanderpal

Sr. No.	Nature of Work	Location			Physical				Unit Cost (Rs. In Lacs)	Estimated Cost (Rs. In lacs)	Objective
		Name	Long.	Lat.	No.	Size	Submergence/ Pondage Area (sqm)	Catchment /benefitted area (Ha.)			
1	Deepening of pond	**1 Khudali pond** **2 Kame wala pond**	**76°'18'-342"** **76°18'.286"**	**28°59'-970"** **29°00'-279"**	**1** **1**	**60x70x1.5** **70x60x1**	**6300** **4200**	**95**	**4.00**	**8.00**	**Enhancement of pondage capacity and improvement in ground water level**
2	**Retaining wall**	**1 Khudali pond** **2 Kame wala pond** **3 Bada Talab**	**76°'18'-342"** **76°18'.286"** **76°18'.342"**	**28°59'-970"** **29°00'-279"** **29°00'-050"**	**1** **1** **1**	**100 m** **40 m** **27 m**		**121**	**9000 /**	**15.00**	**Conservation of natural resources**
3	**Water conveyance system**	**1 Khudali pond to kulkha nala** **2 Waste Water pond to Pancnhyati nala**	**76°18'.336"** **76°'18'-342"**	**28°59'-944"** **28°59'-970"**	**1** **1**	**750 Mtr.** **250 m**	**-**	**180**	**500 /**	**5.00**	**To enhance efficiency of available water to provide drinking water for live stock**
4	**Ramp**	**1 Sahpur Pond**	**76°'18'-272"**	**28°59'-970"**	**2**	**10x6 m**		**80**	**1.00 /**	**4.00**	**To conserve natural resources**

		2 Bada Talab	76°’18’-467”	29°00’-050”	2	12x7 m					
Total								**476**		**32.00**	
Available fund								**407**		**27.35**	
Convergence								**69**		**4.65**	

Table 6:Name of Project: IWMP- I Watershed: Meham/Lakhan Majra Name of Village: Bainsi

Sr. No.	Nature of Work	Location			Physical				Unit Cost (Rs. In Lacs)	Estimated Cost (Rs. In lacs)	Objective
		Name	Long.	Lat.	No.	Size	Submergence/ Pondage Area (sqm)	Catchment /benefitted area (Ha.)			
1	Deepening of pond	1 Jassiwala pond 2 Bhainsa wala pond	76°25.091” 76°24’-665”	29°02’-028” 29°02’-122”	1 1	125x175x1 (m) 206x176x1 (m)	21875 36256	160 210	10.50	21.00	Enhancement of pondage capacity and improvement in ground water level
2	Land Dev works	Panchayati land	76°24’-665”	29°02’-122”	1	2 ha	-	2	0.75	1.50	To check soil erosion
3	Retaining wall	1 Jassiwala pond 2 Bhainsa wala pond	76°25.091” 76°24’-665”	29°02’-028” 29°02’-122”	1 1	140 Mtr. 130 m	-	225	0.09 /M	24.30	Conservation of natural resources
4	Soil & moisture conservation works like Earthen bundh, Field bundh, RRWHS, PWC,Lining of	1 RRWHS in Govt. high school 2 Earten Bunds	76°24’-730” 76°25.091”	29°02’-064” 29°02’-030”	1 1	40x12 M 1250 m	-	- 53	4.00 400/m	4.00 5.00	Conservation of natural resources and to protect flood hazards.

	WC,L.R.,Levelling * etc.										
5	**Water conveyance system**	**Farmana Minor to Bhainswala Pond(UGPL)**	**76°24'-665"**	**29°02'-122"**	**1**	**2800 Mtr**	**-**	**380**	**500 /M**	**14.00**	**To enhance efficiency of available water to provide drinking water for live stock**
Total								**1038**		**69.80**	
Available fund								**1017**		**68.34**	
Convergence								**21**		**1.46**	

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Table 7:Name of Project: IWMP- I Watershed: Meham/Lakhan Majra Name of Village: Farmana Badshahpur

Sr. No.	Nature of Work	Location			Physical				Unit Cost (Rs. In Lacs)	Estimated Cost (Rs. In lacs)	Objective
		Name	Long.	Lat.	No.	Size	Submergence/ Pondage Area (sqm)	Catchment /benefitted area (Ha.)			
1	Deepening of pond	1 Dobhi wala pond 2 Gikka wala pond	76°21.179” 76°21’-556”	29°02’-886” 29°02’-855”	1 1	125x135x1 (m) 85x65x1 (m)	16875 5525	89 40	4.50	9.00	Enhancement of pondage capacity and improvement in ground water level
2	Land Dev works	Panchayati land	76°22’-319”	29°02’-517”	1	8 ha	-	8	0.75	6.00	To check soil erosion
3	Retaining wall	Dobhi wala pond	76°21.179”	29°02’-886”	1	50 Mtr.	-	50	0.09 /M	4.50	Conservation of natural resources
4	Water conveyance system	1 Pannu wala Dabda to jaswant’s field(open channel) 2 Meham Minor to Village(UGPL)	76°21’-955” 76°22’-379”	29°02’-689” 29°02’-518”	1 1	450 Mtr 1500 M	-	125 135	1500 /M 500/M	6.50 7.50	To enhance efficiency of available water to provide drinking water for live stock
5	Culverts	Bainsi Road	76°21’-629”	29°02’-682”	6	5x3x1 Mt	-	96	0.50	3.00	To provide passage for proper flow of water and to conserve soil and increase in bio mass
Total								**543**		**36.50**	
Available fund								**407**		**27.35**	

Convergence	**136**		**9.15**	

MICRO WATERSHED WISE ACTIVITIES UNDER IWMP (56%)

Table 8:Name of Project: IWMP- I Watershed: Meham/Lakhan Majra Name of Village: Bhaini Maharaj pur

Sr. No.	Nature of Work	Location			Physical				Unit Cost (Rs. In Lacs)	Estimated Cost (Rs. In lacs)	Objective
		Name	Long.	Lat.	No.	Size	Submergence/ Pondage Area (sqm)	Catchment /benefitted area (Ha.)			
1	Deepening & Digging of Pond	1 Ghadwa Talab 2 Excavation of New pond(common Land)	76°15.017'' 76°15.017''	28°59'-269" 28°59'-269"	1 1	70x70x1 (m) 75x75x2 (m)	4900 11250	88 110	2.50 5.50	2.50 5.56	Enhancement of pondage capacity and improvement in ground water level
2	Retaining wall	Ghadwa Talab	76°15.017''	28°59'-269"	1	150 Mtr.	-	90	0.09 /M	14.00	Conservation of natural resources
3	Culverts	1 Badshahpur road 2Bainsi wala Rasta	76°14'-944" 76°15'-176"	29°00'-145" 28°59'-461"	3 3	5x3x1 Mt	-	85	0.50	3.00	To provide passage for proper flow of water and to conserve soil and increase in bio mass
4	Soil & moisture conservation works like Earthen bundh, Field bundh, RRWHS, PWC,Lining of WC,L.R.,Levelling * etc.	Earthen Bund from main Road to Fields	76°13'277''	29°00'-243"	1	625 m		37	400/m	2.50	
Total								**410**		**27.56**	
Available fund								**373**		**25.06**	
Convergence								**37**		**2.50**	

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Table 9:Name of Project: IWMP- I Watershed: Meham/Lakhan Majra Name of Village: Gugaheri

Sr. No.	Nature of Work	Location			Physical				Unit Cost (Rs. In Lacs)	Estimated Cost (Rs. In lacs)	Objective
		Name	Long.	Lat.	No.	Size	**Submergence/ Pondage Area (sqm)**	Catchment /benefitted area (Ha.)			
1	Deepening of pond	**1 Sayad wala pond** **2 Poad wala pond**	**76°'23'-916"** **76°24.040"**	**29°03'-145"** **29°03'-156"**	**1** **1**	**120x150x1** **90x120x1**	**18000** **10800**	**160**	**3.50**	**7.00**	**Enhancement of pondage capacity and improvement in ground water level**
2	**Retaining wall**	**Poad wala pond**	**76°24.040"**	**29°03'-156"**	**1**	**120 m**	**-**	**63**	**9000 /m**	**10.80**	**Conservation of natural resources**
3	**Water conveyance system**	**Meham miner to Boaster**	**76°23'-971"**	**29°'03'-474"**	**1**	**2500 M**	**-**	**290**	**500 /m**	**12.50**	**To enhance efficiency of available water to provide drinking water for live stock**
4	**Ramp**	**Poad wala pond**	**76°24.040"**	**29°03'-156"**	**1**	**50x20m**			**2.70 /**	**2.70**	**To conserve natural resources**
5	**Soil & moisture conservation works like Earthen bundh, Field bundh, RRWHS, PWC,Lining of WC,L.R.,Levelling * etc.**	**RWHS in Hanuman Mandir**	**76°24'-905"**	**29°03'-063"**	**1**	**20x10**	-		**1.50**	**1.50**	**Conservation of natural resources and to protect flood hazards**
Total								**513**		**34.50**	
Available fund								**410**		**27.55**	
Convergence								**103**		**6.95**	

***Before executing detail topographic survey and assessment must be carried out before implementation.**

Table 10:Name of Project: IWMP- I Watershed: Meham/Lakhan Majra Name of Village: Girawar

Sr. No.	Nature of Work	Location			Physical				Unit Cost (Rs. In Lacs)	Estimated Cost (Rs. In lacs)	Objective
		Name	Long.	Lat.	No.	Size	Submergence/ Pondage Area (sqm)	Catchment /benefitted area (Ha.)			
1	Deepening of pond	1 Iccha wala pond 2 Pyabla pond 3 Mannuwala pond	76°27'-869" 76°28'-268" 76°28'-412"	28°59'647" 28°58'812" 28°59'978"	1 1 1	90x60x1 120x120x1 100x100x1	5400 1440 10000	253	3.00	10.00	Enhancement of pondage capacity and improvement in ground water level
2	Draining Measures	Madina B. Stand to Main B.stand(open channel)	76°27'-189"	28°58'-969"	1	270 m	-	80	1500 mt	4.00	Conservation of natural resources
3	Retaining wall	Pyabla pond	76°28'-268"	28°58'812"	1	150 Mtr.	-	52	0.09 /M	13.50	Conservation of natural resources
4	Water conveyance system	Kahanaur Minor to Bada Talab(UGPL)	76°27'-593"	28°59'-045"	1	2500 Mtr	-	210	500 /M	12.50	To enhance efficiency of available water to provide drinking water for live stock
Total								**595**		**40.00**	
Available fund								**547**		**36.75**	
Convergence								**48**		**3.25**	

Table 11:Name of Project: IWMP- I Watershed: Meham/Lakhan Majra Name of Village: Farmana Khas-Seman

Sr. No.	Nature of Work	Location			Physical				Unit Cost (Rs. In Lacs)	Estimated Cost (Rs. In lacs)	Objective
		Name	Long.	Lat.	No.	Size	**Submergence/ Pondage Area (sqm)**	Catchment /benefitted area (Ha.)			
1	Deepening & Digging of new pond	**1 Seemalya pond** **2 Baba wala pond** **3 Sangh wala pond** **4 Excavation of New Pond(common Land)**	**76°’16’-907”** **76°16.633”** **76°15.654”** **76°17.249”**	**29°02’-163”** **29°02’-238”** **29°02’.452”** **29°02’.463”**	**1** **1** **1** **1**	**120x60x1** **90x90x1** **90x90x1** **120x120x2**	**7200** **8100** **8100** **14400**	**160** **90**	**3.90** **7.20**	**11.70** **7.20**	**Enhancement of pondage capacity and improvement in ground water level**
3	**Water conveyance system(UGPL)**	**1 Juhi Minor to Dulchi wala Pond** **2 Juhi Minor to Singha wala**	**76°15.509”** **76°15.351”**	**29°’03’-251”** **29°’02’-930’’**	**1** **1**	**1080 M** **1500**	**-**	**110**	**500 /m**	**12.90**	**To enhance efficiency of available water to provide drinking water for live stock**
4	**Ramp**	**Seemalya pond**	**76°’16’-907”**	**29°02’-163”**	**1**	**20x15 m**		**40**	**2.33 /**	**2.33**	**To conserve natural resources**
5	**Soil & moisture conservation works like Earthen bundh, Field bundh, RRWHS, PWC,Lining of WC,L.R.,Levelling * etc.**	**1Earthen Bund Dulchi wala Rasta** **2 Earthen Bund Singha wala Rasta**	**76°15.509”** **76°16.345”**	**29°’03’-251”** **29°’02’-461’’**	**1** **1**	**840x5x.50** **1200x5x.50**	**-**	**147**	**1.05** **1.50**	**1.05** **1.50**	**Conservation of natural resources and to protect flood hazards**
Total								**547**		**36.68**	
Available fund								**547**		**36.68**	
Convergence								**-**		**Nil**	

***Before executing detail topographic survey and assessment must be carried out before implementation.**

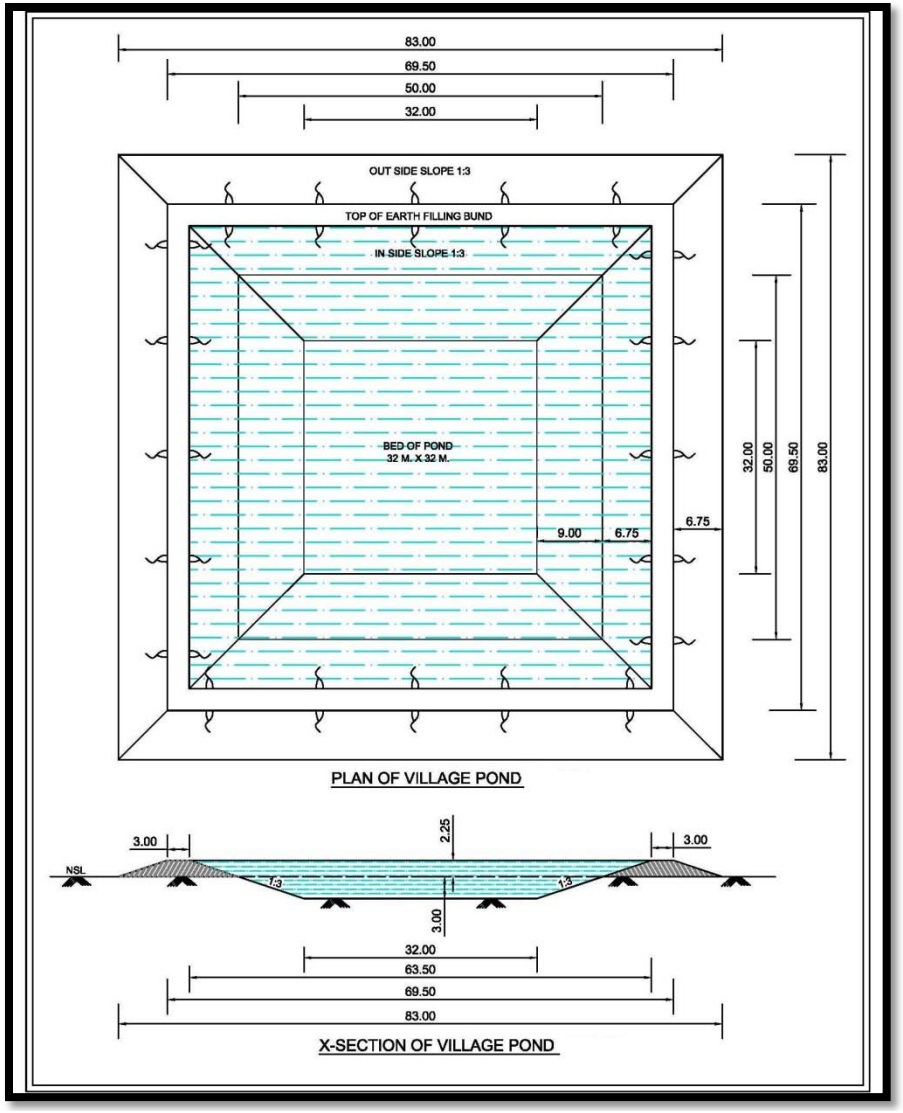
Cost Sharing: During the PRA exercise and meeting with the stake holders from time to time, the beneficiaries agreed to contribute in form of material, labour and cash to 10% of structure cost. The watershed development funds and pattern of utilization would be decided by the UGs/ WDT and PIA during implementation programme.

Table. 12. Detailed estimate of Pond

Detail Estimate of village Pond						
	Volume of Pond	=	A+AB+C x D			
			6			
		=	(50x50)+4(41x41)+(32x32)		X 3.00	
			6			
		=	5124 cum			
	Volume of Stone Pitching	=	Area X Depth/ Height			
		=	3824 X 0.15			
		=	423.60 cum			
			or say - 1461.55 cft.			
Leads Statement						
	Horizontal Leads	=	(length/2) +(cross section area/2 x 0.60)			
		=	80/2 + {(16.50 + 3)/2 x 2.25}/2 x0.60			
		=	61.94 mtr.			
	Vertical Leads	=	(Depth + Height) x 0.4 x 10			
		=	21.00 mtr.			
	Total Leads	=	{(61.94 + 21.00) - 15.00}/7.5			
		=	9 Leads			

Table. 13. Abstract of cost of estimate for Digging Village Pond

S.No.	Particulars	H.S.R. No.	Quantity	Rates	Unit	Amount
1	Excavation of earth work for digging of the vill. Pond	6.2 (b)	5124.00	2243.75	100 cum	114969.75
2	Extra for every 7.50 mtr. Additional lead upto 60 mtr. For 6 No. leads	6.2 (c')(i)	5124.00	496.29	100 cum	25429.90
3	Extra for admixture of shingle or Kanker upto 30%-40%		5124.00	1218.45	100 cum	62433.38
4	Extra for compaction in 25 cm layers but excluding rolling	6.2 (g_(i)	5124.00	260.48	100 cum	13347.00
5	Extra for watering in 25 cm layers as per specifications for compaction	6.2 (g_(ii)	5124.00	286.88	100 cum	14699.73
6	Extra for rolling in 25 cm layers as per specifications by sheep foot roller	6.2 (g)(v)	5124.00	401.62	100 cum	20579.01
					Total	**251458.76**
					Add. Contigency @2%	**5029.1753**
					Grand Total	**256487.94**
					Or say `	**2.60 Lac**


83.00
69.50
50.00
32.00
OUT SIDE SLOPE 1:3
TOP OF EARTH FILLING BUND
IN SIDE SLOPE 1:3
BED OF POND
32 M. X 32 M.
9.00
6.75
6.75
32.00
50.00
69.50
83.00
PLAN OF VILLAGE POND
3.00
NSL
1:3
1:3
2.25
3.00
3.00
32.00
63.50
69.50
83.00
X-SECTION OF VILLAGE POND

Estimate of Under Ground Pipeline

Length of U.G.P.L. :- 800.00 m.
Bed Width :- 0.45 m.
Top Width :- 0.95 m.
Maximum Depth :- 1.00 m.
Cost of Project :- 4,28,000

Sr. No.	Particular	No.	Length (m.)	Breadth (m.)	Depth (m.)	Unit	Content
1	Clearing Jungle including up rooting and vegitation grass buresh wood, Trees removed of rubbish up to distance of SOM out side the periphery of the area cleured H.S.R.-6.26	1	600	2.50	-	Sq.m.	1500.00
2	Excavaton on for pipe line ruming under prosur in open area H.S.R. - 6.8	1	800	$\frac{0.95 + 0.45}{2}$	1.00	Sq.m.	60.00
3	Less partion of road under ground pipe line hole (Kalanour to Beri Road)	1	16	$\frac{0.95 + 0.45}{2}$	1.00	Sq.m.	11.20
4	Laying out 200mm. HDPE pipe I.S.I marked H.S.R. - 28.7	1	800				
5	Jointing og 200mm. HDPE pipe I.S.I. marked H.S.R.- 28.8	1	132				

Abstract of Cost

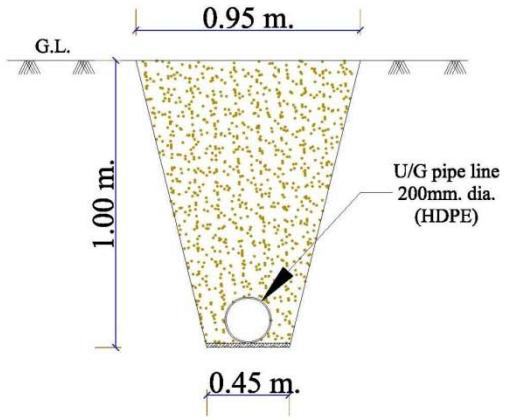
Sr. No.	Particular	Qty.	Rate	Unit	Amount
1	Clearing Jungle including uprooting and vegitation grass buresh wood, Trees removed of rubbish up to distance of SOM outside the periphery of the area cleured H.S.R.-6.26	1500.00	66.80-21.5% + 370% = 246.46	Per 100 Sq.m.	3696.90
2	Excavaton on for pipe line ruming under prosur in open area H.S.R. - 6.8	548.80	1030-21.5% + 370% = 3800.18	Per 100 Sq.m.	20855.39
3	Under Ground hole for cross the U.G.P.L. uner road	16.00	600.00	Per m.	9600.00
4	Laying out 200mm. Pipe HDPE ISI marked H.S.R.- 28.7	800.00	24.60 - 21.5% + 300% = 77.24	Per 10 Sq.m.	6179.20
5	Jaintng of 200mm. HDPE pipe ISI H.S.R.- 28.8	132.00	9.15 -21.5% + 300% = 28.73	Per Jart.	3792.36
			Total (1)		**44123.85**

Cost of Metrial:-

		Qty.	Rate	Amount
I.	Cost of HDPE pipe 200mm. Dia.	142.00	2598.00	368916
II.	Cost of bed 200mm. Dia.	4.00	650.00	2600
III.	Cost of P.C.N.-9	1.00	1200.00	1200
IV.	Cost of air realaas valve	1.00	1440.00	1440
V.	Cost of end C/P	2.00	450.00	900
		Total (2)		**375056.00**

Grand Total (1+2)	**419179.85**
Add 2% Contingency	**8383.596957**
Total	**427563.44**
Say	**4,28,000.00**

Under Ground Pipe Line HDPE 200mm. dia.



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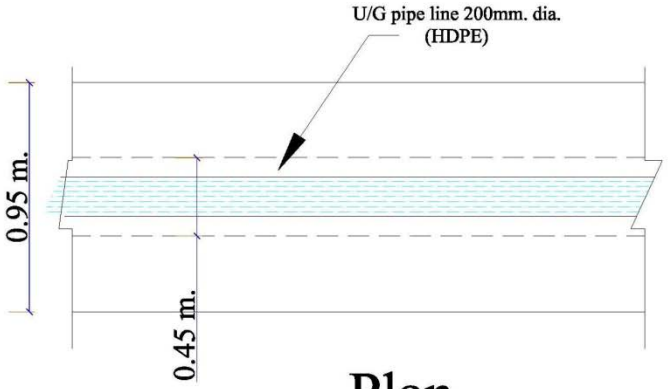

Plan

A. Horticulture

Sr. No.	Particulars	Quantity	Unit	Rate	Amount
1	Soil working 1m x 1m x 1m size pits (390 Nos.) including cost of refilling(At the distance 15'x15')	390.00	cum	36.66	14297.40
2	Application of Farmyard Manure, including cost			L.S.	750.00
3	Cost of fertiliser/ pesticide @250gm/plant			L.S.	750.00
4	Cost of pl ants (including 15% et c. f or mortality) i ncluding transportation and planting	450.00	Nos.	15/Plant	6750.00
5	Casualty replacement @ 10% of item No. 4 & 5				465.00
6	Cost of 2 weedings and hoeing			1.00/Pant	540.00
7	Contingency and unforeseen (3%)				492.00
				Total	**24044.40**
				Say `	**24000.00**
	Maintenance cost 2nd year			**L.S.**	**1000.00**
	For next 5 years i.e. , ` 1000 x 5				**5000.00**
				Total	**30000.00**
				Say `	**30000.00**

Estimate of Orchard Development in the Watersheds Per Hectare (Guava ,Amla & Ber)

A. Horticulture

Sr. No.	Particulars	Quantity	Unit	Rate	Amount
1	Soil working 1m x 1m x 1m size pits (225 Nos.) including cost of refilling(At the distance 20'x20')	225.00	cum	36.66	8248.50
2	Application of Farmyard Manure, including cost			L.S.	450.00
3	Cost of fertiliser/ pesticide @250gm/plant			L.S.	450.00
4	Cost of plants (including 15% etc. for mortality) including transportation and planting	260.00	Nos.	30/Plant	7800.00
5	Casualty replacement @ 10% of item No. 4 & 5				465.00
6	Cost of 2 weedings and hoeing			1.00/Pant	540.00
7	Contingency and unforeseen (3%)				492.00
				Total	**18445.50**
				Say `	**18500.00**
8	Maintenance cost 2nd year			L.S.	**1000.00**
	For next 5 years i.e. , ` 1000 x 5				**5000.00**
				Total	**24500.00**
				Say `	**24500.00**

Table. 14. Estimate of Agro- Forestry/ Afforestation

Plantation Model						
Cost statement of 1 Ha. Of activities of Plantation for 1st year (wage rate Rs. 94.13/-)						
Sr. No.	**Item of work**	**Unit**	**Qty.**	**SOR**	**Man days**	**Cost**
B	**Nursery**					
i	Raising of Plants in nursery	Nos.	660	18	5601.00	**11880.00**
C	**Carriage**					
i	Loading/ Unloading of plants up to 100 mtr.	Nos.	605	21.18	1.36	128.139
ii	Multistage carriage of plants					
a)	By tractor up to 10 km.	Nos.	605	18.83	12.10	1139.22
c)	By manual labour in plantation area	Nos.	605	42.36	2.72	256.28
					Total	**1523.63**
D	**Planting**					
ii	Soil working for patch sowing	M3	31.25	61.18	20.31	1911.88
	500 x 0.50 x 0.50 x 0.25					
iii	Planting of seeding including 10% replacement 20 x 30 cm.	Nos.	550	188.26	10.99	1035.43
					Total	**2947.31**
E	**Cultural operations & chemical treatment**					
i	Fertilizer application	Nos.	500	9.41	0.50	47.05
ii	Insecticide application	Nos.	500	9.41	0.50	47.05
iii	First Weeding & hoeing	Nos.	500	141.2	7.5	706.00

vi	Subsequent weeding & hoeing two time	Nos.	1000	94.13	10.00	941.30
					Total	**1741.40**

G	**Material**					
ii	Spade and pick axes	----	----	----	----	135.00
iii	Basket/Bucket	----	----	----	----	135.00
v	Fertilizer	----	----	----	----	135.00
vi	Insecticide	----	----	----	----	270.00
					Total	**675.00**

	G. Total =	**18767.34**
	or Say =	**18767.00**

PRODUCTION SYSTEM- 10%

7.3 PRODUCTION SYSTEM

7.3.1 Crop Production

Present Status: Agriculture is the mainstay of the inhabitants of the project area which is mainly rain-fed and people gamble with the uncertain rains. The fertility of the soil is very poor especially in nitrogen and phosphorous because the organic carbon contained in the soil is very low and the available potash in the soil is medium (fertility map attached in annexure VI). Wheat and Bajra are the main crops. Due to frequent droughts, crop failures are common, and yield levels are low. Farmers maintain fodder plants on the field bunds. Because of extensive damage by wildlife, farmers are gradually shifting towards tree farming and dairy farming. But there is acute shortage of green and dry fodder. Still traditional farm practices are followed such as manual weeding and hoeing, use of desi ploughs and bullock power in tillage operations. The use of chemical fertilizer is limited to urea upto 50 Kg/acre in maize and wheat. Only farm yard manure is added to maintain yield levels. Food grains are hardly sufficient for 6 to 8 months with small farmers.

Scope of Improvement: There appears tremendous scope in improving production systems of the project area. The following practices are suggested for better harvests.

- Conservation farming concept based on getting highest yield per drop of water shall be introduced.
- This would also include better tillage practices for in-situ rain water conservation.
- Weather elated contingent crop planning shall be introduced to reduce the impact of droughts.
- The varieties of wheat are old and shall be replaced with latest varieties.
- There is a good scope of introducing hybrid varieties of bajra. Intercropping of moong and urad is suggested with bajra.
- The application of fertilizers on soil test basis and minimum use of chemicals for weed and disease control shall be promoted.

- Farmers would be linked to farm advisory services and Krishi Vigyan Kendras.
- The concept of precision farming and non-monetary inputs shall be introduced.
- Agro-forestry with integration of trees like Eucalyptus, Neem, Acacia, Shisham would be promoted on large scale.
- Leguminous crops mainly Moong and mash short duration varieties needs to be introduced

7.3.2 Horticulture

Existing System: Ber, amla and guava are the most preferred fruit crop of the farmers and scattered plants of local citrus fruits are seen in farm lands. Some farmers have started raising Guava and Kinnow where irrigation facilities are available. Citrus fruits also raised but mostly for domestic use. There is no well organized marketing system in fruit plants.
Proposed System: The average annual rainfall is 376 mm in the project area. The project areas are well connected by roads and the economic condition of the locals can be improved by introducing improved cultural practices of fruit plants coupled with rain water harvesting and efficient use of water. Large number of farmers are interested to increase area under Guava and Kinnow and requested for supply of good quality nursery raised plants. Several families have shown interest in raising Citrus fruits and amla. The following activities are proposed to promote horticulture in the area.

- Supply of quality seedlings arranged from approved nurseries as per choice of farmers.
- Soil testing up to a depth of 180 cm depth to ensure suitability of soil for fruit plants.
- Proper back up technical support on orchard management by involving HAU Farm Advisory Service and department of horticulture.
- Appropriate safeguards from wildlife damage, frost damage and wind breaks.
- Arrangements for limited irrigation at least for first few years.
- Proper planning for raising filler plants like Papaya, pomegranate and shade loving crop like turmeric.
- Organizing SHGs around horticulture and joint purchase of inputs and marketing

7.3.3 Vegetable cultivation

Present status: Vegetable cultivation as such for market purpose is not followed mainly because of the limitation of irrigation facilities. Most farmers raise vegetable crops in back yards for self use. Some poly houses have come up in the area with financial support from National Horticulture Mission (NHM) and have started commercial cultivation of off season vegetables with the introduction of NHM scheme the farmers are interested for drip/sprinkler irrigation to enhance the net production value of the farm.

7.3.4 Promotion of Farm Forestry and Agro-forestry

Most of the privately owned non-arable the area is under mix of trees and bushes. Lantana and parthenium, the most obnoxious weeds have invaded such area.

The following interventions are proposed to popularize agro-forestry as an alternate source of income.

- Planting of improved verity of Eucalyptus and Neem in the project both as single rows on field bunds and also as blocks.

7.3.5 Livestock Improvement Including Fodder Production

Livestock rearing is the most important subsidiary occupation of the project villagers. In addition to selling milk for regular daily income, farm yard manure is most needed to maintain fertility and moisture retention of soils. Even landless families also maintain few numbers of animals. The animal breed improvement work was initiated in these villages under Arravali, DDP, DPAP projects and it is a regular program of the Animal Husbandry Department. However, the availability of animal health services at the door step is grossly lacking. The programs proposed under the project for livestock improvement include:

- In order to promote animal health care camps shall be organized and medicines for de-worming, mineral mixture shall be supplied in addition to awareness generation about prevention of animal diseases.
- Provision of quality seed of fodder crops and demonstration.
- Rising of protein rich fodder plants by promoting Napier Bajra Hybrid and Leucaena hedge rows on field bunds.

7.3.6 Marketing Arrangements and Proposal for Improvement

There is no organized system of marketing although market surplus is limited. The marketing of Wheat, Mustard and Bajra is not a problem because of fixed prices and government controlled procurement system. There is no organized system of marketing of vegetables, fruits and milk though these are source of income with many families.

The efforts through the project are directed towards diversification of agriculture to include fruit and vegetable crops and dairy development. The transfer of area to these high value crops would depend on development of irrigation facilities, facilitation in input supplies, transfer of production technology, easy credit and market linkages. Efforts have been made to reactivate the non-functional SHGs and UGs. New watershed committees have been formed in each village. Farmers have shown interest in joint management of resources and join hands for processing, value addition and marketing.

Fortunately, the involvement of Rural Development Department means regular interaction with the district administration whose good offices would be used to involve rural banking institutions in funding support for SHGs, User Groups and other interest groups.

7.3.7 Detail of production system to be promoted

Based on the discussions during PRA, the scope of production systems was worked out and as per the provision of funds @ 10% of the budget, the following activities were finalized.

Table 11.Detail of Production System proposed to be promoted in the project village

S. No.	Particulars	Contents	No. of micro watersheds	No. of beneficiaries per micro watershed	No. of total beneficiaries	Cost per beneficiaries	Total
1	Vermi Compost	Vermi compost is organic matter that is decomposed and recycled, used as fertilizer for soil amendment which is a key ingredient in organic farming. Under IWMP, financial assistance of 25% of total cost of Rs. 24000/- is provided.	13	25	325	6000	1950000
2	Green Manuring	Addition of organic matter required, which is deficient in project area. Under IWMP, financial assistance @ Rs. 500 for 20 Kg.s per farmer for 2 Acre (0.8 ha) holding is provided.	13	200	2600	500	1300000
3	Bio-fertilizers	For integrated nutrient management (combination of chemical fertilizers, organic manure, crop residue and nitrogen fixing. Under IWMP, financial assistance @ Rs. 40 per packet/ per farmer for 2 Acre (0.8 ha) holding is provided.	13	200	2600	40	104000
4	Pest-Management	For integrated pest Management, the bio control technique has been reported eco-friendly for control of pests. A provision of Azadirachtin bio pesticide @ Rs. 250/lit. per farmer is provided.	13	200	2600	250	650000

S. No.	Particulars	Contents	No. of micro watersheds	No. of beneficiaries per micro watershed	No. of total beneficiaries	Cost per beneficiaries	Total
5	Sprinkler irrigation	Sprinkler irrigation is a method of applying irrigation water which is similar to natural rainfall. Under IWMP, financial assistance @ 25% of Rs. 30000/- or price fixed by agriculture department is provided.	13	10	130	7500	975000
6	Drip Irrigation	Drip Irrigation is an irrigation method that saves water and fertilizer by allowing water to drip slowly to the roots of plants. Under IWMP, financial assistance @ 10% of Rs. 58000 per ha for horticulture fixed by Agriculture Department is provided.	13	10	130	5800	754000
7	Lazer Leveling	Lazer Leveling is one such proven technology that is highly useful in conversation of irrigation water. Under IWMP, financial assistance @ 30% of Rs. 1075 per farmer is provided	13	200	2600	322.5	838500
8	Kitchen Gardening	To facilitate with inputs, seeds and equipments etc., for development of Kitchen Gardening. Under IWMP, financial assistance @ Rs. 50 per farmer per season (Rs. 100 per year) is provided.	13	185	2405	100	240500

S. No.	Particulars	Contents	No. of micro watersheds	No. of beneficiaries per micro watershed	No. of total beneficiaries	Cost per beneficiaries	Total
9	Horticulture	Potential for Grafted Horticulture plants. Supply of plants @ Rs. 40/- per plant under IWMP 50 % cost share for cultivation of fruits like Citrus fruits, Guava, Amla, Ber floriculture and vegetables (especially, turmeric, garlic, onion and tomato)	13	275 .	3575(35750 plants)	Rs.20 per plant	715000
Total							**7527000**
Contingency							**77400**

Total: Rs. 7604400/-

The provision of additional subsidy component under IWMP would be utilized by linking with the line department.

Note. The development of Horticulture, Animal Husbandry and Agro forestry has limited scope because of scattered & small land holding, wild life problems and drought conditions. The National Horticulture Mission has already implementing various schemes in the project area. The beneficiaries are taking advantages under their ongoing schemes.

In order to manage the fodder scarcity the latest rain fed varieties of fodder crop will be introduced on the recommendation of experts of Haryana Agriculture University and Central Soil and Water Conservation Research Institute, Chandigarh. Necessary provision for organizing the various training programme/exposure vis its has been provided in the Capacity Building activity.

Under Agro forestry, tree species commonly planted are eucalyptus and neem. The impacts of such type's plantation have given extra source of income.

7.3.8. Vermin Compost

The vermin compost is one of the very useful organic manure. The vermin compost prepared by induction of various types worms (Earth Worm), to de co mpost and c onverted from r aw ani mal dun g to w ell d e compost hi ghly nutritive or ganic manure.

One of the important occupations of villagers is the animal husbandry. At present, the animal wastes are not being used by the villagers. This waste can be utilized as vermin- compost on the farm where the productivity and physical condition of the soil can be increased manifold. The animal waste can be used for preparation of vermin- compost. The ava ilable nutrients in vermin- compost are higher than country type farmyard manure. As per NHM guideline, the installation cost of structure of 1 vemin compost unit (size) 500 Sq. ft., the total cost of the unit would be is Rs. 60000/-. Out of this the 50% subsidy i.e. Rs.30000/- is met from the ongoi ng programme of horticulture depar tment. The addi tional am ount i .e. Rs. 10000/- will be born under IWMP Programme. The nutrition value of vermin compost is more than Farm Yard Manure and compost i.e. nitrogen- 1.2 to 1.6%, Phosphorous 1.5 to 1.8%, Potash 1.2 to 2% are just double.

Table 12: Model/ Estimate for a Vermin Compost Unit

Sr. No	Component	Expenditure to be incurred
1	Construction of shed of size 500 Sq. ft.@ Rs. 100 per Sq. ft. with pacca floor, beds and coverings etc.	50000/-
2	Cost on breeding material and purchase of worms etc.	8000/-
3	Tools and equipments etc.	2000/-
	Total	**60000/-**

Components of Vermin Compost Unit

1. **Shed**

Due to the high temperature in summer, shed structure is needed for vermin compost unit. It can be made by use of bricks/ concrete pillars. While designing the shed adequate room has to be left around the beds for easy movements of labours attending to the filling and harvesting the beds.

2. **Vermin- beds**

Scientific bed side depending upon the provision of filtered for drainage of excess water is prepared of about 75- 90 cm thick. The whole bed should be above the ground, the proper bed width to be not more than 1.5 m to allow easy access to the centre of the bed is constructed.

3. **Land**

About 125 sq. m. land is required to set up the vermin compost production. It should have 2- 3 sheds each of 180- 200 sq. ft. Good watering arrangement is required as the moisture is very essential for vermin compost production.

4. **Seed Stock**

This is important because worms multiply at the rate of 350 worms per cubic meter of bed space over a period of six months in a year.

5. **Machinery**

Farm machinery and implements are required for cutting the raw material in small pieces, conveying shredded raw material to the out sheds, loading, unloading, collection of compost, loosening of beds for aeration, shifting of the compost. Costs of providing necessary implements and the machinery have to be included in the project cost.

LIVELIHOOD ACTIVITIES FOR THE ASSET LESS PERSONS-9%

7.4 LIVELIHOOD SUPPORT TO SHG'S

The key issue of inclusion of this chapter is that about 80% of the population in the proposed villages depends on agriculture and allied activities, but it rarely provides sufficient means of survival to small and marginal farmers. During the base line survey, this aspect was discussed with the existing Self Help Group/ Gram Sabha members. The representative of WAPCOS, Sociologist of the team held comprehensive discussions on the possibilities of livelihood in the rain fed areas. The main objectives of these discussions were:

1. Assure one livelihood option to poor families.
2. Assured livelihood for at least 300 days in a year including MGNREGA.
3. At least one daily job per family mainly SCs/BPL/very poor families.

SHGs would be imparted Skill Training on HSRLM pattern and it is proposed to impart them trainings at Krishi Vigyan Kender (CCSHAU) Rohtak and Haryana Institute of rural development, Nilokheri. Agriculture University, Rohtak, Central Soil and Water research and training Institute, Chandigarh and HIRD, Nilokheri. It is proposed to lend revolving fund of Rs. 25000/- to each SHG/individual formed in the watershed villages. Since the members from SHGs/landless are very poor, they do not have resources to start micro enterprises, it is envisaged that they should be assisted and given loan of this amount in the shape of Revolving Fund Assistance (RFP) so that do not get trapped by money lenders. Funds thus given on loan are recoverable from SHGs/individuals in easy installments. It is also proposed to impart skill training to at least 10 unemployed youth from each village and give them trainings of their choice so that they establish some small enterprises. It is further proposed to give them interest free loan of Rs. 12000/- each as Revolving Fund Assistance to meet their urgent needs of funds for establishing micro enterprises. Such funds recovered could either be given back to SHGs/individual or some other SHGs/individuals depending upon assessment of their respective needs. It is proposed to

form 2 SHGs in each village and identify at least 10 youths in each village for imparting training and giving Revolving Fund.

The scheme would be implemented in phased manner in the project area and the project implementation agency will co-ordinate with the Community Resource Persons(CRP) already posted at the grass root level under Haryana State Rural Livelihood Mission(HSRLM). The SHG should follow five Sutras i.e.

1. Regular Meetings
2. Financial saving in the meetings
3. Internal Lending
4. Regular Recovery.
5. Proper maintenance of Account books.

Based on the above five Sutras, grading of SHG should be done.

The following activities are proposed in consultation with the Watershed committees.

7.4.1 Activities those are likely to be taken up by SHGs/individuals

1. Cutting and Tailoring
2. Embroidery
3. Mushroom cultivation
4. Plumbing
5. Carpentry
6. Bee keeping

7. Animal husbandry
8. Vermi composting
9. Cattle rearing and selling milk
10. Household wiring, Motor winding
11. Pickles, sauces, jam, jelly etc.
12. Backyard poultry
13. Floriculture

The details of funds proposed to be utilized under this component are as under:

Table 13. Revolving Fund Assistance for SHGs

S.No.	Name of micro watersheds	No. of villages	Total SHGs	Amount of RFA per SHG	Total
1	Bedwa	1	2	25000	50000
2	Bhaini Chanderpa	1	2	25000	50000
3	Bhaini Maharajpur	1	2	25000	50000
4	Farmana Khas	1	2	25000	50000
5	Farmana Badshahpur	1	2	25000	50000
6	Bhaini Surjan A	1	2	25000	50000
7	Bhaini Surjan B	1	2	25000	50000
8	Madina Gindhran	1	2	25000	50000
9	Bainsi A	1	2	25000	50000
10	Bainsi B	1	2	25000	50000
11	Girawar	1	2	25000	50000
12	Guga Heri	1	2	25000	50000

13	Kishangarh (Kheri Meham)	1	2	25000	50000
	Total	**13**	**26**		**650000**

Table 14. Skill Trainings/Skill up gradation for SHGs

S.No.	Name of micro watersheds	No. of villages	Total SHGs	Amount of Training per SHG	Total
1	Bedwa	1	2	35000	70000
2	Bhaini Chanderpa	1	2	35000	70000
3	Bhaini Maharajpur	1	2	35000	70000
4	Farmana Khas	1	2	35000	70000
5	Farmana Badshahpur	1	2	35000	70000
6	Bhaini Surjan A	1	2	35000	70000
7	Bhaini Surjan B	1	2	35000	70000
8	Madina Gindhran	1	2	35000	70000
9	Bainsi A	1	2	35000	70000
10	Bainsi B	1	2	35000	70000
11	Girawar	1	2	35000	70000
12	Guga Heri	1	2	35000	70000
13	Kishangarh (Kheri Meham)	1	2	35000	70000
	Total	**13**	**26**		**910000**

Note: This training cost includes Travel, boarding/lodging, cost of training and faculty support for different discipline e.g. Bakery Product, Soap and detergent making, fisheries, Bee keeping, Vermi Compost, Domestic poultry, Mushroom cultivation, Plumbing, Carpentry, Food Processing, Animal Husbandry, Product Processing etc.

Table 15. Computer Training (6 months) for unemployed youth above 12th passed male and female both recommended by Watershed Development Committee

S.	Name of micro	No. of villages	No. of Persons in	Amount of Training per	Total

No.	watersheds		micro watershed	trainee for 6 month	
1	Bedwa	1	10	10000	100000
2	Bhaini Chanderpa	1	10	10000	100000
3	Bhaini Maharajpur	1	10	10000	100000
4	Farmana Khas	1	10	10000	100000
5	Farmana Badshahpur	1	10	10000	100000
6	Bhaini Surjan A	1	10	10000	100000
7	Bhaini Surjan B	1	10	10000	100000
8	Madina Gindhran	1	10	10000	100000
9	Bainsi A	1	10	10000	100000
10	Bainsi B	1	10	10000	100000
11	Girawar	1	10	10000	100000
12	Guga Heri	1	10	10000	100000
13	Kishangarh (Kheri Meham)	1	10	10000	100000
	Total	**13**	**130**		**1300000**

Note: The beneficiaries will contribute 10% as cost sharing of the livelihood support programme Rs. 1300000 @ 10% cost sharing.

= 1300000- 130000
= 1170000/-

Table 16. One time assistance as Revolving Fund to unemployed youth who have successfully completed Computer Training for setting up a computer centre

S. No.	Name of micro watersheds	No. of villages	No. of Persons in micro watershed	Amount of Training per Trainee	Total
1	Bedwa	1	5	25000	125000
2	Bhaini Chanderpa	1	5	25000	125000
3	Bhaini Maharajpur	1	5	25000	125000
4	Farmana Khas	1	5	25000	125000

5	Farmana Badshahpur	1	5	25000	125000
6	Bhaini Surjan A	1	5	25000	125000
7	Bhaini Surjan B	1	5	25000	125000
8	Madina Gindhran	1	5	25000	125000
9	Bainsi A	1	5	25000	125000
10	Bainsi B	1	5	25000	125000
11	Girawar	1	5	25000	125000
12	Guga Heri	1	5	25000	125000
13	Kishangarh (Kheri Meham)	1	5	25000	125000
	Total	**13**	**65**		**1625000**

Note: This training cost includes Travel, boarding/lodging, cost of training and faculty support.

Note: The beneficiaries will contribute 10% as cost sharing of the livelihood support programme Rs. 1625000 @ 10% cost sharing.

= 1625000- 162500
= 1462500/-

Table 17. Cutting and Tailoring Centre for female beneficiaries

S. No.	Name of micro watersheds	No. of villages	No. of centre's	Requirement for sewing machines per village (2 No.)	Payment to trainer per months	Period of training for each centre	Total payment to trainer
1	Bedwa	1	1	2	2000	6	12000
2	Bhaini Chanderpa	1	1	2	2000	6	12000
3	Bhaini Maharajpur	1	1	2	2000	6	12000
4	Farmana Khas	1	1	2	2000	6	12000
5	Farmana Badshahpur	1	1	2	2000	6	12000
6	Bhaini Surjan A	1	1	2	2000	6	12000

7	Bhaini Surjan B	1	1	2	2000	6	12000
8	Madina Gindhran	1	1	2	2000	6	12000
9	Bainsi A	1	1	2	2000	6	12000
10	Bainsi B	1	1	2	2000	6	12000
11	Girawar	1	1	2	2000	6	12000
12	Guga Heri	1	1	2	2000	6	12000
13	Kishangarh (Kheri Meham)	1	1	2	2000	6	12000
	Total	**13**	**13**	**26**			**156000**

Total cost for 5 Centres

1. Payment to trainers 156000/-

2. Sewing Machine Cost Rs. 156000/- @ Rs. 6000 per machine

Table 18. Embroidery Centre for female beneficiaries

S.No.	Name of micro watersheds	No. of villages	No. of centers	Payment to Trainer per Month	Period months	Payment to trainer for 6 months @ Rs. 2000 p.m	Total trainers	Grand Total
1	Bedwa	1	1	2000	6	12000	1	12000
2	Bhaini Chanderpa	1	1	2000	6	12000	1	12000
3	Bhaini Maharajpur	1	1	2000	6	12000	1	12000
4	Farmana Khas	1	1	2000	6	12000	1	12000
5	Farmana Badshahpur	1	1	2000	6	12000	1	12000
6	Bhaini Surjan A	1	1	2000	6	12000	1	12000
7	Bhaini Surjan B	1	1	2000	6	12000	1	12000
8	Madina Gindhran	1	1	2000	6	12000	1	12000
9	Bainsi A	1	1	2000	6	12000	1	12000
10	Bainsi B	1	1	2000	6	12000	1	12000
11	Girawar	1	1	2000	6	12000	1	12000

12	Guga Heri	1	1	2000	6	12000	1	12000
13	Kishangarh (Kheri Meham)	1	1	2000	6	12000	1	12000
	Total	**13**	**13**					**156000**

Total Cost:

Payment to trainer: Rs.156000/-

Cost of Machine: Rs. 260000/- @ Rs. 20000 per machine

Total: Rs. 416000/-

Table 19. Livelihood Support

S.No.	Name of micro watershed	No. of villages	Revolving fund assistance to individuals unemployed youth/ landless, women		
			Dairy Unit	Bee Keeping	Mushroom production
1	Bedwa	1	20	20	2
2	Bhaini Chanderpa	1	20	20	2
3	Bhaini Maharajpur	1	20	20	2
4	Farmana Khas	1	20	20	2
5	Farmana Badshahpur	1	20	20	2
6	Bhaini Surjan A	1	20	20	2
7	Bhaini Surjan B	1	20	20	2
8	Madina Gindhran	1	20	20	2
9	Bainsi A	1	20	20	2
10	Bainsi B	1	20	20	2
11	Girawar	1	20	20	2
12	Guga Heri	1	20	20	2
13	Kishangarh (Kheri Meham)	1	20	20	2
	Total	**13**	**260**	**260**	**26**
	Rate (Rs)		**2400**	**2400**	**24000**
	Cost (Lakh Rs)		**6.24**	**6.24**	**6.24**

Contingency, printing material and other unseen items: Rs. 51460/-

Total funds available under this component are Rs. 6843960/-

In addition to HAU, the following institutions are also identified for imparting trainings:

i. HIRD, Nilokheri
ii. Agriculture, Technology and Extension, Rohtak Agriculture University
iii. Central Soil and Water research and training Institute, Chandigarh
iv. Mushroom Training Centre, Sonipat and Solan
v. NIRD, Hyderabad
vi. Krishi Vigyan Kender (CCSHAU), Rohtak

There appears to be great potential for these activities and these activities are likely to generate income of Rs. 2000/- to Rs. 2500/- per member per month. However no activities would be forced upon on any SHGs and they would be free to decide the activity they would like to opt for their additional income. The PIA can take up the activities as per the need and approval of the Watershed Committee. Based on their choice, Project report for the specified activity would be prepared and revolving fund of Rs. 20000/ Rs. 25000/- per SHG would be given for running their respective micro enterprise. If need arises for more funds for their Income Generation Activities at later stage, they would be assisted in getting loan from banks. SHGs thus formed would be provided all possible assistance to uplift for their Socio- Economic conditions.

CONVERGENCE

7.5 INTRODUCTION

The National Rural Employment Guarantee Act (NREGA), notified on September 7, 2005, marked a paradigm shift from the previous wage employment programmes with its rights-based approach that makes the Government legally accountable for providing employment to those who demand it. The act aims at enhancing livelihood security households in rural areas of the country by providing at least one hundred days of guaranteed wage employment in a financial year to every household whose audit members volunteer to do unskilled manual work. Such Inter sectoral convergence becomes instrumental towards.

- Establishing synergy among different government programmes in planning and implementation to optimize use of public investments
- Enhancing economic opportunities
- Strengthening democratic Processes
- Mitigating the effects of Climate Change
- Creating conditions for sustainable development.
- One of the significant areas for convergence is the Watershed Management Programme of the Dept. of Land Resources (DoLR) in the Ministry of Rural Development (MoRD),
- Convergence is an evolving process and while broad principles can be laid out at the centre, the actual contours of convergence will be determined by the resources at the Central, State, District and the project level. Also, to

fully identify the possibilities of convergence, it may be necessary to make a beginning with select programmes, so that the experience of implementation may further inform and refine strategies for convergence.

7.5.1 Convergence between MGNREGA and Watershed Programmes

Most of the activities under watershed development are covered under MGNREGA and there is a need for convergence to meet gap in requirement under IWMP. The labour component would be met out of funds made available under MGNREGA. The village wise details of the fund requirement are exhibited below (table. 35)

Detail of Convergence of IWMP and other schemes

Table 20. GAPS IN FUNDS REQUIREMENT – MICRO WATERSHED WISE

S.No	Name of micro watershed	Total cost requirement for works	Total funds available under IWMP for works	Gap in funds requirement for works	Convergence with MGNREGA
1	Madina Gindran	45.5	42.67	2.83	2.83
2	Kishangarh	33.2	32.26	0.94	0.94
3	Bedwa	30.64	24.39	6.25	6.25
4	Bhaini Surjan	77.35	77.35	-	-
5	Bhaini Chanderpal	32	27.35	4.65	4.65
6	Bainsi	69.8	68.34	1.46	1.46
7	Farmana Badshahpur	36.5	27.35	9.15	9.15
8	Bhaini Maharajpur	27.56	25.06	2.5	2.5
9	Gugaheri	34.5	27.55	6.95	6.95
10	Girawar	40	36.75	3.25	3.25
11	Farmana Khas	36.68	36.68	-	-

	Total	**463.73**	**425.75**	**37.98**	**37.98**

- Under NREGA almost all the activities required for watershed development are permitted. Convergence between NREGA and Watershed Programmes of DoLR will be mutually beneficial for rain fed areas.

7.5.2 Non-Negotiable for works executed under MGNREGA

- Only Job Card holders to be employed for MGNREGA component.
- Muster rolls will be maintained on work site, with copies in the Gram Panchayat and to be electronically maintained on nrega.nic.in
- Wage payments will be through no-frills accounts in banks/post offices.

Need for Convergence: Since more than 56% of activities related to Watershed development are covered under MGNREGA, there is need for convergence to meet gap in Funds requirements under IWMP. Detailed survey had been conducted in Watershed villages and it has emerged that there is need for more funds to augment and strengthen the activities under IWMP. All five micro watersheds need more funds to meet the gap. Therefore, some of the works are proposed to be converged with MGNREGA. The labour component would be met out of funds made available under MGNREGA.

7.5.3 Convergence with Forest Department

The unit cost of agro- forestry component for 1 ha area (1100 plant) for plantation and other activity is Rs. 18767/-. The provision of Rs. 15000/- per ha has given in IWMP programme. The rest amount of Rs. 3767/- will be convergent from lined department from departmental schemes or MGNREGA.

7.5.4 Convergence with Horticulture Department

National Horticulture Mission is implementing the horticulture development programme which includes construction of water harvesting structures, drip and sprinkler irrigation activities which would be undertaken in convergence with the horticulture department. Under this activity 130 ha horticulture development programme with the financial assistance of Rs. 23.0 lakh has been provided in the project proposals. This would also be undertaken by convergence with the horticulture department.

7.5.5 Convergence with Agriculture Department

The activities under NRM like the Renovation and digging of percolation pond, Drainage measures, land development works, retaining wall, ramp and inlet of pond, water conveyance system, culverts, plantation, land leveling, bunding etc. where the machinery and material component is required and the unit cost exceeds for completion exceeds to the project provision, the same will be met in convergence with the similar activities of the agriculture.

7.5.6 Convergence with Animal Husbandry Department

The watershed falls in the water deficit conditions for production of fodder and depends upon the rain. The rainfall pattern is erratic. There is deficiency of green fodder and nutrients for the animals. The provision has been kept for providing mini kits for of life saving medicines/ mineral mixture, concentrate feed and fodder seeds. Since the provision of these kits is less than the required, hence this would be met with the lined department who has a provision under their ongoing programmes.

CHAPTER – 8

QUALITY AND SUSTAINABILITY

8.1 Monitoring and Evaluation

8.1.1 Plans for Monitoring and Evaluation:

Web based GIS system is being developed for Monitoring and Evaluation at various stages of project under progress and post project. The satellite imageries are also helpful in monitoring all activities of the watershed area (Pre project, during project and post project). All the details relating to Watershed Activities would be available on website. The system is very useful to know the progress of the project at the click of the button. The higher officials would be able to monitor the progress and could generate the desired reports. The system would also help beneficiaries to know the area of importance, already treated area/ area to be treated. The system would serve an aiding tool to the planners and evaluators for judging the efficacy of the project.

8.1.2 Monitoring

Regular Monitoring of the project will have to be carried out at each stage to monitor the progress of the project. Different streams of monitoring are proposed as under:

1. Internal Monitoring by PIA/ WCDC
2. Progress and Process monitoring
3. GIS/ On line Monitoring

4. Sustainability monitoring
5. Self Monitoring by communities
6. Social Audits
7. Independent and external monitoring

Monitoring of watershed related activities will be carried out after completion of each phase. 1% amount of the project is earmarked under this component. Micro Watershed wise details are given below:

Table 1. Micro Watershed wise details

S.no	Name of the Micro Watersheds	Effective Area	Total Cost	Monitoring 1%
1	Bedwa	363	43,56,000	43,560
2	Bhaini Chanderpal	407	48,84,000	48,840
3	Bhaini Maharajpur	373	44,76,000	44,760
4	Farmana Khas	547	65,64,000	65,640
5	Farmana Badshahpur	407	48,84,000	48,840
6	Bhaini Surjan A	499	59,88,000	59,880
7	Bhaini Surjan B	652	78,24,000	78,240
8	Madina Gindhran	635	76,20,000	76,200
9	Bainsi A	561	67,32,000	67,320
10	Bainsi B	456	54,72,000	54,720
11	Girawar	547	65,64,000	65,640
12	Guga Heri	410	49,20,000	49,200
13	Kishangarh	480	57,60,000	57,600

8.2 EVALUATION

Each evaluation will include physical, financial, and social audit of all work done. The objective of evaluation of the project is to assess the status of watershed related interventions in the project. The evaluation will be taken up in three stages of the project. The Evaluation will be done by agencies empanelled on SLNA.

1% amount of the project is earmarked under this component. Micro Watershed wise details were as under:

Table 2. Micro Watershed wise details

S.no	Name of the Micro Watersheds	Effective Area	Total Cost	Evaluation 1%
1	Bedwa	363	43,56,000	43,560
2	Bhaini Chanderpal	407	48,84,000	48,840
3	Bhaini Maharajpur	373	44,76,000	44,760
4	Farmana Khas	547	65,64,000	65,640
5	Farmana Badshahpur	407	48,84,000	48,840
6	Bhaini Surjan A	499	59,88,000	59,880
7	Bhaini Surjan B	652	78,24,000	78,240
8	Madina Gindhran	635	76,20,000	76,200
9	Bainsi A	561	67,32,000	67,320
10	Bainsi B	456	54,72,000	54,720
11	Girawar	547	65,64,000	65,640
12	Guga Heri	410	49,20,000	49,200
13	Kishangarh	480	57,60,000	57,600

CONSOLIDATION PHASE- 3 %

Consolidation Phase = Rs. 22, 81,320 /-

8.3 CONSOLIDATION PHASE

This is another important activity under the project. In this phase, the resources augmented and economic plans developed in Phase II are made the foundation to create new nature based, sustainable livelihoods and raise productivity levels. There needs to be some mechanism at Watershed Level for the following crucial Activities as detailed below:

I. Managing/upgrading of all activities taken up under the Project.

II. Preparation of Project completion report and

III. Documentation of success stories

IV. Management of proper utilization of WDF

V. Mechanism for Quality and sustainability issues under the Project.

VI. Mechanism for fixation and collection of User Charges.

VII. Consolidation of works

VIII. Building the capacity of community based organizations to carry out the new agenda – post project period.

IX. Intensification of farm production systems/off farm livelihoods

X. Project Management related aspects

To take up these activities, it is proposed In the DPR as under:

Name of Micro watershed: Bedwa

Table 3. Consolidated Phase

S. No	Type of activity	Amount earmarked (Rs. In lacs)

1	Managing/ upgrading of all activities taken up under the project	0.26
2	Preparation of Project completion report	0.07
3	Documentation of success stories	0.06
4	Management of proper utilization of WDF	0.20
5	Mechanism for quality and sustainability issues under the Project	0.06
6	Watershed activities	0.66

Total: 1.31 lacs

Name of Micro watershed: Bhaini Chanderpal

Table 4. Consolidated Phase

S. No	Type of activity	Amount earmarked (Rs. In lacs)
1	Managing/ upgrading of all activities taken up under the project	0.29
2	Preparation of Project completion report	0.08
3	Documentation of success stories	0.07
4	Management of proper utilization of WDF	0.22
5	Mechanism for quality and sustainability issues under the Project	0.07
6	Watershed activities	0.74

Total: 1.47 lacs

Name of Micro watershed: Bhaini Maharajpur

Table 5. Consolidated Phase

S. No	Type of activity	Amount earmarked (Rs. In lacs)
1	Managing/ upgrading of all activities taken up under the project	0.27
2	Preparation of Project completion report	0.07
3	Documentation of success stories	0.06

4	Management of proper utilization of WDF	0.20
5	Mechanism for quality and sustainability issues under the Project	0.07
6	Watershed activities	0.67

Total: 1.34 lacs

Name of Micro watershed: Farmana Khas

Table 6. Consolidated Phase

S. No	Type of activity	Amount earmarked (Rs. In lacs)
1	Managing/ upgrading of all activities taken up under the project	0.39
2	Preparation of Project completion report	0.10
3	Documentation of success stories	0.10
4	Management of proper utilization of WDF	0.29
5	Mechanism for quality and sustainability issues under the Project	0.10
6	Watershed activities	0.99

Total: 1.97 lacs

Name of Micro watershed: Farmana Badshahpur

Table 7. Consolidated Phase

S. No	Type of activity	Amount earmarked (Rs. In lacs)
1	Managing/ upgrading of all activities taken up under the project	0.29
2	Preparation of Project completion report	0.08
3	Documentation of success stories	0.07
4	Management of proper utilization of WDF	0.22

5	Mechanism for quality and sustainability issues under the Project	0.07
6	Watershed activities	0.74

Total: 1.47 lacs

Name of Micro watershed: Bhaini Surjan A

Table 8. Consolidated Phase

S. No	Type of activity	Amount earmarked (Rs. In lacs)
1	Managing/ upgrading of all activities taken up under the project	0.36
2	Preparation of Project completion report	0.09
3	Documentation of success stories	0.09
4	Management of proper utilization of WDF	0.27
5	Mechanism for quality and sustainability issues under the Project	0.09
6	Watershed activities	0.90

Total: 1.80 lacs

Name of Micro watershed: Bhaini Surjan B

Table 9. Consolidated Phase

S. No	Type of activity	Amount earmarked (Rs. In lacs)
1	Managing/ upgrading of all activities taken up under the project	0.47
2	Preparation of Project completion report	0.12
3	Documentation of success stories	0.12
4	Management of proper utilization of WDF	0.35
5	Mechanism for quality and sustainability issues under the Project	0.12

6	Watershed activities	1.17

Total: 2.35 lacs

Name of Micro watershed: Madina Gindhran

Table 10. Consolidated Phase

S. No	Type of activity	Amount earmarked (Rs. In lacs)
1	Managing/ upgrading of all activities taken up under the project	0.46
2	Preparation of Project completion report	0.12
3	Documentation of success stories	0.11
4	Management of proper utilization of WDF	0.34
5	Mechanism for quality and sustainability issues under the Project	0.11
6	Watershed activities	1.15

Total: 2.29 lacs

Name of Micro watershed: Bainsi A

Table 11. Consolidated Phase

S. No	Type of activity	Amount earmarked (Rs. In lacs)
1	Managing/ upgrading of all activities taken up under the project	0.41
2	Preparation of Project completion report	0.10
3	Documentation of success stories	0.10
4	Management of proper utilization of WDF	0.30
5	Mechanism for quality and sustainability issues under the Project	0.10
6	Watershed activities	1.01

Total: 2.02 lacs

Name of Micro watershed: Bainsi B

Table 12. Consolidated Phase

S. No	Type of activity	Amount earmarked (Rs. In lacs)
1	Managing/ upgrading of all activities taken up under the project	0.33
2	Preparation of Project completion report	0.08
3	Documentation of success stories	0.08
4	Management of proper utilization of WDF	0.25
5	Mechanism for quality and sustainability issues under the Project	0.08
6	Watershed activities	0.82

Total: 1.64 lacs

Name of Micro watershed: Girawar

Table 13. Consolidated Phase

S. No	Type of activity	Amount earmarked (Rs. In lacs)
1	Managing/ upgrading of all activities taken up under the project	0.39
2	Preparation of Project completion report	0.10
3	Documentation of success stories	0.10
4	Management of proper utilization of WDF	0.29
5	Mechanism for quality and sustainability issues under the Project	0.10
6	Watershed activities	0.99

Total: 1.97 lacs

Name of Micro watershed: Guga Heri

Table 14. Consolidated Phase

S. No	Type of activity	Amount earmarked (Rs. In lacs)
1	Managing/ upgrading of all activities taken up under the project	0.30
2	Preparation of Project completion report	0.07
3	Documentation of success stories	0.08
4	Management of proper utilization of WDF	0.22
5	Mechanism for quality and sustainability issues under the Project	0.07
6	Watershed activities	0.74

Total: 1.48 lacs

Name of Micro watershed: Kishangarh

Table 15. Consolidated Phase

S. No	Type of activity	Amount earmarked (Rs. In lacs)
1	Managing/ upgrading of all activities taken up under the project	0.35
2	Preparation of Project completion report	0.08
3	Documentation of success stories	0.09
4	Management of proper utilization of WDF	0.26
5	Mechanism for quality and sustainability issues under the Project	0.09
6	Watershed activities	0.86

Total: 1.73 lacs

As per the common guideline the management of developed natural resources would involve the following features:

- Improving the sustainability of various structures and equitable distribution. The watershed committee will fix the charges of water and the funds generated would be utilized O & M Structures. These users charges account will be maintained separately.
- Involvement of Gram Panchayat for repair, maintenance and protection of created structures.

CHAPTER – 9

EXPECTED OUTCOME

EXPECTED OUTCOMES

The effective area is 6337 ha and the Project Cost is Rs. 760.44 lacs covering micro watersheds and in all 13 villages. Benefits will be much more than the project cost as detailed below:

With the several interventions under IWMP I project such as Livelihood support, Farm production system, various types of activities relating to soil conservation measures for diversification of crops, Protection to field by constructing the structures etc, it is expected that these Watershed villages will gain a lot. This intervention will have multiple benefits available to communities in terms of employment, check in migration, improvement in water table, more area under agriculture and horticulture, check in soil loss and decrease in Flood and drought incidences, improvement in crop yield, milk yield, check in degradation of land etc. The benefits thus accrued would be short term and long term. With the judicious use of funds available under IWMP and with convergence from MGNREGA and other schemes of Departments, this project of Meham Watershed I will prove to be very beneficial in improving socio – economic status of people residing in Project villages.

Expected outcomes as mentioned above are given in the following tables:

9.1 EMPLOYMENT

Employment has always been a problem in the village. The principal occupations of the people are rain fed agriculture, animal husbandry and casual labour work. However, rainfall being limited and erratic, agriculture suffers. Similarly due to lack of fodder animal husbandry does not keep them engage full time. Thus the people mainly depend upon casual labour either in the villages is in Rohtak Industrial Complex**.**

Table 1. Expected Employment Generation in the Project area

S. No.	Name of micro watershed	Wage employment								Self employment			
		No of man days				No. of Beneficiaries				No. of Beneficiaries			
		SC	ST	others	Total	SC	ST	others	Total	SC	Women	others	Total
1	Bedwa (part)	507	-	3396	3903	63	-	425	488	11	11	-	22
2	Bhaini Chanderpal (part)	880	-	3496	4376	110	-	437	547	11	-	11	22
3	Bhaini Maharajpur (part)	1015	-	2995	4010	127	-	374	501	-	11	11	22
4	Farmana Khas(part)	1541	-	4340	5881	193	-	543	735	-	11	11	22
5	Farmana Badshahpur (part)	989	-	3387	4376	124	-	423	547	11	-	11	22
6	Bhaini Surjan A	1728	-	3637	5365	216	-	455	671	11	-	11	22
7	Bhaini Surjan B	2257	-	4753	7010	282	-	594	876	-	11	11	22
8	Madina	723	-	3685	4408	90	-	461	551	11	11	-	22

	Gindhran (part)												
9	Bainsi A (Part)	3011	-	3817	6828	376	-	477	854	11	11	-	22
10	Bainsi B (part)	2660	-	3372	6032	333	-	422	754	11	--	11	22
11	Girawar (part)	907	-	3996	4903	113	-	500	613	-	11	11	22
12	Guga Heri (part)	1564	-	4317	5881	196	-	540	735	-	11	11	22
13	Kishangarh (Kheri Meham)	1533	-	3628	5161	192	-	454	645	11	-	11	22
	Total	68134	-	48820	**68135**	**2414**	**-**	**6102**	**8517**	88	88	110	286

68135 man days would be generated with the implementation of the project in Meham Watershed (IWMP I), which means 70 person for 200 days per year would be employed for the period of five years. In addition to this cropped area/ productivity would be increased and will also generate employment.

9.2 MIGRATION PATTERN

Table 2. Pre and Post Migration in Meham Watershed (IWMP I)

S.No	Name of micro watersheds	No. of persons migrating		No. of days per year of migration		Comments
		Pre Project	Expected post project	Pre Project	Expected post project	
1	Bainsi	593	297	110	51	No. of persons migrating will be reduced and also no. of days would be reduced by over 50%
2	Madina Gindhran	653	327	130	66	No. of persons migrating will be reduced and also no. of days would be reduced by over 50%
3	Farmana Badshahpur	350	175	140	64	No. of persons migrating will be reduced and also no. of days would

						be reduced by over 50%
4	Gugaheri	185	93	150	78	No. of pe rsons m igrating w ill be reduced an d al so no. of day s w ould be reduced by over 50%
5	Girawar	308	154	120	54	No. of pe rsons m igrating w ill be reduced an d al so no. of day s w ould be reduced by over 50%
6	Bedwa	197	99	145	71	No. of pe rsons m igrating w ill be reduced an d al so no. of days w ould be reduced by over 50%
7	Bhaini Maharajpur	315	158	145	69	No. of pe rsons m igrating w ill be reduced an d al so no. of day s w ould be reduced by over 50%
8	Bhaini Chanderpal	463	232	140	68	No. of pe rsons m igrating w ill be reduced an d al so no. of days w ould be reduced by over 50%
9	Bhaini Surjan	330	165	115	54	No. of pe rsons m igrating w ill be reduced an d al so no. of day s w ould be reduced by over 50%
10	Kishangarh	405	203	145	68	No. of pe rsons m igrating w ill be reduced an d al so no. of day s w ould be reduced by over 50%

A comparison of above table with expected migration of table 19 of the Chapter 3 r eveals that there will be about 50% reduction in the migration.

9.3 GROUND WATER TABLE

The area experiences shallow depth to water condition which varies from 0.29 (Madina) to 8.0 (Farmana Badshapur). The provision for reclamation of waterlogged and saline lands have been provided the drainage system. Thus the project will

take care of further rising of water table in the problematic area. Similarly, the area where the water table is declining, the necessary provision of rain water harvesting is provided in the project proposals.

Table 3. Detail of average pre- post ground water table depth in the project area (in meters)

Sr. No.	Name of Micro Watersheds	Ground Water Level (m)	
1	Bedwa	5.97	The areas underlain by shallow depth will be provided drainage system, the provision of which has been made in the project proposal. Area experiencing decline in water table, thus provision of rain water recharging is provided.
2	Bhaini Maharajpur	5.72	
3	Bhaini Chanderpal	6.31	
4	Bhaini Surjan	7.65	
5	Kishangarh	7.65	
6	Girawar	1.19	
7	Gugaheri	2.81	
8	Farmana Badshshpur	8.11	
9	Madina	0.29	
10	Bainsi	1.69	

Source: Ground Water Cell, Haryana

9.4 CROPS

Agriculture primary depends upon water, but this is availability of this is lacking without existence of canal network and deeper ground water conditions. All this can change with the integrated land and water management during the watershed project. The planned Renovation and digging of percolation pond, Drainage measures, land development works, retaining

wall, ramp and inlet of pond, water conveyance system, culverts, plantation, land leveling, bunding etc. can preserve sub moisture in the soil. This will help in additional area coming under cultivation and increasing productivity too. The crop yield pre project and expected and post project is presented in table 4**.**

Table 4. Increase in Expected Yield

Name of Micro-Watersheds	Name of Crops	Pre project		Total Production(in Kg)	Total Value Rs (in lacs)	Expected post project		Total Production (in Kg)	Total Value Rs (in lacs)
		Area ha	Average yield Kg. Per ha			Area ha	Average yield Kg. Per ha		
Bedwa (part)	Wheat	205	3960	811800	113.7	225	4362	981450	137.4
	Oilseed	66	1534	101244	30.4	69	1680	116630	35.0
	Paddy	65	1833	119145	16.7	75	2036	152700	21.4
Bhaini Chanderpal (part)	Wheat	235	3924	922140	129.1	255	4306	1098030	153.7
	Oilseed	55	1564	86020	25.8	65	1722	111826	33.5
	Paddy	82	1846	151372	21.2	85	2011	170935	23.9
Bhaini Maharajpur (part)	Wheat	225	3933	884925	123.9	240	4339	1041360	145.8
	Oilseed	48	1496	71808	21.5	53	1645	87216	26.2
	Paddy	76	1824	138624	19.4	86	2018	173548	24.3
Farmana Khas(part)	Wheat	325	3889	1263925	176.9	354	4302	1522908	213.2
	Oilseed	92	1511	139012	41.7	105	1662	174520	52.4
	Paddy	75	1864	139800	19.6	87	2086	181482	25.4
Farmana	Wheat	295	**3945**	1163775	162.9	321	4364	1400844	196.1

Name of Micro-Watersheds	Name of Crops	Pre project		Total Production(in Kg)	Total Value Rs (in lacs)	Expected post project		Total Production (in Kg)	Total Value Rs (in lacs)
		Area ha	Average yield Kg. Per ha			Area ha	Average yield Kg. Per ha		
Badshahpur (part)	Oilseed	65	**1486**	96590	29.0	76	1634	124229	37.3
	Paddy	52	**1805**	93860	13.1	61	1998	121878	17.1
Bhaini Surjan A	Wheat	252	**4012**	1011024	141.5	277	4419	1224063	171.4
	Oilseed	75	**1543**	115725	34.7	83	1697	140875	42.3
	Paddy	85	**1826**	155210	21.7	94	2121	199374	27.9
Bhaini Surjan B	Wheat	355	**3987**	1415385	198.2	381	4408	1679448	235.1
	Oilseed	125	**1526**	190750	57.2	139	1678	233325	70.0
	Paddy	110	**1836**	201960	28.3	126	2034	256284	35.9
Madina Gindhran (part)	Wheat	335	**3826**	1281710	179.4	368	4221	1553328	217.5
	Oilseed	115	**1503**	172845	51.9	128	1653	211622	63.5
	Paddy	95	**1842**	174990	24.5	108	2042	220536	30.9
Bainsi A (Part)	Wheat	325	**3854**	1252550	175.4	361	4251	1534611	214.8
	Oilseed	115	**1553**	178595	53.6	129	1708	220370	66.1
	Paddy	105	**1799**	188895	26.4	112	1986	222432	31.1
Bainsi B (part)	Wheat	295	**3869**	1141355	159.8	324	4269	1383156	193.6
	Oilseed	78	**1516**	118248	35.5	85	1667	141747	42.5
	Paddy	85	**1805**	153425	21.5	93	2001	186093	26.1
Girawar (part)	Wheat	295	**3942**	1162890	162.8	323	4352	1405696	196.8

Name of Micro-Watersheds	Name of Crops	Pre project		Total Production(in Kg)	Total Value Rs (in lacs)	Expected post project		Total Production (in Kg)	Total Value Rs (in lacs)
		Area ha	Average yield Kg. Per ha			Area ha	Average yield Kg. Per ha		
	Oilseed	83	**1491**	123753	37.1	94	1640	154169	46.3
	Paddy	115	**1826**	209990	29.4	124	2023	250852	35.1
Guga Heri (part)	Wheat	245	**3962**	970690	135.9	267	4376	1168392	163.6
	Oilseed	56	**1537**	86072	25.8	62	1690	104823	31.4
	Paddy	65	**1833**	119145	16.7	73	1993	145489	20.4
Kishangarh (Kheri Meham)	Wheat	295	**3896**	1149320	160.9	324	4269	1383156	193.6
	Oilseed	58	**1481**	85898	25.8	64	1629	104262	31.3
	Paddy	115	**1836**	211140	29.6	131	2034	266454	37.3
		5838		**18055605**	**2778.4**	**6427**		**21850113**	**3367.1**

Source: Revenue Department and Department of Agriculture, Rohtak (Haryana)

9.5 HORTICULTURE

Table 5. Pre and post project area under Horticulture

S.No.	Name of Micro Watersheds	Existing area under horticulture (ha)	Additional Area under horticulture proposed to be covered through IWMP	Total area in ha – Post Project
1	Bedwa (part)	Except village Dattaur, there is no horticulture	Atleast 10 ha horticulture plantation will be done in each village under project area	130
2	Bhaini Chanderpal			

	(part)	plantation in project area as per Dept. of Horticulture		
3	Bhaini Maharajpur (part)			
4	Farmana Khas(part)			
5	Farmana Badshahpur (part)			
6	Bhaini Surjan A			
7	Bhaini Surjan B			
8	Madina Gindhran (part)			
9	Bainsi A (Part)			
10	Bainsi B (part)			
11	Girawar (part)			
12	Guga Heri (part)			
13	Kishangarh (Kheri Meham)			

9.6 AFFORESTATION/ VEGETATIVE COVER

Table 6. Pre and post project forest and vegetative cover

S.No.	Name of micro watersheds	Existing area under tree covered, ha	Area under tree cover proposed ha	Total
1	Bedwa (part)	7	10	17
2	Bhaini Chanderpal (part)	5	10	15
3	Bhaini Maharajpur (part)	9	12	21

4	Farmana Badshahpur (part)	4	5	9
5	Bhaini Surjan A	6	5	11
6	Bhaini Surjan B	8	10	18
7	Madina Gindhran (part)	6	12	18
8	Bainsi A (Part)	11	10	21
9	Bainsi B (part)	9	10	19
10	Girawar (part)	13	15	28
11	Guga Heri (part)	4	5	9
12	Kishangarh (Kheri Meham)	7	5	12
	Total	**89**	**109**	**198**

9.7 LIVESTOCK

Table 7. Details of livestock in the project area

S.No.	Name of micro watersheds	Type of Animals	Pre project			Post project			Remarks
			No.	Yield Kg/ day	Income In Rs per day	No.	Yield Kg/ day	Income In Rs per day	
1	Bedwa	Buffalo	272	7-8	224-256	313	9-10	342-380	Increase in milk yield and number of animals by approx. 15%
		Cow	156	3-4	78-104	179	5-6	150-180	Increase in milk yield and number of animals by approx. 15%
2	Bhaini Maharajpur	Buffalo	568	7-8	224-256	653	9-10	342-380	Increase in milk yield and number of animals by approx. 15%

S.No.	Name of micro watersheds	Type of Animals	Pre project			Post project			Remarks
			No.	Yield Kg/ day	Income In Rs per day	No.	Yield Kg/ day	Income In Rs per day	
		Cow	197	3.5-4.5	91-117	227	5.5-6.5	165-195	Increase in milk yield and number of animals by approx. 15%
3	Bhaini Chanderpal	Buffalo	1049	7.5-8.5	240-272	1206	9.5-10.5	361-399	Increase in milk yield and number of animals by approx. 15%
		Cow	498	3-4	78-104	573	5-6	150-180	Increase in milk yield and number of animals by approx. 15%
4	Bhaini Surjan	Buffalo	1147	7-8	224-256	1319	9-10	342-380	Increase in milk yield and number of animals by approx. 15%
		Cow	497	3-4	78-104	572	5-6	150-180	Increase in milk yield and number of animals by approx. 15%
5	Kishangarh	Buffalo	669	7.5-8.5	240-272	769	9.5-10.5	361-399	Increase in milk yield and number of animals by approx. 15%
		Cow	340	3.5-4.5	91-117	391	5.5-6.5	165-195	Increase in milk yield and number of animals by approx. 15%
6	Girawar	Buffalo	1311	7.5-8.5	240-272	1508	9.5-10.5	361-399	Increase in milk yield and number of animals by approx. 15%
		Cow	877	3-4	78-104	1009	5-6	150-180	Increase in milk yield and number of animals by approx. 15%
7	Gugaheri	Buffalo	450	7-8	224-256	518	9-10	342-380	Increase in milk yield and number of animals by approx. 15%
		Cow	158	3.5-4.5	91-117	182	5.5-6.5	165-195	Increase in milk yield and number of animals by approx. 15%
8	Farmana Badshshpur	Buffalo	567	7.5-8.5	240-272	652	9.5-10.5	361-399	Increase in milk yield and number of animals by approx. 15%
		Cow	382	3-4	78-104	439	5-6	150-180	Increase in milk yield and number of animals by approx. 15%
9	Madina	Buffalo	895	7-8	224-256	1029	9-10	342-380	Increase in milk yield and number of animals by approx. 15%

S.No.	Name of micro watersheds	Type of Animals	Pre project			Post project			Remarks
			No.	Yield Kg/ day	Income In Rs per day	No.	Yield Kg/ day	Income In Rs per day	
		Cow	438	3-4	78-104	504	5-6	150-180	Increase in milk yield and number of animals by approx. 15%
10	Bainsi	Buffalo	1004	7.5-8.5	240-272	1155	9.5-10.5	361-399	Increase in milk yield and number of animals by approx. 15%
		Cow	1555	3.5-4.5	91-117	1788	5.5-6.5	165-195	Increase in milk yield and number of animals by approx. 15%

9.8 LINKAGES

The direct livelihood activities need good forward and backward support system. The activities may fail to deliver the desired results. These linkages would involve credit, machinery, input supply, marketing etc.

The backward forward linkages will involved the extension services which are brought available in the project proposal as capacity building and the provision have been kept. 20 kits of agriculture implement have been provided. Milk and other collection centre would be constituted with increased milk production under the project.

Table 8: Backward-Forward Linkages

Sr. No.	Project	Type of Marketing Facility	Pre-Project (no.)	During the Project (no.)	Post-project (no.)
1	Meham Watershed (IWMP I)	Backward linkages	-	-	-
		Seed certification	Moderate	Extension and Training	Improved
		Seed supply system	Moderate	Extension and Training	Improved
		Fertilizer supply system	Moderate	Extension and Training	Improved
		Pesticide supply system	Moderate	Extension and Training	Improved
		Credit institutions	Banks	Coordinate to lead banks	Bank intensity increased

Sr. No.	Project	Type of Marketing Facility	Pre-Project (no.)	During the Project (no.)	Post-project (no.)
		Water supply for irrigation	Scarcity	Promote rain water harvesting	Would be promoted
		Extension services	KGK& Agriculture deptt.	Extension & Training in village level	Improved
		Nurseries	Horticulture and forest	To be promoted	Improved
		Tools/ machinery suppliers	Subsides	Educate by Extension & Training	Supplies would be improved
		Price support system	Major crops	-	Needs for all crops
		Labour	-	Employment generate through works activities	Migration reduce
		Any other (please specify)	-	-	-
		Road network	Available	Coordinate with lined department	Would be strengthen
		Transport facilities	Moderate	Coordinate with lined department	Would be promoted
		Markets / Mandies	Exists	Coordinate with lined department	Intensity would be increased
		Agro and other industries	-	Coordinate with lined department to establish Cottage industries (Kutir Udyog) for landless and unemployed youth	Would be strengthen
		Milk and other collection centres	Milk collection centre in long distance	Coordinate with lined department	For installation on nearest door steps
		Any other (please specify)	-	-	-
			Vermi-compost unit	Convergence with NHM (Horticulture) department	To be increased
			Mushroom Cultivation	Convergence with NHM (Horticulture) department	To be increased
			Animal vitamins/ Minerals Deficit	Coordinate with lined department, to organize camps in watershed area	Animal vitamins feeds Would be

Sr. No.	Project	Type of Marketing Facility	Pre-Project (no.)	During the Project (no.)	Post-project (no.)
					promoted

9.8.1 LOGICAL FRAMEWORK ANALYSIS

Table 9. Logical Framework Analysis

Components	Activities	Outputs	Effect	Impact
Village Institution Formation	Formation of Watershed Community, User Groups	• Watershed Committee each village • Number of user groups depending on the coverage of particular intervention	Project can be implemented and managed in a democratic and Participatory way ensuring equity and transparency.	• Unity and prosperity in the village management. • People's Participation and positive perception towards the programme.
Strengthening Village operations	• Organizing training and awareness programme for village institutions (I.E.C. Activities). • Capacity Building workshops and	• Awareness camps to be organized • Trainings and exposure visits UGs and WCs to be held Capacity building workshops to be organized one. • Federations of UGs and WC to be formed.	• Quality of management of common resources improved. • Quality of distribution of benefits between people improved. • Increased awareness amongst women about village	

Components	Activities	Outputs	Effect	Impact
	exposure visit s for U ser G roup and W atershed Community • Facilitating and monitoring t he functioning of UGs and W Cs Strengthen linkages between U Gs and W Cs and Panchayat Institutions • Gender sensitization of UGs and W Cs to i ncrease inclusiveness o f Samuh (Joint) decision making. • Sensitize Village communities to involve ch ildren and yo uth i n development		resources • Women participation enhanced i n decision-making of GVCs. • Involvement of youth and ch ildren in vi llage development.	

Components	Activities	Outputs	Effect	Impact
Fund Management	• Improve management and utilization of UGs and WCs • Prepare communities to explore other sources of income for UGs and WCs.	UGs and WCs operating bank account and managing resources on their own.	• Purpose, frequency and volume of use of the fund enhanced • Volume of funds generated for UGs and WCs from other sources of income increased	
Ecological restoration	• Protection, Treatment and regeneration of common and private lands. • Protection, treatment and regeneration of forest lands. • Plantation of fruits and forest species. • Input trainings, conduct meetings and organize exposure visits for	• Common and private lands to be brought under new plantations and agro-horti- forestry like Neem, Adussa, prosopis, Banyan and Peepul. • Forest lands to be brought under new plantations and protection. • Trainings, exposure visits and meetings to be organized for communities, village volunteers and staff. • Income gener ation	• Fodder availability from common and private land increased. • Accessibility to common and forest lands increased with removal of encroachments and resolution of conflicts	• Better Ecological order in the area. • Increase in the proportion of households having more security of fodder. • Reduction in drudgery of fodder and fuel collection, especially women

Components	Activities	Outputs	Effect	Impact
	communities, village volunteers and staff to effectively plan, execute and monitor activities. • Identification and promotion of non-timber forest produce based income generation activities.	intervention promoted		
Rainfed Area Development	• Treatment of land through improved soil and moisture conservation practices on watershed basis. • Promotion of good agricultural practices- horticulture,	• Land to be brought under improved soil moisture conservation practices. • Good agricultural practices to be promoted. • Organic farming to be promoted. Fodder banks to be established. • Agriculture based	• Improved productivity of treated land. • Increased availability of water in cells. • Increase in annual agricultural production. • Farmers adopt organic farming practices. • Fodder security of	Increase in proportion of households having more security of food Increase in contribution of agricultural income to the household income

Components	Activities	Outputs	Effect	Impact
	improved cr op and vegetable. • Promotion of organic farming practices. • Formation of Fodder banks to increase f odder security and promote dai ry development among communities. • Identification and pr omotion of agr i-produce based i ncome generation activities like grading, processing and packaging. • Promotion of better i rrigation practices l ike drip irrigation • Impart trainings, conduct	livelihood in come generation act ivities to be promoted • Water har vesting structures to b e constructed. • Drip ir rigation facilities t o b e distributed am ong farmers. • Approx 15000 person days of em ployment to be generated. • Trainings, exposure visits and m eetings to be or ganized f or communities, vi llage volunteers.	farmers enhanced. • Increased availability of w ater for 9 to12 months. • Increased availability of w ater for livestock • Increase i n agricultural productivity of land. • Augmentation of drinking w ater supply.	

Components	Activities	Outputs	Effect	Impact
	meetings and organize exposure visit s of communities.			
Women's socio-political and economic empowerment	• Formation and strengthening of women' SHG groups • Capacity building of women folk. • Capacity building of S HG leaders and acco untants Linking SHGs with external financial institutions	• Women's SHG groups to be formed. • Federation of Women's SHGs to be formed. • Trainings t o b e conducted f or preparation of woolen products from sheep and goats	• Enhanced capacities of leaders of women's group in taking i nitiatives to solve pr oblems at different levels. • Improved acce ss to credit for live lihood purposes Increased household income.	• Position of women in household, community, so ciety (politically, so cially and economically) as perceived by women and co mmunity at large. • Performance enhancement of SHGs in te rms of participation, decision-making, leadership and f und management. • Equality and equi ty in gender relations at home (decision making, e xpenditure, children's education, health)

The adoption of soil and water management practices, renovation of village ponds and plantations not only improve productivity but also improve village environment. The investments made in water resources development would ease shortage of water both for domestic use and livestock and also make available water for supplemental irrigation.

The introduction of improved production technologies would stabilize crop production, save crops from adverse impacts of droughts and raise income level of farmers. The increased fodder availability and animal health care, the milk production would increase. There would be increased cash flows from subsidiary occupations. The increased awareness, operations through SHGs and easy availability of finance would make the communities more vibrant and enterprising.