

1.0 INTRODUCTION

1.1 INTRODUCTION OF THE PROJECT AREA

The IWMP-X Mandi (Integrated Watershed Management Programme) in Gohar Block was sanctioned in the year 2011-12 under 3rd batch by the ministry of rural development (Gol). In Himachal Pradesh the state government rural development department is executing the project. The District Rural Development Agency in Mandi is nodal agency to run the project. The implementing agency at field level is district watershed agency headed by the Project Director and Field Support team i.e. watershed development team members based at Gohar Block. There are 37 Gram Panchayat in Gohar Block. The IWMP Project is being started in 14 gram Panchayat in different micro watershed. The major catchment area is Kamru Naag which leads different Nallah of the watershed area. The whole of the water of the watershed catchment area is drawn into the Beas river. The major feature of the watershed area is as under:-

1. Rainfed area
2. There is no provision for rain water harvesting in the project area
3. Soil erosion due to steep slopping
4. The contiguity of the watershed area
5. The people are well aware about the consequences of the depletion of the NRM
6. The watershed area comprises schedule caste population also
7. Less interest in the animal rearing
8. Basic facilities are available in every micro watersheds
9. Fragmented land holding
10. Hail storm-prone area

1.1a Sanctioned Budgetary Provisions

Name of Project	: IWMP- X Gohar
Geographical Area	: 7481.46 ha
Project Area	: 6338 ha
Sanctioned Amount	: 9, 50, 70,000

Micro watershed/Gram panchayats under IWMP-X Gohar

Sr. No.	Gram Panchayat	No. of villages	Area (ha.)	Amount (₹)
1.	Baila	3	590	88,50,000
2.	Chhapharan	4	293	43,95,000
3.	Chail Chowk	5	278	41,70,000
4.	Delag Tikkeri	4	377	56,55,000
5	Balhari	3	555	83,25,000
6	Movi Seri	3	395	59,25,000
7	Nandi	5	359	53,85,000
8	Shilnoo	5	884	1,32,60,000
9	Killing	4	355	53,25,000
10	Bahawa	3	252	37,80,000
11	Syanj	8	773	1,15,95,000
12	Bassi	3	491	73,65,000
13	Gharot	9	450	67,50,000
14	Gohar	4	286	42,90,000
Total		63	6338	9,50,70,000

1.1b: Budgetary Provision for the Watershed Development Area

Sr.No.	Budget Component	% of the budget	Total amount (₹)
A)	Administrative cost		
1	Administrative cost	10%	95,07,000
2	Monitoring	1%	9,50,700
3	Evaluation	1%	9,50,700
B)	Preparatory Phase		
1	Entry point activities	4%	38,02,800
2	Institution & capacity building	5%	47,53,500
3	Detailed Project Report (DPR)	1%	9,50,700
C)	Watershed Work Phase		
1	Watershed Development Works	56%	5,32,39,200
2	Livelihood activities for the asset less persons	9%	85,56,300
3	Production system & micro enterprises	10%	95,07,000
D)	Consolidation phase	3%	28,52,100
	Total	100%	9,50,70,000

1.1d Methodology

A. District level exercise

- a. Collection of data at district level
 1. DWDA and Line department
- b. Meeting with CEO (DWDA), Project Officer /DWDA. Heads of Line Departments

B. Block level Exercise

- a. Data collection
- b. One day orientation with Pradhan Secretaries and Panchayat Sahayak at Block Level
- c. Meeting with line department officials of department for convergence issues.

C. Micro watershed /Panchayat /Revenue village wise Exercise

- a. General meeting at Panchayat level with members of Panchayat Samiti, Pradhan and Ward members followed by awareness camps.
- b. Collection of revenue data from Patwari
- c. Collection of socio economic data from Panchayat Secretary
- d. Village level meeting organized, PRA exercises and transect walks to assess the actual problem of the area
- e. Identification of beneficiary group for different activities
- f. Participatory Rural Appraisal Exercise with the local community by contacting the local peoples
- g. Transect walk with the line department and local community to ascertain the position of backward and forward linkages
- h. Selection of site with technical expert / Engineer and expert of soil science to analyses soil strata for construction of Check Dam ,Irrigation tank and other mega projects
- i. Selection of need based community and homogeneous Groups for involvement under livelihood activities by formulation of SHG's
- j. Selection of landless/assetsless community under the watershed catchment area
- k. Selection of SC/ST community under the project.
- l. Socio- economic condition of the watershed community.

2.0 GENERAL DESCRIPTION OF PROJECT AREA

2.1 DISTRICT

Mandi district was formed after the merger of Mandi State (Mandi) and Suket, two princely states on 15 April, 1948. This coincided with the formation of the Union Territory of Himachal Pradesh. The state attained its full statehood later. Mandi town was named after its resident Saint Mandavya Rishi.

Mandi is almost at the geographical centre of Himachal, lying along the left bank of the river Beas in the foothills of Shivalik ranges. The town has an altitude of 760 metres (2495ft) from the sea level. Comprising the two erstwhile states of Mandi and Suket, Mandi derives its name “Mandi” or “Market” as it was a major trade route from Ladakh to locations in Punjab such as Hoshiarpur and other places.

The fruit tree cover in Mandi is about 15 percent of the total area under fruit tree cover in Himachal Pradesh. Mandi raw silk has acquired wide fame and the rock salt mines at Drang and Guma are the special features of the district economy. With abundant deposit of rock salt and limestone, possibilities are being investigated for the existence of magnesite coal and china clay.

2.101 GEOGRAPHICAL FEATURE

Himachal Pradesh has 12 districts and Mandi is one of them. Both state and district H.Q is situated in Mandi town. Mandi district lies in outer and lower Himalayas between 30'.45" latitude and 77' to 78'.25" longitude and altitude of district varies between 2500 to 16000 feet. The lowest and highest point being the Sunni Tehsil and Chanshal pass respectively. It is located in North East region of the state. On North side it is surrounded by Kullu and Kinnaur districts of the state, on South East and West by Sirmour district of the state and Dehradun of the Uttarakhand and North West by Seraj and Mandi of Himachal Pradesh. The hills and mountain ranges are generally aligned in the east – west directions which present a complicated pattern of relief. The predominately rough terrain, the prevalence of introducing spurs, narrow and steep side valleys throughout the district.

2.102 POPULATION

According to the 2011 census Mandi district has a population of 999518. The district has a population density of 253 inhabitants per square kilometre. Its population growth rate over the decade 2001-2011 was 10.89%. Mandi has a sex ratio of 1012 females for every 1000 males and a literacy rate of 82.81%.

2.103 RIVERS

The major rivers following in the district are Satluj, Beas, Jivani Khad, and Nogli Khad.

2.104 CLIMATE

Mandi features a subtropical highland climate. The climate of Mandi is composite having hot summers and cold winters. Mandi generally experiences rainfalls during end of summer season. Mandi city falls in the lower most climatic zone of the Himalayas. These regions enjoys a Wet –sub temperate climate of the foot hills (450-900m) as against the Dry-cold alpine climate with snow fall at higher altitudes (2400-4800mts). Temperatures typically range from 6.7⁰C (44.06⁰F) to 39.6⁰C(103.28⁰F) over the course of a year. The average temperature during summer is between 18.9⁰C(66.02⁰F) and 39.6⁰C (103.28⁰F) and between 6.7⁰C(44.06⁰F) and 26.2⁰C (79.16⁰F) in winter. Monthly precipitation varies between 25.4 millimetres (1 in) in November to 228.6 millimetres (9 in) in August. It is typically around 58.3 millimetres (2.29 in) per month during winter and spring and around 101.6 millimetres (4 in) in June as the monsoon approaches. The average total annual precipitation is 832 millimetres (32.76 in).

2.105 IRRIGATION

Most of the area is rainfed. The irrigation facilities are limited. The main sources for irrigation are kuhals and nallahs.

2.106 (c) VEGETABLE

Vegetable is also one of the source of cash crops in district Mandi . Potato is major vegetable crop under which the area for the year 2011-12 was 6200 hectare and production was 39075(mt) whereas under peas, beans, Cabbage and other vegetable area total area 10957 hectare and 188128 mt. (directorate of agriculture H.P.)

2.2 Gohar Block

The Gohar development block is situated at the distance of 37 km from the district Headquarter. The altitude of the Gohar block is 1240 mt ((abmsl). The whole of the block area is having lower hills to higher hills. The longitudes of the block headquarter 31°34'50.8"N and latitude 77°02'16.1". The block is surrounded by the Seraj and Sadder block. The main cash crop of the area is vegetable and horticulture cultivation.

Table: Families different categories of Gram Panchayat wise covered under IWMP Project

Sr. No.	Name of Panchayat	General families	SC Families	ST/ OBC families	Grand Total
1.	Baila	268	88	5	361
2.	Chhapharan	216	191	0	407
3.	Chail Chowk	316	408	29	753
4.	Delag Tikkeri	318	147	2	467
5	Balhari	313	92	50	455
6	Movi Seri	284	247	30	561
7	Nandi	179	440	-	619
8	Shilnoo	246	211	-	457
9	Killing	200	146	8	354
10	Bahawa	184	382	-	566
11	Syanj	522	492	71	1085
12	Bassi	405	86	-	491
13	Gharot	443	86	30	559
14	Gohar	382	282	19	683
Total		4276	3298	244	7818

Source: Panchayat sectaries 2010-11 of Gohar block

WATERSHED AREA

2.1 Socio economic profile of IWMP-X Mandi

- Total number of Panchayat : 14
- Total number of families : 7818
- Total population of the Panchayat : 28804
- General families : 4276 (Male=7871, female =7755)
- Schedule caste families : 3298(Male= 6167, female = 6103)
- ST/OBC families : 244 (male=453, female 455)

2.101: Demographic profile of different Panchayats

Name of Panchayat	General Families				SC Families				ST/OBC				G.Total
	No. of families	Male	Female	Total	No. of families	Male	Female	Total	No. of families	Male	Female	Total	
Baila	268	492	509	1001	88	158	172	330	5	12	11	23	1354
Chhapharan	216	369	368	737	191	353	359	712	0	0	0	0	1449
Chail Chowk	316	639	597	1236	408	741	743	1484	29	43	52	95	2815
Delag Tikkeri	318	600	581	1181	147	266	248	514	2	4	5	9	1704
Balhari	313	584	597	1181	92	145	151	296	50	105	85	190	1667
Movi Seri	284	514	496	1010	247	537	463	1000	30	45	53	98	2108
Nandi	179	338	344	682	440	782	790	1572	0	0	0	0	2254
Shilnoo	246	428	430	858	211	435	452	887	0	0	0	0	1745
Killing	200	355	344	699	146	264	260	524	8	15	14	29	1252
Bahawa	184	344	327	671	382	672	662	1334	0	0	0	0	2005
Syanj	522	1008	1036	2044	492	999	973	1972	71	143	140	283	4299
Bassi	405	733	720	1453	86	146	158	304	0	0	0	0	1757
Gharot	443	794	784	1578	86	194	206	400	30	63	60	123	2101
Gohar	382	673	622	1295	282	475	466	941	19	23	35	58	2294
Total	4276	7871	7755	15626	3298	6167	6103	12270	244	453	455	908	28804

Source: Gram Panchayat, 2012

2.201a: Detail of BPL and Antodaya families under different castes

Name of panchayat	Antodaya				BPL				Grand Total		
	General	SC	ST/OBC	Total	General	SC	ST/OBC	Total	Antodaya	BPL	Total
Baila	0	28	5	33	12	5	-	17	33	17	50
Chhapharan	0	20	15	35	13	5	-	18	35	18	53
Chail Chowk	2	12	52	66	9	13	-	22	66	22	88
Delag Tikkeri	0	22	16	38	14	10	-	24	38	24	62
Balhari	1	24	7	32	12	5	-	17	32	17	49
Movi Seri	0	15	19	34	7	7	-	14	34	14	48
Nandi	0	30	58	88	24	20	-	44	88	44	132
Shilnoo	0	23	37	60	19	11	-	30	60	30	90
Killing	1	7	17	25	4	8	-	12	25	12	37
Bahawa	0	8	34	42	13	14		27	42	27	69
Syanj	8	67	82	157	32	42	6	80	157	80	237
Bassi	0	76	13	89	40	5	-	45	89	45	134
Gharot	16	133	37	186	73	13	5	91	186	91	277
Gohar	1	24	7	32	12	5	-	17	32	17	49
Total	29	489	399	917	284	163	11	458	917	458	1375

Source: Gram Panchayat, 2012

2.301: The land use pattern of IWMP-X

Name of Panchayat	Total land	Un Irrigated land	Irrigated land	Agriculture	Horticulture	Vegetable	Barren	Pasture	Ghasni	Forest	Other
Baila	604.16	263.55	3.41	103.61	3.59	1	8	91	17.95	366.63	12.38
Chhapharan	335.67	8.47	83.27	90.85	2.8	-	-	4.06	7.97	184.46	45.62
Chail Chowk	335.82	147.47	17.65	168.31	7.02	-	-	50.15	2.97	60.66	46.71
Delag Tikkeri	398	217	16.2	135.76	-	-	1.08	0	42.34	75	144.32
Balhari	586	121	6	115	5	7	23	135	50	251	-
Movi Seri	427	130	-	127	3	-	16	160	42	63	16
Nandi	414.02	183.83	45.17	157.52	1.47	-	-	3.22	52.92	127.79	71.2
Shilnoo	1165	181	21	126	76	-	-	8	48	875	32
Killing	457	121	17	137	1	-	-	7	72	176	64
Bahawa	287.11	33.82	86.04	106.87	2.24	-	0.38	72	16.62	39	50
Syanj	1022	258	48	304	2	-	4	308	102	215	87
Bassi	540	174	-	170	4	-	2	216	52	60	36
Gharot	514.77	231.35	31.62	196.23	40.31	-	0.45	136.12	21.6	56.2	63.86
Gohar	370.09	136.61	94.02	153.58	12.8	1	4.99	46.33	79.96	4.51	67.82
Total	7456.64	2207.1	469.38	2091.73	161.23	9	59.9	1236.88	608.33	2554.25	736.91

Source: Revenue Deptt.

2.302 Status of Livestock

The animal rearing is the integrated part of farming system in the watershed area. The major animals are cows (local and improved), buffaloes, sheep, goats, bullocks, mule etc. The peoples are facing acute problem and shortage of fodder and drinking water for their animals during the stress period. The details of livestock reared by the people in the watershed area are as under:

2.302a Livestock population including Number of milch and dry cows (Local and improved) and other livestock

Name of Panchayat	Local cow			Improved cow			Buffaloes			Bullock	Calf	Goat	Sheep	Mule	Poultry	Grand Total
	Milch	Dry	Total	milch	Dry	Total	Milch	Dry	Total							
Baila	58	27	85	253	117	370	9	7	16	340	295	700	845	7	-	2658
Chhapharan	48	17	65	214	76	290	5	1	6	184	160	54	185	18	-	962
Chail Chowk	68	78	146	692	293	985	10	1	11	80	448	117	172	-	55	2014
Delag Tikkeri	55	28	83	235	85	320	3	1	4	224	185	540	165	16	-	1537
Balhari	48	32	80	339	156	495	14	11	25	190	340	465	908	9	-	2512
Movi Seri	51	21	72	375	140	515	17	11	28	554	270	470	567	14	-	2490
Nandi	59	25	84	237	61	298	7	3	10	310	182	420	215	23	-	1542
Shilnoo	25	12	37	98	73	171	87	53	140	186	225	340	165	-	5	1269
Killing	8	9	17	58	32	90	400	160	560	236	427	75	540	-	80	2025
Bahawa	116	39	155	303	97	400	-	-	-	260	275	305	240	14	-	1649
Syanj	253	72	325	950	335	1285	15	3	18	750	855	848	525	34	-	4640
Bassi	52	20	72	297	88	385	2	1	3	570	250	285	300	14	-	1879
Gharot	89	55	144	367	141	508	-	-	-	400	350	303	192	-	-	1897
Gohar	26	11	37	358	92	450	4	2	6	152	207	125	231	13	-	1221
Total	956	446	1402	4776	1786	6562	573	254	827	4436	4469	5047	5250	162	140	28295

Source: Household Survey

3.0 SWOT ANALYSES

A critical analysis of strengths, weaknesses, opportunities and threats (SWOT) of any region is a good analysis for developing strategies /programmes as it provides valuable insights on potentials, constraints, opportunities and threats based on the primary, secondary and technical data a detailed analysis of SWOT is carried out.

P 3.031 Strengths of the watershed area

- Road infrastructure is available.
- Area is suitable for seasonal and off seasonal vegetable crops.
- Area is also suitable for fruit crop production.
- Khaddi is additional self employment of women.
- People are well versed with animal husbandry.
- Farmers are innovative and ready to adopt new technologies.
- Milk collection centre is the main strengths
- Manali sweet and gold home factory are additional source of revenue in the watershed
- Area is suitable for seasonal vegetable crops especially potato and peas.

P 3.032 Weaknesses

- Marginal and small land holding.
- Area is rain fed.
- Low productivity.
- The pasture land/ grazing land are shrinking.
- Deforestation.
- Rainfed area.

P 3.033 Opportunities

- Scope for bringing the area under irrigation through rain water harvesting.
- Scope for adopt modern technology for better cattel management.
- Installation of livelihood activities such as khaddi and knitting.
- There is potential of the horticulture crop
- Training to the farmers on vegetable management, mushroom production etc
- Strengthening of SHG.
- To encourage the livelihood activities among unemployed youths.

P 3.034 Threats

- Soil erosion in the sloppy lands.
- Wild animal/stay cattle are the major threat of the area.
- Deforestation and degradation of land
- Declining of fodder sources.

4.0 ENTRY POINT ACTIVITIES

Entry point activities play a very important role in the rural area to orient the local community members towards thrift and credit activities of the project. Success of government initiated programme largely depends upon the preference given to the entry point activities suggested under the programme. Main objective of entry point activities is to increase social mobilization and people participation and collectiveness in various developmental activities initiated by the government. The money earmarked for entry point activities is 4 per cent of total budget outlay and the amount provided under this component play a indispensable role of community involvement in different activities proposed for project implementation. The entry point activity attracts the people participation of local community for social mobilization under one platform.

Need based and priority driven entry point activities suggested by farmers during PRA and transact walk are as given below.

4.1 Entry point activities suggested at different locations of watershed

Name of Panchayat	Activity	No. of structure	Amount (₹)	Purpose
Baila	C/O Kuffar	2	3,54,000	Animal drinking & soil moisture
Chhaphran	C/o WST	1	1,25,800	Irrigation provided to the beneficiaries
	L/o Alkathin pipe	1	50,000	
Chail Chowk	C/o Irrigation Kuhal	1	1,66,800	Irrigation provided to the beneficiaries
Delag Tikkeri	C/o Bawari	5	2,26,200	Irrigation provided to the beneficiaries
Balhari	R/o Community tank	1	78,000	Irrigation provided to the beneficiaries
	C/o Irrigation Kuhal	1	2,00,000	
	C/o Bawari	1	55,000	
Move Seri	S/o Irrigation tank	1	1,37,000	Irrigation provided to the beneficiaries
	C/o Check Dam	1	1,00,000	Irrigation provided to the beneficiaries
Nandi	C/o Irrigation Tank	2	2,15,400	Irrigation provided to the beneficiaries
Shilnoo	L/o Alkathin pipe line	1	2,50,000	Irrigation provided to the beneficiaries
	C/o Irrigation tank	1	2,80,400	
Killing	C/o Irrigation tank with alkathin pipe line	1	2,13,000	Irrigation provided to the beneficiaries
Bahwa	C/o Irrigation tank	1	1,11,200	Irrigation provided to the beneficiaries
	Alkathin pipe line	1	40,000	
Syanj	C/o irrigation tank	1	2,13,800	Irrigation provided to the beneficiaries
	C/o Irrigation Kuhal	2	2,50,000	
Bassi	C/o Irrigation tank	1	2,19,600	Irrigation provided to the beneficiaries
	L/o Alkathin pipe	1	75,000	
Gharot	C/o Irrigation Kulh	1	2,70,000	Irrigation provided to the beneficiaries
Gohar	C/o Irrigation kulh	1	1,71,600	Irrigation provided to the beneficiaries
Grand Total			38,02,800	

5.0 CAPACITY BUILDING

To implement watershed activities more effectively skill development and capacity building at the various level ie. Panchayat /micro watershed level, block level and district level is prerequisite condition before initiating the implementation of the project. The activities proposed are given below:

5.1 Modules

5.1a Awareness Camps

- Will be organized at Panchayat level

5.1b Training:

Training will be organized at

- Panchayat level
- Block level
- DWDA level
- Institutional level

5.1c Exposure Visits:

- Exposure visits will be conducted at University/ Institutions /Field

5.1d Special Trainings will be organized in the professional institutes

5.101 Activities with number of participants

5.101a: Target groups and location of program

Target group	No. of participants	Activity	Location	Duration (days)	No. of training	Budget
Member of Gram Shabha Panchayat secretaries and prograssive farmers	All	Awareness camps on watershed management	Panchayat level	1	28	2,70,000
Member of Gram Shabha Panchayat secretaries and prograssive farmers	All	Livelihood and production system awareness camp	Panchayat level	1	56	5,60,000
PRI, pradhan, ward members and secretary	140 person	Training cum exposure visit on watershed management	Block level /Institutional/ University	2-3	14	3,40,800
Self Help Groups and progressive farmers	1 to 2/ SHG/ activity maxi. 481 person	Agriculture & Horticulture, Vegetable, Sheep & Vermicompost	State /Outside State	3	14	14,16,000

		Goatry, Poultry, Mushroom				
Self Help Groups, User Groups exposure visit	3 to 4 / activity/ panchayat maxi. 464 person	Specialized trainings of all SHG groups cutting & pruning, knitting, carpenter,	Professional Institutes / University	3	14	13,17,600
Self Help Group user progressive farmers	3 to 4 activity panchayat maxi. 50 person	Exposure visit/ kishan males padershani.	Professional institutes university/ state outside state	3	2	2,02,500
PIAs, WDTs members	73 person	Project implementation and management trainings, report writing and accounts maintenance	Professional institutes/ University (State Outside State)	3	14	1,75,200
Miscellaneous/Expert visit		Expert visits/services and Misc.	Professional institutes/ University (State Outside State)	-	-	4,71,400
Total					142	47,53,500

6.0 Land Development for Sub activity

Land Development is a basic tool for raising of fuel and fodder plantation and Hybrid grasses for sowing healthy species and land for this purpose have been selected during peoples participatory appraisal exercise with the local community. The land comprises of hill steep slopes having mixed layers of soil, facing acute problems of massive soil erosion during rainy season. During the field visit the interaction was made with the local people and farmers, it was observed that soil erosion is increasing at a faster rate, due to the degradation of land. On the suggestion of soil science expert some vegetative measure supported with the fuel plantation of fodder species /Hybrid grasses are recommended to check the soil erosion.

6.1 Land Development and sub activity (Plantation of fodder trees and improved Seeds of grasses in wards

Name of the Scheme	Area to be treated	Unit cost per (₹)	Amount (₹)
Land Development for afforestation	50.5	29000	14,64,500

6.2 Budget form Production system and micro enterprises

Name of Panchayat	Fodder Trees			Grasses				Grand Total
	Area (ha.)	Unit cost per ha ₹	Budget @ 11000 /ha	Area (ha.)	Quantity of seeds (kg) @ 35kg /ha	Rate per Kg (₹)	Budget ₹	
Baila	5	11000	55,000	2.5	87.5	120	10,500	65,500
Chhapharan	2	11000	22,000	2	70	120	8,400	30,400
Chail Chowk	3	11000	33,000	4	140	120	16,800	49,800
DelagTikkeri	3	11000	33,000	2.5	87.5	120	10,500	43,500
Balhari	3	11000	33,000	3	105	120	12,600	45,600
Movi Seri	2.5	11000	27,500	2.5	87.5	120	10,500	38,000
Nandi	5	11000	55,000	3.5	122.5	120	14,700	69,700
Shilnoo	4	11000	44,000	2.5	87.5	120	10,500	54,500
Killing	1.5	11000	16,500	2	70	120	8,400	24,900
Bahawa	2.5	11000	27,500	2	70	120	8,400	35,900
Syanj	7	11000	77,000	7	245	120	29,400	1,06,400
Bassi	5	11000	55,000	2.5	87.5	120	10,500	65,500
Gharot	3	11000	33,000	3	105	120	12,600	45,600
Gohar	2	11000	22,000	2	70	120	8,400	30,400
Total	48.5		5,33,500	41			1,72,200	7,05,700

6.2 (a): Variety and rates of fodder species and hybrid grasses Budget form Production system and micro enterprises

Activity /Item	Breed	Area	Rate per ha. (₹)	Total cost (₹)
Fodder	Beul, Ban, Morus	48.5	11000	5,33,500
Grasses	Steria, Napier and orchard grasses	41	4200	1,72,200
Total		89.5		7,05,700

7.0 Vegetative and Engineering structure

In situ-soil conservation under watershed treatment area comprises of hill steep slopes having mixed layers of soil, facing acute problems of massive soil erosion during rainy season. During the field visit the interaction was made with the local people and farmers, it was observed that soil erosion is increasing at a faster rate, due to the following reasons

- Deforestation in the watershed areas
- Construction of roads and dumping of debris along Nala side
- Cutting of bushes and hedges by local people for fuel and fodder purpose
- Lack of physical and biological structures, which facilitate water conservation
- Excessive use of cultivated land for Veg. purpose.

7.1 Structures proposed to check massive soil erosion, the following interventions are recommendation and PIA can planning according

- Construction of check dams from top to bottom to minimize the high runoff water during raining season.
- Construction of Gabion Structures to sloppy land sliding area.
- Construction of Contour / trenches to check soil erosion.
- Proper bunding on the cultivated lands by planting grasses and fodder tree
- Biological/vegetative engineering measures along the slope land
- Construction of Gully plugging
- Construction of Loose boarder check dam
- Loose Boulder to check high runoff and stop flooding of fertile soil
- Bank stabilization proposed to be constructed where the massive soil is flooding

7.2 Various structures are proposed to be constructed at different location for checking soil erosion

7.2a: Structure with number of beneficiaries

Activity	Size (m)	No. of structure	Unit Cost (₹)	Watershed Cost (₹)	Estimated Cost (₹)
Crate Wall	2.5x1.25x1.25	322	11,000	35,45,735	35,45,735
	2.5x1.5x2	22	13,500	2,97,000	2,97,000
Total		344		38,42,735	38,42,735
Drainage	4005	19	-	41,37,164	41,37,164
Gabion Structure	10x1.5x2.5	3	66,215	1,98,645	1,98,645
	8x1.5x2.5	3	53,238	1,59,714	1,59,714
	8x1.5x2.5	1	65,367	65,367	65,367
	7x1.5x2.5	3	46,750	1,40,250	1,40,250
	6x1.5x2	5	49,186	2,45,930	2,45,930
	5x1.5x2	4	44,542	1,78,168	1,78,168
	8x1.5x2	1	58,474	58,474	58,474
	5x1.5x2.5	3	44,544	1,33,632	1,33,632
	8x1.5x2.5	4	58,664	23,4656	2,34,656
	8x1.5x2.5	2	56,415	1,12,830	1,12,830
	10x1.5x2.5	4	68,215	2,72,860	2,72,860
	10x1.5x2.5	2	71,655	1,43,310	1,43,310
	8x1.5x2.5	3	58,664	1,75,992	1,75,992
	10x1.5x2.5	3	71,655	2,14,965	2,14,965
	6x1.5x2	6	49,486	2,96,916	2,96,916
	8x1.5x2.5	3	58,644	1,75,932	1,75,932
	5x1.5x2.5	1	33,774	33,774	33,774
	5x1.5x2	1	28,350	28,350	28,350
	7x1.5x2.5	2	46,750	93,500	93,500
	6x1.5x2	1	33,700	33,700	33,700
	10x1.5x2.5	2	66,761	1,35,522	1,35,522

	8x1.5x2.5	3	65,376	1,96,101	1,96,101
	8x1.5x2.5	4	58,664	2,34,656	2,34,656
Total		64		35,63,244	35,63,244
Contour trenching	1.45x0.3x0.3	3971	27	1,07,218	1,07,218
	1x0.45x0.45	713	27	19,243	19,243
	1x0.3x0.3	250	52	13,000	13,000
Total		4934		1,39,461	1,39,461
Contour bunding	7x1.175 x 0.65	26	2800	72,800	72,800
Live fencing	80x40	1	50702	50,702	50,702
	150x30	1	75473	75,473	75,473
Total		2		1,26,175	1,26,175
Stone wall	15x2.2	1	148217	1,48,217	1,48,217
Grand Total				1,20,29,796	1,20,29,796

Soil conservation work includes formation of Dry check and other suitable structure to be constructed to conserve the fertile soil and to protect from high runoff. In this micro watershed total 19 Drainage, 344 Crate wall, 4934 contour trenching 62 Gabion structure, 26 Contour bunding, 2 Live fencing and 1 stone wall will be constructed which will benefit all families.

Vegetative Measure: Various types of trees (Robinia, kenth), Shrubs (Berbris, Ruses) and grasses (Chrysopogon falues, Cynodon dactylon, Napier etc.) can be grown in the areas prone to soil erosion. Fodder grasses like Napier grass can be used on farm bunds. For demonstration in each panchayat about 10,000 cuttings could be planted/ distributed to farmers.

Outcome

- To minimize the impact of rainfall
- To reduce high velocity of soil erosion
- To improve moisture retention conditions of the area
- To improve soil properties, etc.
- To improve fertility of cultivated soil

8.0 WATER HARVESTING

The main sources of irrigation in the gram Panchayat are Roof water, Tank, kachha talab, pacca talab, kuhal and water schemes. The most of the cultivated area is rainfed. The existing water resources are drying due to climatic change and depletion of water source. The watershed community /people face acute problem of water during stress period, specifically for the irrigation of vegetable crops and spray purpose.

8.1 (a): Existing and proposed water harvesting structures with storage capacity

Name of structure	No. of structure	Capacity in (m ³)		
	Repairable	(m ³)	New structure	(m ³)
Kachha Talab	-	-	60	6985.57
Roof water	-	-	7	87.5
Pacca talab	-	-	10	580.5
Irrigation Tank (WST)	17	1343.06	33	998.94
Source Tank	2	26	1	2.25
Live Fencing	1	30	0	0
Farm pond (Brick lining)	0	0	28	1772
Farm pond (LDPE)	0	0	7	728
Fishery Tank	1	225	1	75
Check dam	-	0	33	18497.6
Pipe line	-	0	25	0
Kuhal	13	0	12	0
Total	34	1624.06	217	29727.36

Table: Repairable water bodies and construction of New structure with size , capacity and budget of each structure under water harvesting

Name of Structure	Existing structures/ repayable and storage capacity (₹)					Construction of new structures storage capacity cost (₹)						Grand total
	No.	Size	Capacity (m³)	Watershed (₹)	Conve. (₹)	Capacity (m³)		Amount (₹)				
						No.	Size (mt)	Watershed	Conv.	Watershed (₹)	Conv. (₹)	Amount (₹)
Kaccha talab	-	-	-	-	-	14	7x3x1.5	441	-	8,39,950	-	8,39,950
	-	-	-	-	-	3	7x3x1.5	0	94.5	0	1,74,138	1,74,138
	-	-	-	-	-	14	10x8x2	2240	0	19,73,260	-	19,73,260
	-	-	-	-	-	1	10x8x2	0	160	0	1,49,785	1,49,785
	-	-	-	-	-	4	10x8x1.5	480	-	6,19,773	-	6,19,773
	-	-	-	-	-	1	30x10x2	600	-	3,99,875	-	3,99,875
	-	-	-	-	-	1	15x10x2	300	-	2,28,286	-	2,28,286
	-	-	-	-	-	1	8x4x2	64	-	85,627	-	85,627
	-	-	-	-	-	1	20x10x1.5	300	-	2,32,991	-	2,32,991
	-	-	-	-	-	1	15x12x2	360	-	2,59,294	-	2,59,294
	-	-	-	-	-	1	5x3x2	30	-	39,300	-	39,300
	-	-	-	-	-	1	5 mt	39.26	-	53,500	-	53,500
	-	-	-	-	-	1	6 mt	169.67	-	1,01,548	-	1,01,548
	-	-	-	-	-	1	4.5 mt	95.44	-	75,247	-	75,247
	-	-	-	-	-	1	20x10x2	400	-	285,483	-	2,85,483
	-	-	-	-	-	2	8x6x2	192	-	2,12,976	-	2,12,976
	-	-	-	-	-	1	7 mt	0	115.40	0	1,48,772	1,48,772
	-	-	-	-	-	8	7x3x2	336	-	5,35,825	-	5,35,825
	-	-	-	-	-	1	16x3x1.5	72	-	1,60,500	-	1,60,500
	-	-	-	-	-	3	4x4x1.5	72	-	1,37,859	-	1,37,859
-	-	-	-	-	2	15x8x2	480	-	3,94,779	-	3,94,779	
-	-	-	-	-	2	10 mt	314.2	-	2,14,000	-	2,14,000	
-	-	-	-	-	65		6985.57	369.9	68,50,073	4,72,695	73,22,768	
Pacca talab	-	-	-	-	-	7	7x3x1.5	220.5	0	9,05,350		9,05,350
	-	-	-	-	-	3	10x8x1.5	360	0	7,90,115		7,90,115
Total						10		580.5		16,95,465		16,95,465

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Name of Structure	Existing structures/ repayable and storage capacity (₹)					Construction of new structures storage capacity cost (₹)						Grand total Amount (₹)
	No	Size	Capacity (m³)	Watershed (₹)	Conve. (₹)	Capacity (m³)		Watershed (₹)	Conve. (₹)	Watershed (₹)	Conve. (₹)	
						N o.	Size (mt)					
Roof water	-	-	-	-	-	7	2.5x2.5x2	87.5	-	5,25,541	-	5,25,541
						1	2.5x2.5x2	-	12.5	-	75,649	75,649
Total						8		87.5	12.5	5,25,541	75,649	6,01,190
Irrigation Tank	1	3.85x3.70x1.8	25.64	12,049	-	-	-	-	-	-	-	12,049
	1	4.2x3x1.8	22.68	1,14,44	-	-	-	-	-	-	-	1,14,44
	1	5.5x4.6x1.8	45.54	41,200	-	-	-	-	-	-	-	41,200
	1	9.75x4.6x1x1	44.8	35,600	-	-	-	-	-	-	-	35,600
	1	6x4.8x1.8	51.84	36,700	-	-	-	-	-	-	-	36,700
	1	5x4x2	40	36,800	-	-	-	-	-	-	-	36,800
	1	14.6x3.1x2.3	32.79	12,616	-	-	-	-	-	-	-	12,616
	1	10x5.2x2	104	39,686	-	-	-	-	-	-	-	39,686
	1	11x7x1.8	138.6	44,537	-	-	-	-	-	-	-	44,537
	1	11.8x8x2	188.8	64,612	-	-	-	-	-	-	-	64,612
	1	10.5x8x2	168	57,047	-	-	-	-	-	-	-	57,047
	1	5.5x4.4x1.7	41.14	25,000	-	-	-	-	-	-	-	25,000
	1	15x10.3x2.4	370.8	1,16,528	-	-	-	-	-	-	-	1,16,528
	1	12.2x7.8x2	190.32	64,136	-	-	-	-	-	-	-	64,136
	1	8x5x2	80	29,457	-	-	-	-	-	-	-	29,457
	1	12x8x2	192	55,527	-	-	-	-	-	-	-	55,527
	1	8x7x2	112	77,034	-	-	-	-	-	-	-	77,034
						16	4.2x3.3x1.5	332.64	0	16,85,750	0	16,85,750
						1	4.2x3.3x1.5	0	20.79	0	2,31,200	2,31,200
						16	5x4x2	640	0	23,53,637	0	23,53,637
						5	5x4x2	0	200	0	7,46,678	7,46,678
						1	4.2x3.3x1.9	26.3	0	1,29,499	0	1,29,499
Total	17		1343.06	7,59,973		40		998.94	220.79	41,68,886	9,77,878	59,06,737

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Name of Structure	Existing structures/ repayable and storage capacity (₹)					Construction of new structures storage capacity cost (₹)						Grand total
	No.	Size	Capacity (m ³)	Watershed (₹)	Conve. (₹)	No.	Size (mt)	Capacity (m ³)		Watershed (₹)	Conv. (₹)	
Live fencing	1	5x3x2	30	9600	-							9600
Source Tank	-	-	-	-	-	1	1.5x1x1.5	2.25	-	53,928	-	53,928
	1	3x3x2	18	15,483	-	-	-	-	-	-	-	15,483
	1	2x2x2	8	10,483	-	-	-	-	-	-	-	10,483
Total	2		26	25,966				2.25	-	53,928		79,894
Fishery Tank	1	25x6x1.5	225	203014	-							2,03,014
	-	-	-	-	-	1	10x5x1.5	75	-	1,13,929	-	1,13,929
Total	1		225	2,03,014		1		75		1,13,929		3,16,943
Farm pond (Brick lining)						4	4x4x1.5	96	0	2,80,850	0	2,80,850
						3	4x4x1.5	0	72	0	2,09,950	2,09,950
						2	8x4x1.5	96	0	2,39,050	0	2,39,050
						2	6x4x2	0	96	0	1,15,100	1,15,100
						2	6x6x1.5	108	0	2,26,050	0	2,26,050
						14	6x4x2	672	0	8,15,720	0	8,15,720
						10	8x5x2	800	0	6,70,486	0	6,70,486
Total						37		1772	168	22,32,156	3,25,050	25,57,206
Farm pond (LDPE)						4	8x8x2	512	-	2,67,950	0	2,67,950
						3	6x6x2	216	0	1,80,550	0	1,80,550
Total						7		728	0	4,48,500	0	4,48,500
Check Dam						8	10x2.5x2.5	5420.8	0	18,36,130	0	18,36,130
						1	10x2.5x2.5	0	677.6	0	2,29,514	2,29,514
						8	5x2.5x2.8	2822.4	0	11,29,356	0	11,29,356
						1	5x2.5x2.8	0	403.2	0	1,40,500	1,40,500

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						6	6x2.5x2.8	1646.4	0	9,63,284	0	9,63,284
						1	6x2.5x2.8	0	274.4	0	1,59,600	1,59,600
						1	6x0.6x2.8	274.4	0	1,99,000	0	1,99,000
						2	19.47x1.2x3	4800	0	13,12,000	0	13,12,000
						7	8x2.5x2.8	3175.2	0	13,54,938	0	13,54,938
						1	7x2.5x2.8	358.4	0	2,17,705	0	2,17,705
Total						36		18497.6	1355.2	70,12,413	5,29,614	75,42,027
Pipe line						25	33413 mt	-	-	61,21,601	-	61,21,601
Kuhal	12	9170	-	24,22,611	-							2,42,2611
	1	1000	-	-	2,86,420							2,86,420
	-	-	-	-	-	11	3275	-	-	23,22,202	-	23,22,202
						2	1000 mt	-	-	-	6,14,533	6,14,533
Total	13	10170		24,22,611	2,86,420	13	-	-	-	23,22,202	6,14,533	56,45,766
Grand Total	34			34,21,164	2,86,420	243				315,44,694	29,95,419	3,49,65,858

P 2.082 Water capacity of renovated water bodies and new water structure

Particulars	Capacity (m ³)	Cost (₹)
Watershed	29727.3	3,49,65,858
Convergence	2126	32,81,839
Total	31853.3	3,82,47,697

After revival of existing and new recourses the availability of aquifer will enhanced and the ground water will available sufficient water for irrigation of produce and solve the drinking water problem during stress period.. It will be only possible if the latest available methodology and technique is adopted in the watershed catchment area. It will enhance storage capacity to 29727.3 (m³) with cost estimate of ₹ 3, 49, 65,858

One time supplementary irrigation available from the proposed schemes = 148.63 ha.
Area to be treated under watershed Harvesting structure = 2317.05 ha

Note: Total area is calculated by dividing total water available under watershed with depth of irrigation i.e. 0.02 cm

8.01 DRINKING WATER

The Project area falls in the rainfed area. Water resources are very limited which has been tapped fully by the local people for drinking and irrigation purposes. In earlier days there were water bodies (Bawaries) from which the people used to take water for drinking purpose. During the field visit and interaction with the local people and transit walk of the watershed area source some of fact regarding drinking water comes up.

- Dried up of the water bawaries due to the climate change.
- Heavy pressure on the existing water bodies due to increase in population.
- Less percolation for the existing Bawaries due to less range and drying up of Johar at the watershed area
- Presently people take the water through taps, which is provided in alternative days.

8.02 Availability of water in the panchayat

8.02(a): Availability of water before and project interventions

Sr. No.	Particulars	Capacity (lt)	
		Present	After Project intervention
1	Total supply of water per day	1365.46	1695.17
2	Total House holds	7818	7818
3	Total population	28804	28804
4	Water Available per house hold per day	0.175	0.217
5	Per capita Availability	0.047	0.059

8.03 Status of Drinking water in different wards of Panchayat

8.03 (a) Existing Structure of water bodies availability on daily and monthly basis

Panchayat	Name of Structure						Availability of water per day from the source	No. of months water available during the year
	Tap/ WST		Hand pump		Bawaries			
	No.	Capacity (m ³)	No.	Capacity (m ³)	No.	Capacity (m ³)		
Baila	3	24	-	-	20	62.475	60.56	9-12month/year
Chhapharan	9	103	8	0.4	11	34.375	96.46	9-12month/year
Chail Chowk	5	53	15	0.75	36	112.5	116.40	9-12month/year
DelagTikkeri	2	10	1	0.7	25	78.1	61.74	9-12month/year
Balhari	5	80	11	0.55	30	93.75	122.04	9-12month/year
Movi Seri	2	20	8	0.119	28	87.49	75.35	9-12month/year

Nandi	8	64.5	1	0.05	32	100	115.20	9-12month/year
Shilnoo	4	40	2	0.14	14	43.75	58.74	9-12month/year
Killing	3	13.5	2	0.14	19	59.375	51.13	9-12month/year
Bahawa	7	71	7	0.49	16	50.15	85.16	9-12month/year
Syanj	4	42	7	0.35	44	137.48	125.89	9-12month/year
Bassi	6	28	2	0.14	25	78.115	74.40	9-12month/year
Gharot	12	285	6	0.42	17	53.125	236.99	9-12month/year
Gohar	7	43	17	0.85	25	78.12	85.40	9-12month/year
Total	77	877	87	5.099	342	1068.805	1365.46	

8.04 Construction/Repair of Drinking water Structure with number and dimensions.

Name of schemes	Existing No.	Size (m)	Watershed amount (₹)	Estimated Budget (₹)
Source tank	1	2x1.8x1	22783	22783
Total			22,783	22,783
Bawari	1	2.5x2.6x1.8	16652	16652
	1	2.2x2.4x1.5	12465	12465
	1	2.5x2.5x1.5	18115	18115
	1	2.5x2.6x1.8	14336	14336
	1	3x2x1.5	15300	15300
	1	3x1.25x2	20597	20597
	1	2.8x2.5x1.5	12654	12654
	1	2.4x2x1.8	15713	15713
	1	1.2x8x3	78823	78823
	1	2.5x2.4x1.6	14600	14600
	1	2x2.5x1.8	15322	15322
	1	2.8x2.6x1.8	25150	25150
	1	3x2.5x1.4	15500	15500
	1	2.5x2.5x1.6	15650	15650
	1	2x2.5x1.2	14450	14450
	2	2.5x2.5x1.5	28450	28450
Total	18		3,33,777	3,33,777
Grand Total	19		3,56,560	3,56,560

8.05 Construction/Proposed of Drinking water Structure with number and dimensions.

Name of schemes	No. of structures	Size (mt)	Watershed Budget (₹)	No of structure	Convergence (₹)	Total Budget (₹)
Bawari	48	2.5x2.5x1.5	3184680	6	400664	3585344
Tank	6	3.2x3x2	552745	0	0	552745
	4	2.5x2.2x2	281365	0	0	281365
	2	3x2x2	175650	0	0	175650

Panihara	1	4.9x4.4x1.6	80500	0	0	80500
Well	-	10x2	-	1	228199	228199
Source	1	2x1.8x1	72850	0	0	72850
Tank	1	1.2x1.8x1	74700	0	0	74700
Total	63		44,22,490	7	6,28,863	50,51,353

8.06 Storage capacity and availability of water from existing structures

Sr. No.	Source	No.	Present capacity (lt.)	Availability of water/day from the source	No. of months water available during the year
	Collecting structure		Storage Capacity		
1	WST/Tap	77	877	613.9	9-12 month
2	Handpump	87	5.099	3.56	9-10 Months
3	Bawaries	342	1068.80	748	11 Months
	Total	506	1950.899	1365.46	

8.07 Critical Gaps to be covered (item/activity)

- 1) Regular Supply of drinking water
- 2) Proper drainage of the catchment area to the pound/Johar
- 3) To sensitization of the community for judicious use of water sources
- 4) After project intervention the fresh and hygienic drinking water will be available to the local community
- 5) Sufficient amount of water can be provided to the beneficiaries within the stress period
- 6) The supplement irrigation facility will provided to the local community
- 7) The livestock will get the water at the door step during stress period
- 8) The water cycle of the project area will improve
- 9) Local hedges and bushes to be planted catchment of the water bodies
- 10) The tradition custom may be revived through worship the specific water bodies to maintain sacredness of the bodies for example the coming up of newly bride groom during local festival which will establish sentimental relation on sustainable basis for the generation to come.

8.09 Outcome

Source	Present storage Capacity	Proposed Storage Capacity	Present availability	Quantity After Intervention (lt)
WST/tap	77	115.2	613.9	729.1
Hand pump	87	0	3.56	3.56
Bawaries	342	168.75	748	916.75
Well	0	40	0	40
Source Tank	0	5.76	0	5.76
Total		329.71	1365.46	1695.17

9.0 CONVERGENCE

The linkage of the IWMP-X, with the other development programme is also one of the important components. The possibilities of identifying different activities under the IWMP and their association with other activities of different line departments can be explore through convergence. This is the best tool to derive support from different line departments to share their experiences with the farmers and providing funds for the scheme works

The following activities can be converged from one head to another:

- Developmental activities like roads and irrigation facilities can be converged with PMGSY, PWD, IPH and MNREGA programs
- Employment Generation with MNREGA program run by Rural Development Department
- Water harvesting strictures like Irrigation tank and Roof water harvesting structure can be constructed under MNREGA. The PIA should prepared shelf with the association of Gram Panchayats and submit the same to BDO for taking financial and administrated approval from Deputy Commission –Cum –CEO DRDA.

Line Department Involvement

- To improve productivity, distribution of improved seeds, fertilizers, insecticides and pesticides can be procured from Agriculture and Horticulture department. Fruit Plants can be purchased from Dr YS Parmar University of Horticulture and Forestry Nauni, Solan and Horticulture Department. In case the fruits plants as per requirement is not available with these institutions NOC may obtained and purchase can be made from Registered Nursery owners within the state. Similarly the Fuel and fodder plants can be procured from Forest department in case the stock of these plants as per requirement are not available then obtained NOC and made the purchase from registered nursery owner of the State Govt.
- Construction of poly houses and vegetable Collection Centers at watershed level can be constructed under the Horticulture Technology Mission run by Department of Horticulture

- Diary development and sheep-goats rearing for the poor people can be conserved with **Animal Husbandry Department**.

9.901: Activity/ work to be taken other programme/scheme

Activity /work	Total no.	Programme /scheme for convergence	Agency/ Deptt.	Budget contribution				
				No.	Watershed Amount (₹)	No	Convergence amount (₹)	Total (₹)
Kachha talab	65	IWMP	DWDA/RD	61	6850073	4	472695	73,22,768
Roof Water	8	IWMP	DWDA/RD	7	525541	1	75649	6,01,190
Irrigation Tank	57	IWMP	DWDA/RD	51	5077365	6	977878	60,55,243
Farm pond (Brick lining)	37	IWMP	DWDA/RD	32	2232156	5	325050	25,57,206
Check Dam	36	IWMP	DWDA/RD	33	7012413	3	529614	75,42,027
Kuhali	25	IWMP	DWDA/RD	23	4744813	2	900953	56,45,766
Bawari	54	IWMP	DWDA/RD	48	3184680	6	400664	35,85,344
Well	2	IWMP	DWDA/RD	1	229229	1	228199	4,57,428
Total	293			265	2,98,56,270	28	39,10,702	3,37,66,972

10.0 LIVELIHOOD ACTIVITY

Income generating activity reported in the watershed areas are Carpentry, Khaddi, Knitting, Black smith, PHT, tent house, Masonry, Dairy farming, Cutting & tailoring, Cutting & pruning, Earthen pot making , basket making, mushroom, etc,. These income generating activities can transform the rural poor, if they have given more opportunities in the form of trainings, equipments and machine etc.,

The skills of local artisans can be improved by providing more opportunities at their door steps. Keeping in view the above mentioned facts, the following activities will be taken up under watershed program for innovative farmers. The provisions for training programme for the tradition rural artisan have been provided with in training budget to develop their capacity building.

DEVELOPMENT BLOCK GOHAR (IWMP X)

Project area in IWMP-X	6338 ha		
Total funds earmarked	9,50,70,000		
Funds earmarked for livelihood activities	85,56,300		
Funds to be provided as seed money	59,89,410	SHG's	Individual
		56,79,030	310380
Funds to be provided as Grant- in – Aid to SHG's	25,66,890	25,66,890	

LIVELIHOOD ACTION PLAN FOR IWMP-X

Sr. No	Schedule of activity	No of Group/SHG/individual	Project cost	Financial implications		
				SM	GIA	CL
1	Carpenter	8	7,76,830	2,00,000	3,88,415	3,88,415
2	Khaddi	26	5,45,370	6,43,410	2,72,685	2,72,685
3	Knitting	56	9,72,970	14,00,000	4,86,485	4,86,485
4	Black smith	2	90,000	51,885	45,000	45,000
5	PHT	9	2,78,850	2,20,000	1,39,425	1,39,425
6	Tent House	1	2,00,000	25,000	1,00,000	1,00,000
7	Masonry	24	1,40,000	6,00,000	7,00,000	7,00,000
8	Dairy farming	13	4,87,550	3,25,475	2,43,775	2,43,775
9	Cutting & Pruning	10	1,64,500	2,50,000	82,250	82,250
10	Cutting & tailoring	10	1,37,710	2,45,000	68,855	68,855
11	Earthen Pot making	1	40,000	25,000	20,000	20,000
12	Mushroom	4	1,00,000	1,00,000	20,000	20,000
13	Basket making	1	40,000	25,000	-	-
14	Vegetable	64	15,68,260	15,68,260	-	-
15	Vegetable (Individual)	42	2,10,380	2,10,380	-	-
16	Masonry (Individual)	14	70,000	70,000	-	-
17	Carpenter (Individual)	3	15,000	15,000	-	-
18	Black smith (Individual)	3	15,000	15,000	-	-
	Total		58,52,420	59,89,410	25,66,890	25,66,890

11.0 PRODUCTION SYSTEM & MICRO ENTERPRISES

P 11.111(b) Production System and Micro –Enterprises (10% Budget)

Name of Watershed: IWMP- X Production budget (10%): ₹ 95,07,000

Sr. No.	Activity	Input (KG/No./Plants)	Watershed Project funds (₹)
			Watershed Amount (₹)
1	Agriculture for crop seed replacement	4810 kg	1,75,325
	Fodder trees	53350 plants	533500
	Hybrid Grasses (seed)	1435 kg	1,72,200
2	Vermicompost	57 unit	3,99,000
3	Horticulture Plants	17516 plants	4,76,560
4	Vegetable seeds replacement	12102.9 kg	15,94,610
5	Vegetable collection centre	3 no	9,91,905
6	Deodar seedlings	5 no	22,000
7	Nursery Shed	2 no	52,000
8	Goatry	46 no	4,60,000
9	Sheep rearing	365 no	27,22,900
10	Bee keeping	8 no	80,000
11	Poultry	7 no	70,000
12	Dairy farming	54 no	16,20,000
13	Sailo pit (minerals)	4 no	1,20,000
14	Rabbit	1 no	60,00
15	Fishery	2 no	11,000
	Total		95,07,000

11.1 AGRICULTURE

The main stay of the farmers of watershed catchment area is agricultural crops grown such as wheat, maize, among cereal crops. The productivity of crop was observed very low due to rainfed condition and texture and structure of soil is rough. This can be increased through supplementary irrigation facilities and adoption of latest technology for conservation of fertile soil. The ridge to valley method is to be adopted for water management

11.112(a) Prevalent Farming System under Agriculture

1. Agriculture (Maize/ pulses + Wheat/mustard)
2. Agriculture + Animal Rearing
3. Agriculture + Horticulture (fruit crops+ Vegetables) + Animal Rearing
4. Agriculture + Labour + Rural Artisans

11.112(b) Present status of Agriculture Crops and Proposed interventions:

11.112(c) Cereals Crops

Crops grown : Maize& wheat
Total Productions : 43008 qt (based on PRA exercise)

On the demand of the farmer the following activities under Agriculture is proposed

Status	Particulars	Maize	Wheat
Existing	Area under cultivation	17585 bigha	11991 bigha
	Production	29317 qt.	13691 qt.
	Productivity	1.6 qt./ bigha	1.21qt./ bigha
	Variety	Kanchan & Apolo	Raj-3765 & Raj 3777
	Technology	Kera method	Kera method
Proposed	Increase in area	345.5 Bigha	251.6 Bigha
	Variety	Kanchan & Apolo	Kalyan,S-308 Sonalika
	Seed Quantity required by beneficiary group	1036.3 Kg	3773.7 Kg

Source: PRA Exercises, Regional Centre, NAEB, UHF

11.112(d) Requirement of improved seed under different crops

Particulars	Quantity (kg)	Market rate per Kg (₹)	Estimated Budget (₹)
Cereals			
Maize	1036.3	60	62115
Wheat	3773.7	30	113210
Total	4810		1,75,325

The quantity and variety of seeds for each crop has been determined by multiplying the seed rate per bighas with the total area cultivated under different crops i.e. Maize (3x 345), Wheat (15x 251.6)

11.112 (f) Critical Gaps in Agriculture Production

- Lack of irrigation facilities.
- Lack of scientific agricultural practices.

- Timely unavailability of seeds, fertilizers and chemicals for insect-pest management.
- Improved seed varieties not adequately used.

11.112(g) Marketing

- Agriculture produced are not sold in the market used only for self consumption

11.112(h) Project Interventions

a) Introduction of improved seed

Improved seed of maize, wheat and pulses will be introduced as demonstration units

- b) Introduction of Vermicompost-composting:** 57 units will be developed as demonstration, in the panchayat.

For better and productive utilization of FYM Vermicomposting is being recommended

Panchayat Name	Dimension (m)	No. of Units	Budget(₹)
Baila	3x1.80x0.45	13	91,000
Chhaprahan	3x1.80x0.45	3	21,000
Chail Chowk	3x1.80x0.45	2	14,000
Delag Tikkeri	3x1.80x0.45	6	42,000
Balhari	3x1.80x0.45	12	84,000
Nandi	3x1.80x0.45	10	70,000
Bahwa	3x1.80x0.45	2	14,000
Syanj	3x1.80x0.45	6	42,000
Bassi	3x1.80x0.45	2	14,000
Shilnoo	3x1.80x0.45	1	7,000
Total		57	3,99,000

c) Human Resource Development (HRD)/ Capacity Building and training in Agriculture

- Training on cultivation practices of various agriculture crops.
- Training on insects & pests management.
- Training on vermin composting for organic farming
- Exposure visits and experience sharing out side state progressive farmers

11.112(h) Project Impact

Crops	Existing area	Addition in area	Total area	Seed requirement after project intervention (kg)	Amount (₹)
Maize	17585	345	17930.8	1036.3	62,115
Wheat	11991	251.6	12242.6	3773.7	1,13,210
Total	29576	596.6	30173.4	4810	1,75,325

Nursery Shed

Name of Panchayat	Size (mt)	Beneficiaries	Amount (₹)
Nandi	6x4	1	27,000
Movi Seri	6x4	1	25,000
Total		2	52,000

11.2 HORTICULTURE

The chapter deals with the horticulture crops among fruits Apple, pomegranate, apricot, lemon, mango, peach, plum, orange, walnut, lemon, persimmon etc. are grown. The watershed area is also cultivated with different types of vegetables. These include tomato, potato, beans, capsicum, peas, cauliflower, Garlic, ginger etc. but only for self consumption.

11.113a Prevalent Farming Practices under Horticulture

- Horticulture + vegetables
- Vegetable + Animal rearing
- Vegetable crops (Cabbage+Beans) (Capsicum+Tomato) (Cauliflower +Peas)
- Fruit crop (Lemon + Pear+ Plum + Pomegranate + Apricot)
- Agriculture + Horticulture + Animal rearing.

11.113(b) Present status of horticulture crops and proposed interventions:

11.113(c) Horticulture

Status	Particular	Apple	Peach	Apricot	Pomegranate	Lemon	Plum	Walnut	Orange	Galgal	Mango	Persimmon
Existing	Area under cultivation	140 bigha	7 bighas	13 bighas	22 bighas	5 bighas	28 bighas	- bighas	- bighas	- bighas	- bighas	- bighas
	Present Production	4200 ton	49 ton	143 ton	73 ton	5 ton	224 ton	- ton	- ton	- ton	- ton	- ton
	Productivity	30 qt/bigha	7 qt/bigha	11 qt/bigha	3.3 qt/bigha	1 qt/bigha	8 qt/bigha	-qt/bigha	- qt/bigha	- qt/bigha	- qt/bigha	- qt/bigha
	Variety	Red chief, Top red, spur										
	Technology	indigenous	indigenous	indigenous	indigenous	indigenous	indigenous	indigenous	indigenous	indigenous	indigenous	indigenous
Proposed	Increase in area	42bighas	28 bighas	63 bighas	133 bighas	78 bighas	85 bighas	8 bighas	2 bighas	7 bighas	5 bighas	38 bighas
	Varieties	Spur	July alberta		Kandhari, Ganesh	Kazi, dholakuan	Santa roja, meri koja					
	Plants requirement	1260 plants	1092 plants	1386 plants	4256 plants	3042plants	1870plants	96 plants	52 plants	182 plants	50 plants	950 plants

Note: Two mixed plants (/species) will be distributed in Move Seri Panchayat as demonstration to per household respectably

11.113(d) Proposed fruit crop intervention in the Project Area

Horticulture plants

Name of the panchayat	Area		Apple		Peach		Apricot		Pomegranate		Lemon	
	No. of household	Area (bigah)	No. of Plant	Cost (₹) @ 40/Plant	No. of Plant	Cost (₹) @ 25/Plant	No. of Plant	Cost (₹) @ 25/Plant	No. of Plant	Cost (₹) @ 50/Plant	No. of Plant	Cost (₹) @ 25/Plant
Baila	11	26	-	-	78	1950	88	2200	-	-	39	975
Chhapharan	1	3	-	-	-	-	-	-	-	-	-	-
Chail Chowk	5	8	60	2400	78	1950	-	-	-	-	-	-
DelagTikkeri	45	77	-	-	819	20475	-	-	576	14400	117	2925
Balhari	10	13	-	-	-	-	-	-	-	-	312	7800
Movi Seri	6	7	-	-	-	-	66	1650	64	1600	-	-
Demo.	561	-	-	-	-	-	1683	42075	-	-	-	-
Nandi	8	23	-	-	-	-	66	1650	416	10400	78	1950
Shilnoo	11	19	60	2400	-	-	418	10450	-	-	-	-
Killing	30	49	-	-	-	-	748	18700	-	-	351	8775
Bahawa	2	5	-	-	-	-	-	-	64	1600	117	2925
Syanj	41	104	-	-	117	2925	-	-	1600	40000	468	11700
Bassi	39	100	180	7200	-	-	-	-	1312	32800	1404	35100
Gharot	9	30	900	36000	-	-	-	-	-	-	-	-
Gohar	19	25	60	2400	-	-	-	-	224	5600	156	3900
Total	798	489	1260	50,400	1092	27,300	3069	76,725	4256	1,06,400	3042	76,050

11.113(d-1) Proposed fruit crop intervention in the Project Area

Plum		Walnut		Orange		Galgal		Mango		Persimmon		Total plants	Grand total
No. of Plant	Cost (₹) @ 25/Plant	No. of Plant	Cost (₹) @ 60/Plant	No. of Plant	Cost (₹) @ 25/PI	No. of Plant	Cost (₹) @ 25/PI	No. of Plant	Cost (₹) @ 25/PI	No. of Plant	Cost (₹) @ 40/PI		
418	10450	-	-	-	-	-	-	-	-	-	-	623	15,575
-	-	-	-	-	-	-	-	30	750	-	-	30	750
88	2200	-	-	-	-	-	-	-	-	-	-	226	6,550
770	19250	-	-	-	-	-	-	-	-	-	-	2282	57,050
-	-	-	-	-	-	130	3250	-	-	-	-	442	11,050
44	1100	-	-	-	-	-	-	-	-	-	-	174	43,50
1683	42075	-	-	-	-	-	-	-	-	-	-	3366	84,150
110	2750	-	-	-	-	-	-	-	-	-	-	670	16,750
-	-	-	-	-	-	-	-	-	-	-	-	478	12,850
88	2200	-	-	-	-	52	1300	-	-	-	-	1239	30,975
-	-	-	-	-	-	-	-	-	-	-	-	181	4,525
264	6600	24	1440	52	1300	-	-	20	500	475	19000	3020	83,465
88	2200	72	4320	-	-	-	-	-	-	175	7000	3231	88,620
-	-	-	-	-	-	-	-	-	-	-	-	900	36,000
-	-	-	-	-	-	-	-	-	-	300	12000	740	23,900
1870	88,825	96	5,760	52	1,300	182	4,550	50	1,250	950	38,000	17,602	4,76,560

11.113(f) Vegetables crops

Status	Vegetable crops	Bean	Peas	Capsicum	Potato	Cauliflower	Tomato	Ginger	Garlic
Existing	Area under cultivation	75 bighas	1823 bighas	12 bighas	172 bighas	275 bighas	85 bighas	45 bighas	105 bighas
	Present Production	225 qt	7292 qt	60 qt	2064 qt	1650 qt	1530 qt	135 qt	630 qt
	Productivity	3 qt/bighas	4 qt/bigha	5 qt/bigha	12 qt/bigha	6 qt/bigha	18 qt/bigha	3 qt/bigha	6 qt/bigha
	Variety	Falguni	Azad, P-1, Linken, pencil	Doller	Improved	Improved	Improved	Improved	Improved
	Technology	Indigenous	Indigenous	Indigenous	Indigenous	Indigenous	Indigenous	Indigenous	Indigenous
Proposed	Increase in area	43.5 bighas	936 bighas	7 bighas	25 bighas	179 bighas	97 bighas	15 bighas	39.5 bighas
	Variety	Falguni	Hybrid	Bhart/dollar	Kufri jyoti	Mega Shweta	Himsona/Surya	Improved	Improved
	Total seed requirement	174 kg	6551 kg	210 gm	2500 kg	1.790 gm	970 kg	900 kg	1975 kg

11.113(g) Critical Gaps in Horticulture Production

- Lack of vegetable collection centre
- Lack of sufficient irrigation facilities
- Quality seedling of fruit crop.
- Lack of technical knowledge for cultural operation
- Knowledge about Post Harvesting Technology.
- Lack of value addition.
- Availability of fertilizers
- Lack of post harvesting Management

11.113(h) Marketing

Vegetable produced are sold at Gohar , Mandi , Seraj

11.113(i) Project Interventions

- a) Supply of improved varieties of fruit crops seedlings.
- b) Vegetable collection centre.
- c) Training on cultural operations and on value addition.
- d) Farm based enterprises
- e) Irrigation through moisture conservation measures
- f) Drip irrigation Sprinkler
- g) Vegetable seed production area

11.113(j) Community requirement of Improved Vegetable Seed in Project Area

Crops	Seed requirement Quantity(Kg)	Unit rate per kg @ (₹)	Estimated Budget(₹)
Beans	174	500/kg	87,000
Peas	6551	120 or 200/kg	10,53,460
Capsicum	0.210 gm	500/10 gm	10,500
Cauliflower	1.790 gm	400/10gm	71,600
Potato	2500	60/kg	1,50,000
Ginger	900	60/kg	45,000
Tomtao	0.970 gm	400/10 gm	38,800
Garlic	1975	70/kg	1,38,250
Total	12102.9		15,94,610

The quantity and varieties of seeds for each vegetable crop has been determined by multiplying the seed rate per bigha with the total area cultivated under different crops i.e. Beans (43.5x 4kg), Peas (936x7 kg), Capsicum(7x30 gm), potato (25x100 kg), ginger (15x60 kg), garlic (39.5x50 kg), cauliflower (179x10 gm).

11.113(k) Impact/Project Outcomes

1. Skill development /capacity building of 40 farmers
2. Conventional Cropping pattern changed. Area under vegetable increased (1342 bighas)
3. Mono crop to cash crop
4. Farming systems changed. Areas under fruit crops increased (489 bighas)

5. Production of fruit and vegetable enhanced through supplementary irrigation facility
6. Livelihood of 40 more farming families linked with horticulture practice.

11.113(I) Vegetable Collection Centre

Panchayat	No.	Size (mt)	Beneficiaries	Cost (₹)
Balhari	1	4.2x3.2	455	2,89,970
Syanj	1	7.5x3.2	1085	3,01,935
Baila	1	7.5x3.2	361	4,00,000
Total	3		1901	9,91,905

11.3 ANIMAL HUSBANDRY

Animal rearing is the secondary thought for livelihood activity after Agriculture. Animals are reared by farmers mainly for milk, FYM, meat as well as for wool. Cows and buffaloes are reared for milk production which is used for self consumption as well as sale. Milch animals are improved as well as local. Hence milk production is low due to non availability of green fodder and nutrient feeding to the animals.

11.301 Milk Production and fodder requirement

Total no. of milch cattle in the watershed area is 8791 and average production of milk per day is 5 lt. from buffalo's local cows, 2 lt. and cow improved 7 lt. per day.

11.301(a) Average and Total milk production

Milch cattle	Milch	Dry	Total	Average milk production lt./day	Total production (lt.)
Buffaloes	827	254	573	5	2865
Cow(Local)	1402	446	956	2	1912
Cow (improved)	6562	1786	4776	7	33432
Total	8791	2486	6305		38209

11.301 (b) Fodder availability, requirement and Deficit (tons)

Green fodder available in project area is 42924 tons whereas dry fodder available is 21462 ton. Total 64386 ton fodder is available in project area. But requirement of green fodder is 100157 ton whereas requirement of dry fodder is 31478 ton. Total fodder required is 131635 ton. Deficit of green fodder in project area is 57233 ton and that of dry fodder is 10016 tons.

11.301(b-i) Fodder availability, requirement and Deficit (tons)

Available			Required			Deficit		
Green	Dry	Total	Green	Dry	Total	Green	Dry	Total
42924	21462	64386	100157	31478	131635	57233	10016	67249

Total animal-

Note - **Available Fodder**

Green - 30kg/day x 30 days x 6 months x Total live stock

Dry - 15 kg/day x 30 days x 6 months x Total live stock

Required Fodder

Green - 35 kg/day x 30 days x 12 months x Total live stock

Dry - 11 kg/day x 30 days x 12 months x Total live stock

11.301(b-ii) Gap between Demand and supply of total Fodder

Supply	64386
Demand	131635
Deficit	67249

11.301(c) Project interventions

- Plantation and cultivation of fodder trees and grasses
- Construction of talabs , Johars in grass land and community lands
- Training/Capacity building

a) Plantation and cultivation of fodder trees and grasses

Species:

Tree: Beul, Ban and Morus etc.

Grasses: Steria, Napeir and orchard grasses etc.

11.301(c-i): Budget form Production system and micro enterprises

Name of Panchayat	Fodder Trees			Grasses				Grand Total
	Area (ha.)	Unit cost per ha ₹	Budget @ 11000 /ha	Area (ha.)	Quantity of seeds (kg) @ 35kg /ha	Rate per Kg (₹)	Budget ₹	
Baila	5	11000	55,000	2.5	87.5	120	10,500	65,500
Chhapharan	2	11000	22,000	2	70	120	8,400	30,400
Chail Chowk	3	11000	33,000	4	140	120	16,800	49,800
DelagTikkeri	3	11000	33,000	2.5	87.5	120	10,500	43,500
Balhari	3	11000	33,000	3	105	120	12,600	45,600
Movi Seri	2.5	11000	27,500	2.5	87.5	120	10,500	38,000
Nandi	5	11000	55,000	3.5	122.5	120	14,700	69,700
Shilnoo	4	11000	44,000	2.5	87.5	120	10,500	54,500
Killing	1.5	11000	16,500	2	70	120	8,400	24,900

Bahawa	2.5	11000	27,500	2	70	120	8,400	35,900
Syanj	7	11000	77,000	7	245	120	29,400	1,06,400
Bassi	5	11000	55,000	2.5	87.5	120	10,500	65,500
Gharot	3	11000	33,000	3	105	120	12,600	45,600
Gohar	2	11000	22,000	2	70	120	8,400	30,400
Total	48.5		5,33,500	41			1,72,200	7,05,700

301 (c-ii): Variety and rates of fodder species and hybrid grasses Budget form Production system and micro enterprises

Activity /Item	Breed	Area	Rate per ha. (₹)	Total cost (₹)
Fodder	Beul, Bamboo, Ban and Morus	48.5	11000	5,33,500
Grasses	Red clover, Steria and orchard grasses	41	4200	1,72,200
Total		89.5		7,05,700

- b) Construction of talabs , Johars in grass land and community lands
c) Training and Capacity Building

- Live stock management
- Animal Health
- Artificial insemination
- Improved grasses / Fodder trees
- Exposure visits

Number of Training

- Four trainings with 5-7 farmers in each trainings
- Exposure visits for 5-7 farmers

11.301(d) Project outcome/impact

11.301(d-i) Estimated production of milk after project intervention

Milk production after project intervention will increase to 3 to 9 lt. /day and total production of milk after project intervention will be 49290 litres

11.301(d-ii) Milk production from cows and buffaloes after project intervention

Milch cattle	Milch	Dry	Total	Average milk production lt./day	Total production (lt.)
Buffaloes	827	254	573	6	3438
Cow(Local)	1402	446	956	3	2868
Cow (improved)	6562	1786	4776	9	42984
Total	8791	2486	6305		49290

11.301(d-iv) Total milk production before and after project intervention.

Increase in milk production is 11081 lt. with total production of 49290 lt.

Milch cattle	Production Before project (lt.)	Production After project (lt.)	Quantity of milk Increase after project (lt.)
Buffaloes	2865	3438	573
Cow(Local)	1912	2868	956
Cow (improved)	33432	42984	9552
Total	38209	49290	11081

Sailo Pit

Name of Panchayat	Activity	Amount (₹)
Balhari	Minerals(Sailopit)	60,000
Chhaprahan	Minerals (Sailopit)	30,000
Syanj	Minerals (Sailopit)	30,000
Total		3,30,000

12.0 PISCICULTURE

Fisheries can be one of the additional sources of income to the farmers of the watershed area, but due to the lack of plenty of fresh water, the people enable to take up this activity as additional source of income. Secondly the people of the watershed area are practicing agriculture, horticulture and vegetable cultivation which is a main stay of the farmers. Hence fish cultivation cannot suggest for the watershed areas of the Seraj Block.

12.101a Existing and Proposed water bodies for fish culture

Existing water bodies			Proposed water bodies			Owner ship private /common
No	Size (ft)	location	No	Size (ft)	Location	
1	25x6x1.5	Dul	1	10x5x1.5	Tilli	Private

12.101b Availability and requirement of fish seed /fingerlings

Ward	Existing families	Proposed families	Present quantity of fish	Requirement of fish seed	Breeds
Kandi Tilli	-	1	-	2500	Golden
Gohar-I	1	-	2000	1167	Mahasheer

12.102 Project Interventions

- Introducing of fisheries among more families
- Requirement of improved seed (fingerlings)
- Training on fish culture

ABBREVIATION USED

BPL	: Below Poverty Line
DPR	: Detailed Project Report
DRDA	: District Rural Development Agency
GIS	: Geographical Information System
ha	: hectare
IPH	: Irrigation and Public Health
IRDP	: Integrated Rural Development Programme
IWMP	: Integrated Watershed Management Programme
lt	: litre
m	: meter
MNREGA	: Mahatma Gandhi National Rural Employment Guarantee Act.
NABARD	: National Bank of Agriculture and Rural Development
NDRI	: National Dairy Research Institute
OBC	: Other Backward Classes
SC	: Scheduled Caste
ST	: Scheduled Tribe
EPA	: Entry Point Activity
SHG	: Self Help Group
WDF	: Watershed Development Fund
DWDA	: District Watershed Development Agency
VCC	: Vegetable Collection Centre
PHT	: Post Harvest Technology
MAP	: Medicinal & Aromatic Plant
WST	: Water Storage Tank
AAP	: Annual Action Plan
RWHT	: Roof Water Harvesting Tank
UGs	: User Groups
PRA	: Participatory Rural Appraisal
PIA	: Project Implementing Agency
PRI	: Panchayati Raj Institution
WDT	: Watershed Development Team
GIA	: Grant in Aid
SM	: Seed Money
BL	: Bank Loan
LDPE	: Low Density Polyethylene

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IWMP – X Gohar Block

Add/ View Base Line Survey

Project* IWMP- X			
Total Geographical Area of Project (Lakh Hectares)	0.07456		
Project Area Covering*	0.06338		
Treatable Area			
Wasteland (Lakh Hectares)	0.04131	Rainfed Agricultural Land (Lakh Hectares)	0.02207
Total Cropped Area (Lakh Hectares)	0.04432	Net Sown Area (Lakh hectares)	0.02261
Total no. of Water Storage Structures	235	Total no. of Water Extracting	342 Units
Total storage capacity of water Storage structures (cubic meters)	32997.13 m ³		
No. of Household			
SC	3298		
Others	4276	ST/OBC	244
Total Population in the Project Area	28804	No. of Household of Landless People	Nil
Total no. of BPL household	458		
No. of Small Farmer's House hold	1563	No. of Marginal Farmer's Household	6255
Depth of Ground Water (meters) below Ground Level			
		Pre monsoon	Post monsoon
No of person days of seasonal migration		70	30

Sr. no.	Name of Gram Panchayat/ watershed	Micro watershed code
1.	Bahwa	1B1C6A2b, 1B1C6A2a, 1B1C6A1e, 1B1C6A1d
2.	Baila	1B1C6D2a, 1B1C6D2b, 1B1C6A1b
3.	Balhari	1B1C6D1a, 1B1C6D1d
4.	Bassi	1B1C6A1d, 1B1C6A1e
5.	Chail chowk	1B1C6C2e, 1B1C6C2d, 1B1C6B1a
6.	Chhaprahan	1B1C6A1a, 1B1C6A1b
7.	Delag tikkari	1B1C6B1a, 1B1C6D1b
8.	Gharot	1A2B1I2c, 1A2B1I2a, 1A2B1I1d, 1A2B1I2b, 1A2B1I1c, 1A2B1K1a, 1A2B1Q2c, 1A2B1K1b, 1A2B1J2d, 1A2B1J2c
9.	Gohar	1B1C6A2b, 1B1C6A1e, 1B1C6A2c
10.	Killing	1B1C6D1c
11.	Nandi	1B1C6A1b, 1B1C6D1c, 1B1C6D2a, 1B1C6L2a, 1B1C6A1c
12.	Syanj	1B1C6A1c, 1B1C6A1d, 1B1BC6D1c
13.	Seri	1B1C6D1b, 1B1C6D1d, 1B1C6D1c
14.	Shilhanu	1B1C6D1c, 1B1C6D2a