

1.0 INTRODUCTION

1.1 INTRODUCTION OF THE PROJECT AREA

The IWMP-XVIII Shimla (Integrated Watershed Management Programme) in Narkanda Block was sanctioned in the year 2011-12 under 3rd batch by the ministry of rural development (GoI). In Himachal Pradesh the state government rural development department is executing the project. The District Rural Development Agency in Shimla 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 Narkanda Block. There are 04 gram Panchayat in Narkanda Block. The IWMP Project is being started in 8 gram Panchayat in different micro watershed. The major catchment area is Hatu Peak which leads different Nallah of the watershed area. The whole of the water of the watershed catchment area is drawn into the Satluj area. The major feature of the watershed area are as under:-

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

1.1a Sanctioned Budgetary Provisions

Name of Project	: IWMP- XVIII Narkanda
Geographical Area	: 3826 ha
Project Area	: 3826 ha
Sanctioned Amount	:5,73,90,000

Micro watershed/Gram Panchayats under IWMP-XVIII Narkanda

Catchment area	Sr. No.	Gram Panchayat	No. of villages	Area (ha.)	Amount (₹)
Sutlej	1.	Deeb	09	1252	18780000
	2.	Madhawani	07	1092	16380000
	3.	Shilli Khaneti	06	665	9975000
	4.	Zar	12	817	12255000
Total			34	3826	5,73,90,000

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%	5739000
2	Monitoring	1%	573900
3	Evaluation	1%	573900
B)	Preparatory Phase		
1	Entry point activities	4%	2295600
2	Institution & capacity building	5%	2869500
3	Detailed Project Report (DPR)	1%	573900
C)	Watershed Work Phase		
1	Watershed Development Works	56%	32138400
2	Livelihood activities for the asset less persons	9%	5165100
3	Production system & micro enterprises	10%	5739000
D)	Consolidation phase	3%	1721700
	Total	100%	5,73,90,000

1.1d Methodology

A. District level exercise

- a. Collection of data at district level
 1. DRDA and Line department
- b. Meeting with CEO (DRDA), 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 /Junior 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

The district Shimla was formed by merging of old princely states of Belsan, Bajhi, Bushar, Darkoti, Throch, Dari, Kumarsain, Jubbal, Dartsn, Seraj etc. The name of the Shimla district was derived from goddess Shiyamali. It was summer capital of the British India. It was also the capital of East Punjab before Independence. In 15 April 1948 Shimla was merged with Himachal and was made district in 1966. In 1971 it was made capital of the Himachal Pradesh.

2.101 GEOGRAPHICAL FEATURE

Himachal Pradesh has 12 districts and Shimla is one of them. Both state and district H.Q is situated in Shimla town. Shimla 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 Utrakhand and North West by Seraj and Shimla 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

Shimla had population of 8,13,384 (2011) of which males and females were 4,24,486 and 3,88,898 respectively. In 2001 census, Shimla had a population of 7,22,502 of which males were 380,996 and remaining 341,506 were females. In 2001, the schedule caste population is about 1,88,787 and schedule tribes are 4112(2001). The density of population is 159(2011) and the literacy rate is 85 percent.

2.103 RIVERS

The major rivers following in the district are Satluj, Pabbar, Giri, and Nogli Khad.

2.104 CLIMATE

The district has temperate climate. The average annual precipitation is 1028 mm and the temperature of the district ranges from subfreezing to 40⁰ Celsius. The average temperature during summer is between 20⁰ C to 40⁰C, and between -7⁰ C and 10⁰ C in winter. Precipitation varies from 24 mm in November to 415 mm in July. Snowfall in the region, takes place in the month of December, has lately (over the last 15 years) been happening in January or early February every year. There are four broad seasons December wards the outset of winter which continues till the end of February, some time continuing till the month of March and it is stormy with occasional frosts. The snow and sleet fall in the upper regions while rains are confined to lower area from March onward. Weather begins to warm up from March to June. Summer is followed by monsoon and humidity is high. Monsoon ends in mid of September and autumn begins and last till the end of November. Maximum temperature varies from 15.4⁰ C to 30.6⁰ C (June) and -2⁰ C to 15⁰ C during winter. Annual precipitation varies from 447 to 1084mm.

2.105 SOIL

On the whole soils are young and thin deep ploughing is neither possible nor advisable. Generally the soil on the northern slope is thicker than those of southern slopes. The texture of the soil ranges from silt loam to clay loam, the colour varies from dark to brown. The organic content is higher, Nitrogen availability is from medium to high, and Potash availability is medium. The presence of Phosphorous is from low to medium. The soil reaction ranges from moderately acidic to neutral.

2.106 IRRIGATION

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

2.107 LAND CLASSIFICATIONS

Table 2.107 (I): Various type of lands available along with areas (ha)

1	Total geographical area	4088.88
2	Forest	1193.31
3	Barren and unculturable land	488.38
4	Land put to Non agriculture land	145.56
5	Culturable waste	136.68
6	Permanent pasture	94.40
7	Land under miscellaneous trees, crops etc	2030.47

Source: Statistical out line of HP 2011-12

2.108 (a) AGRICULTURE

The Rabi and Kharif are the two cropping seasons of the district. The major cereal crops of the district are Wheat, Barley, maize, and among pulses Rajmash, Mash and Kulath etc. are grown in the watershed area.

2.108(I) Area under agriculture crops

Sr. No.	Crop	Area
1	Paddy	2923 ha
2	Maize	16685
3	Wheat	19758
4	Barley	4574
5	Pulses	5544
6	Others	6572

Note: statistical outline of H.P. 2011-12

2.108 (b) HORTICULTURE

Shimla District is one of the pioneer districts for fruit crops. Apple is the main crop of the district. The climate of the district is suitable for apple, pear, almond, walnut and sub tropical fruits. In the year 2011-12 total cultivated area under fruit crop was 42927.59 hectare and the total production of the fruit in the same year was 254348metric ton out of which the apple production was 250375 metric ton which was 97.9 of the total production of fruit crops (statistical outline of H.P. 2011-12).

2.108 (c) VEGETABLE

Vegetable is also one of the sources of cash crops in district Shimla. 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 Narkanda Block

The Narkanda Development Block is situated at the distance of 65 km from the district Headquarter. The altitude of the Narkanda block is 8610 feet ((abmsl). The whole of the block area is having lower hills to higher hills. The longitude of the block headquarter $30^{\circ}51'92''N$ and latitude $77^{\circ}10'10''$. The block is surrounded by the Jubbal and Kotkhai block in North East. Theog in South, Rampur block in West and South West by Basantpur Block. The main cash crop of the area is horticulture and vegetable cultivation.

2.201 Population

The total population of the Narkanda Block is 62,006 person. The population comprises two categories i.e. General and Schedule Caste. No other caste was found in the Narkanda Block. The defend area as under:

A. General Categories

i. Male	:23,693
ii. Female	: 22,901

B. Schedule Caste

i. Male	:7820
ii. Female	:7592

Total : 62,006

Table : Population of Gram Panchayat covered under IWMP Project XVIII

Name of Panchayat	General Families			SC Families		
	Male	Female	Total	Male	Female	Total
Mailan	770	665	1435	324	228	552
Khaneti	686	597	1283	195	170	365
Jaar	1251	1285	2536	335	367	702
Kotgarh	747	793	1540	207	232	439
Kirti	1257	1208	2465	508	489	997
Madhavni	564	561	1125	256	260	516
Jarol	1522	1414	2936	398	314	712
Deeb	1133	1083	2216	193	203	396
Total	7930	7606	15536	2416	2263	4679

Source: Population censuses 2010-11 of Narkanda block

2.201 Climate

The climate of the Narkanda block is suitable for every kinds of crops. The people are mainly horticulture growing crops; Paddy, Barely, Maize and Pulses etc. are also grown at micro level. The major forest species in the area is kail, diyar, kharshu, ban, maru, beulcholi etc. The average rainfall in the area ranges from 800mm to 1600mm and higher peaks received snow fall from 2 feet to 6 feet during winter season.

2.203 Soil

The soil status of the project area is very deep and the type of the soil is clay, sandy loam and black. The water retaining capacity is moderate due to the sloppy land. The rain water runs away to rivers. The land use pattern of the Narkanda block/ Teh. is under

Table: Land use pattern (Hectare)

Name of Panchayat	Total land	Un Irrigated land	Irrigated land	Agri	Fallow	Barren	Pasture	Ghasni	Forest	Other
Tehsil Kumar sain	23812	6104	195	6299	604	711	7777	1231	6278	912

WATERSHED AREA

2.1 Socio economic profile of IWMP-XVIII Shimla

- Total number of Panchayat : 04
- Total number of families : 1894
- Total population of the Panchayat: 7357 (Male and Female=49.7%)
- General families : 1348 (Male = 2646, Female= 2607) (71.4%)
- Schedule caste families : 534 (Male = 1019, Female= 1013) (27.61%)
- Schedule Tribe families : 12 (Male = 30, Female = 42) (0.97%)

2.101: Demographic profile of different Panchayats

Name of Panchayat	General Families				SC Families				ST Families			
	No. of families	Male	Female	Total	No. of families	Male	Female	Total	No. of families	Male	Female	Total
Deeb	442	878	926	1804	106	209	207	416	-	-	-	-
Madhawani	152	306	337	643	135	267	276	543	2	4	8	12
Shilli khaneti	247	505	450	955	106	214	188	402	-	-	-	-
Zar	507	957	894	1851	187	329	342	671	10	26	34	60
Total	1348	2646	2607	5253	534	1019	1013	2032	12	30	42	72

Source: Gram Panchayat, 2012

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

Name of panchayat	Antodaya			BPL			Grand Total		
	General	SC	Total	General	SC	Total	Antodaya	BPL	Total
Deeb	25	08	33	61	30	91	33	91	124
Madhawani	06	17	23	05	07	12	23	12	35
Shilli khaneti	23	11	34	14	04	18	34	18	52
Zar	47	38	85	23	22	45	85	45	130
Total	101	74	175	103	63	166	175	166	341

Source: Gram Panchayat, 2012

2.301: The land use pattern of IWMP-XVIII

Name of Panchayat	Total land	Un Irrigated land	Irrigated land	Agri+Horti.+Veg.	Fallow	Barren	Pasture	Ghasni	Forest	Other
Deeb	1252	277	73	350	05	19	43	61	718	56
Madhawani	1092	-	-	214	-	-	159	34	635	50
Shilli khaneti	665	-	-	206	-	-	170	05	213	71
Zar	817	314	34	348	04	39	283	76	-	67
Total	3826	591	107	1118	09	58	655	176	1566	244

Source: Patwar Circle

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), sheep, goats, bullocks 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			Calf	Goat	Sheep	Grand Total
	Milch	Dry	Total	Milch	Dry	Total				
Shilli khaneti	14	05	19	143	42	185	55	20	25	304
Madhawani	24	07	31	270	62	332	103	40	12	518
Deeb	-	-	-	370	55	425	132	55	-	612
Zar	39	11	50	344	46	390	132	180	35	787
Total	77	23	100	1127	205	1332	422	295	72	2221

Source: Household Survey

3.0 SWOT ANALYSES

The critical analysis of strengths, weaknesses, opportunities and threats of the watershed area is a good analysis for developing strategies/ programmes as it provides valuable potentials, constraints, opportunities and threats based on the primary, secondary, technical data and transect walk was carried out during the field visit of the watershed area of Narkanda Block.

P3.1031 Strengths of the watershed area

- The road facilities is available in every micro-watershed
- Apple is the main source of income and every kind of tropical and sub-tropical fruits plant can be grown in the project area
- Deep soil status is very suitable for agriculture and horticulture crops
- Farmers are very innovative and ready to adopt new technology
- The nearest market is at Narkanda (Barubagh and Dhalli (Shimla) and Chandigarh
- Regards of ecology by local community

P3.1032 Weaknesses

- The watershed area is rainfed
- Fragmented land holding
- Absentee landlordism is found in the watershed area
- Steep slop of the watershed area causing huge to soil erosion
- Labour problem, most of the labour part in orchard/field is being done by the hired labour (Ghurkhalis)
- Young generation has less interest for farming horticulture cultivation
- The livestock population decreasing day by day
- People have grown only mono fruit crop i.e. Apples, Cherry

P3.1033 Opportunities

- Rain water harvesting can be only source for irrigation for vegetable and fruit crop
- Huge potentials for diversification of Apple crops i.e. Cherry, Pear, Walnut, Almonds, Lemon, Guava etc. in low lying areas
- Good scope for vegetable growing in Nahal ward of Zar Gram Panchayat, Shanwad ward of Gram Panchayat Deeb and Madhawani Gram Panchayat
- Dairy development
- Bee keeping
- Floriculture can be also one of the source of income in the micro watershed area
- Snow water harvesting in Shilli Khaneti Gram Panchayat
- Organic Farming
- Construction of Check Dam along Nallah side
- Scope of inter cropping i.e. Vegetable and Flower in orchard
- Bamboo plantation along Nallah side which can be used for installing hail nets
- Cutting and pruning training for BPL and young generation will generate the employment

P3.034 Threats

- The apple orchards are very old and is losing productivity year after year
- Problem of labour
- Fear of hail storm
- Gram Panchayat Zar is situated fire prone area
- Excessive use of fertilizer which will ultimately loose the productivity of Horticulture and Agriculture crops
- Declining of traditional rural artisans
- Less interest of the community to maintain natural resources
- Stray animals are also one of the major threats in the project area
- Individual approach forwards developmental programmes

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 transect walk are as given below.

4.1 Entry point activities suggested at different locations of watershed

Name of Panchayat	Activity	No. of structure	Unit cost Budget (₹)	Amount (₹)	Purpose
Deeb	VCC	1	300000	300000	
	Pipe line	1	40000	40000	Irrigation provided to the beneficiaries
	Pipe line	1	35000	35000	
	Drainage	1	150000	150000	
	Drainage	1	36000	36000	
	Bawari	1	40000	40000	Drinking water provided to the beneficiaries
	Check Dam	1	150000	150000	
Total		7		7,51,000	
Madhawani	VCC	2	600000	600000	
	WST	3	300000	300000	Irrigation provided to the beneficiaries
	WST	1	70000	70000	
Total		6		9,70,000	
Shilli khaneti	VCC	1	250000	250000	
	VCC	1	150000	150000	Irrigation provided to the beneficiaries
Total		2		4,00,000	
Zar	VCC	1	300000	300000	
	WST	1	100000	100000	Irrigation provided to the beneficiaries
	WST	1	70000	70000	
	Bawari	1	30000	30000	Drinking water provided to the beneficiaries
Total		4		5,00,000	
Grand Total				26,21,000	

Note: As per EPA Budget sanctioned by DWDA is ₹26,21,000 whereas actual amount 4% is ₹22,95,600

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

- Block level
- DRDA 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 progressive farmers	All	Awareness camps on watershed management/ organic farming, orchard management etc.	Panchayat level	1	6	120000
PRI, Pradhan ward members & Secretary	60 persons	Training and exposure visit on watershed management	Block level/ Institutional/ University	3-7	6	270000
Self Help Groups, User Groups and Beneficiary	90 persons	Agriculture and Horticulture bee-keeping, dairy	Institutional/ university (State/Out side State)	3-5	9	405000

groups						
Self Help Groups User Groups WDT, PIA and exposure visit	1 to 2 ward/Panchayat (max.) 120 persons	Exposure visit professional institutional field	State /Outside State	3-4	4	720000
Self Help Groups, User Groups exposure visit	1 to 2 / ward/ panchayat (max.) 140 persons	Kissan Melas/ Pradashanis	State/Outside State	3-4	5	380000
Self Help Groups, User Groups exposure visit	3 to 4/ activity/ panchayat (max.) 120 persons	Specialized trainings (Horticulture, Agriculture, Vegetable, carpentry, dairy farming and vermin composting etc.	Professional Institutes/ University	5-7	5	530000
PIAs, WDTs members	32 persons	Project implementation and management trainings, report writing and accounts maintenance	Professional institutes/ University (State Outside State)	3	4	192000
Miscellaneous/ Expert visit		Expert visits/services and Misc.	Professional institutes/ University (State Outside State)		4	252500
Total					43	28,69,500

The capacity building of farmers and youth in the watershed areas can also be done under the micro enterprises and livelihood through Industrial Training Institute (ITI) occupation/trades as well as other entrepreneurs programme which provide self-employment or wage employment within the watershed areas.

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 sub activity	30ha	13,840	4,15,200

6.2 Budget form Production system and micro enterprises

Name of Panchayat	Fodder Trees				Grasses			
	Area (ha.)	No. of Plants @ 1100 /ha	Unit cost per ha ₹	Budget ₹ @ 11000 /ha	Area (ha.)	Quantity of seeds (kg) @ 35kg /ha	Rate per Kg(₹)	Budget ₹
Deeb	05	5500	10	55000	04	140kg	120	16800
Madhawani	04	4400	10	44000	03	105kg	120	12600
Shilli khaneti	04	4400	10	44000	03	105kg	120	12600
Zar	3.5	3850	10	38500	3.5	122.5 kg	120	14700
Total	16.5	18150		181500	13.5			56,700

Note: Target for 4th year

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

Activity /Item	Breed	Area(ha)	Rate per ha. (₹)	Total cost (₹)	Beneficiaries share @ 10% cash or kind used as WDF
Fodder	Beul, Bamboo, Ban, Morus and Robinia	16.5	11000	181500	-
Grasses	Red clover, Steria and orchard grasses	13.5	4200	56700	-
Total		30		2,38,200	-

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	No. of Units /str.	Total No. of Units	Unit Size (m)	Unit Cost (₹)	Watershed Cost (₹)	Convergence Cost (₹)	Estimated Cost (₹)
Crate Wall	4.8x1.25x1.25	18	11	38	2.4x1.25x1.25	8600	326800	-	326800
	12x1.25x1.5	5	18	30	2x1.25x1.5	9100	273000	-	273000
	20x1.5x1.5	1	10	10	2x1.5x1.5	9300	93000	-	93000
	8x1.5x1.5	19	44	76	2x1.5x1.5	9300	706800	-	706800
	10x1.25x1.5	8	25	65	2x1.25x1.5	9100	591500	-	591500
	6x1.5x1.5	16	18	48	2x1.5x1.5	9300	446400	-	446400
	7.2x1.25x1.25	10	12	30	2.4x1.25x1.25	8600	258000	-	258000
	8x1.25x1.5	7	16	28	2x1.25x1.5	9100	254800	-	254800
	9.6x1.25x1.25	3	8	12	2.4x1.25x1.25	8600	103200	-	103200
Total		87	162	337			30,53,500	-	30,53,500
Dry check	4x1.2x1.4	84	-	-	-	8200	688800	-	688800
	3.5x1.2x1.3	49	-	-	-	6700	328300	-	328300
	2.5x1.25x1.4	73	-	-	-	5300	386900	-	386900
	2.5x1.25x1.4	01	-	-	-	6480	6480	-	6480
	2.7x1.5x1.75	33	-	-	-	8500	280500	-	280500
	3x1.2x1.5	51	-	-	-	6500	331500	-	331500
	2.5x1.25x1.4	62	-	-	-	5300	-	328600	328600
	3.5x1.2x1.3	46	-	-	-	6700	-	308200	308200
Total		399	-	-	-		20,22,480	6,36,800	26,59,280
Outlet Drainage	150 rmt	2	-	-	-	80900	161800	-	161800
	150 rmt	1	-	-	-	81750	81750	-	81750
	150 rmt	1	-	-	-	82125	82125	-	82125
	200 rmt	1	-	-	-	107880	107880	-	107880
	200 rmt	1	-	-	-	108565	108565	-	108565
	700 rmt	1	-	-	-	378000	378000	-	378000

	200 rmt	1	-	-	-	108800	108800	-	108800
	350 rmt	1	-	-	-	190050	190050	-	190050
	500 rmt	1	-	-	-	271500	271500	-	271500
	600 rmt	2	-	-	-	161400	322800	-	322800
	800 rmt	2	-	-	-	217200	434400	-	434400
	550 rmt	1	-	-	-	298650	298650	-	298650
	395 rmt	1	-	-	-	214520	214520	-	214520
	600 rmt	3	-	-	-	102600	307800	-	307800
	400 rmt	1	-	-	-	160000	160000	-	160000
	200 rmt	1	-	-	-	82600	82600	-	82600
	150 rmt	1	-	-	-	58500	58500	-	58500
	600 rmt	2	-	-	-	126200	252400	-	252400
	200 rmt	2	-	-	-	41000	82000	-	82000
	300 rmt	1	-	-	-	125800	125800	-	125800
	900 rmt	1	-	-	-	378500	378500	-	378500
	400 rmt	1	-	-	-	174000	174000	-	174000
	300 rmt	1	-	-	-	130500	130500	-	130500
	700 rmt	1	-	-	-	280000	-	280000	280000
	300 rmt	1	-	-	-	150900	-	150900	150900
	700 rmt	1	-	-	-	286500	-	286500	286500
	150 rmt	1	-	-	-	58500	-	58500	58500
	800 rmt	1	-	-	-	432000	-	432000	432000
	1200 rmt	2	-	-	-	326300	-	652600	652600
	600 rmt	2	-	-	-	161400	-	322800	322800
Total		39	-	-	-		45,12,940	21,83,300	66,96,240

Note: Target for 3rd & 4th year

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 399 Dry check, 87 Crate wall and 39 Outlet Drainage 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 rention 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, RWHST 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)					No. of beneficiaries benefited
		Existing structure (m ³)	Repairable No.	(m ³)	New structure (m ³)	(m ³)	
Kachha Talab	02	192	-	-	9	1676.1	Entire catchment area
Roof water	-	-	-	-	15	229.8	-do-
WST	21	612	3	44.9	113	2027.9	-do-
Kuhal	05	-	2	1000rmt	1	300rmt	
Pipe line	-	-	-	-	20	25895 rmt	-do-
RWHST	-	-	-	-	54	841.10	-do-
check dam	-	-	-	-	7	100.8	-do-
Source tank	-	-	-	-	2	6.07	-do-
Total	28	804	5	44.9/1000rmt	221	4881.77/26195rmt	

8.1 (b) Storage capacity and cost of new water harvesting structures under watershed programme and convergence.

Name of Scheme	No.	Capacity (m ³)	Unit Cost (₹)	Size (mt)	Budget allocated from Watershed ₹	Budget allocated from Convergence (₹)	Beneficiaries contribution	Total budget (₹)
Kacha Talab/ farm pond	1	120	33000	10x8x1.5	33000	-	-	33000
	1	120	36000	10x8x1.5	36000	-	-	36000
	1	120	25700	10x8x1.5	25700	-	-	25700
	2	561.6	73000	18x12x1.3	146000	-	-	146000
	1	324	73000	18x12x1.5	73000	-	-	73000
	1	240	162500	15x8x2	162500	-	-	162500
	1	96	17700	8x8x1.5	17700	-	-	17700
	1	94.5	24000	9x7x1.5	24000	-	-	24000
Total	9	1676.1			5,17,900	-	-	5,17,900
RWHST	1	21	98200	3.5x3x2	98200	-	-	98200
	2	42	97700	3.5x3x2	195400	-	-	195400
	4	84	99400	3.5x3x2	397600	-	-	397600
	1	19.4	94300	3.3x3x2	94300	-	-	94300
	4	79.2	98200	3.3x3x2	392800	-	-	392800
	4	79.2	99600	3.3x3x2	318720	-	79680	398400
	3	45	83100	3x2.5x2	249300	-	-	249300
	3	43.74	76000	2.7x2.7x2	182400	-	45600	228000

	3	45.24	77200	2.9x2.6x2	185280	-	46320	231600
	2	29.16	78000	2.7x2.7x2	124800	-	31200	156000
	2	29.16	79200	2.7x2.7x2	126720	-	31680	158400
	4	72	90000	3x3x2	306000	-	54000	360000
	1	18	90000	3x3x2	90000	-	0	90000
	4	72	90200	3x3x2	288640	-	72160	360800
	1	18	89300	3x3x2	89300	-	-	89300
	1	18	89000	3x3x2	89000	-	-	89000
	2	36	85500	3x3x2	171000	-	-	171000
	1	18	88000	3x3x2	88000	-	-	88000
	1	18	86100	3x3x2	86100	-	-	86100
	1	18	87200	3x3x2	87200	-	-	87200
	2	36	89500	3x3x2	179000	-	-	179000
	2	36	72500	3x3x2	-	145000	-	145000
	1	18	87200	3x3x2	-	87200	-	87200
	1	18	85500	3x3x2	-	85500	-	85500
	1	18	89000	3x3x2	-	89000	-	89000
	2	36	98200	3.5x3x2	-	196400	-	196400
Total	54	967.1			3839760	603100	360640	4803500
RRWHST	1	15	98500	3x2.5x2	98500	-	-	98500
	1	15	98000	3x2.5x2	98000	-	-	98000
	1	15	98500	3x2.5x2	78800	-	19700	98500
	1	15	98000	3x2.5x2	78400	-	19600	98000
	3	54	108000	3x3x2	259200	-	64800	324000
	2	24	88000	3x2x2	176000	-	-	176000
	1	16.2	98500	3x3x1.8	98500	-	-	98500
	1	16.2	98900	3x3x1.8	98900	-	-	98900
	1	16.2	100500	3x3x1.8	100500	-	-	100500
	1	16.2	100500	3x3x1.8	80400	-	20100	100500
	1	13.5	91000	2.7x2.5x2	91000	-	-	91000
	1	13.5	86200	2.7x2.5x2	86200	-	-	86200
	2	27	91000	2.7x2.5x2	-	182000	-	182000
	2	32.4	98900	3x3x1.8	-	197800	-	197800
	1	12	77800	3x2x2	-	77800	-	77800
	1	16.2	100400	3x3x1.8	-	100400	-	100400
	1	12	81700	3x2x2	-	81700	-	81700
	1	16.2	98500	3x3x1.8	-	98500	-	98500
Total	23	345.6			13,44,400	738200	1,24,200	2206800
Source tank	1	3.37	33000	1.5x1.5x1.5	33000	-	-	33000
	1	2.7	30000	1.5x1.5x1.2	30000	-	-	30000
Total	2	6.07			63,000	-	-	63,000
New Kunal	1	-	116900	300rmt	116900	-	-	116900
Total	1	-			116900	-	-	116900
Kunal Rep.	1	-	57800	400 rmt	57800	-	-	57800
	1	-	72500	600 rmt	72500	-	-	72500
Total	2	-			130300	-	-	130300
Check dam	2	26.88	150000	6x0.8x2.80	300000	-	-	300000
	1	15.68	170000	7x0.8x2.80	170000	-	-	170000
	1	13.44	156500	6x0.8x2.80	156500	-	-	156500
	1	15.68	175000	7x0.8x2.80	175000	-	-	175000
	1	15.68	176200	7x0.8x2.80	176200	-	-	176200
	1	13.44	157500	6x0.8x2.80	157500	-	-	157500
Total	7	100.8			11,35,200	-	-	11,35,200
Fishery tank	1	36	87200	3x3x2	-	174400	-	174400
Total	1	36				174400	-	174400

Pipe line	2	-	209000	3000 rmt	418000	-	-	418000
	1	-	139400	1000 rmt	139400	-	-	139400
	2	-	139300	2000 rmt	278600	-	-	278600
	1	-	167200	1200 rmt	167200	-	-	167200
	1	-	278500	2000 rmt	278500	-	-	278500
	1	-	125500	1000 rmt	125500	-	-	125500
	1	-	69700	500 rmt	69700	-	-	69700
	1	-	139200	1000 rmt	139200	-	-	139200
	1	-	278400	2000 rmt	278400	-	-	278400
	1	-	277200	2000 rmt	277200	-	-	277200
	2	-	139500	2000 rmt	279000	-	-	279000
	1	-	167400	1200 rmt	167400	-	-	167400
	2	-	111600	3200 rmt	223200	-	-	223200
	1	-	118500	850 rmt	118500	-	-	118500
	1	-	251000	1800 rmt	251000	-	-	251000
1	-	159500	1145 rmt	159500	-	-	159500	
1	-	139500	1000 rmt	-	139500	-	139500	
Total	21	-		3370300	139500	-	3509800	
WST	5	75		3x2.5x2	425000	-	425000	
	4	50		2.5x2.5x2	221760	-	221760	
	2	36		3x3x2	115840	-	115840	
	2	36		3x3x2	144800	-	144800	
	3	54		3x3x2	261600	-	261600	
	1	18		3x3x2	69760	-	69760	
	2	36		3x3x2	179600	-	179600	
	4	72		3x3x2	360800	-	360800	
	3	37.5		2.5x2.5x2	169920	-	169920	
	4	60		3x2.5x2	281600	-	281600	
	3	48.6		3x2.7x2	211920	-	211920	
	1	18		3x3x2	90500	-	90500	
	5	105	102000	3.5x3x2	510000	-	510000	
	4	64.8	87200	3x2.7x2	279040	-	279040	
	4	72	94500	3x3x2	378000	-	378000	
	2	36	94500	3x3x2	151200	-	151200	
	4	84	100600	3.5x3x2	402400	-	402400	
	4	79.2	99700	3.3x3x2	398800	-	398800	
	4	72	95200	3x3x2	304640	-	304640	
	1	19.8	99600	3.3x3x2	79680	-	79680	
	1	19.8	99600	3.3x3x2	99600	-	99600	
	1	19.8	99300	3.3x3x2	99300	-	99300	
	1	18	89800	3x3x2	71840	-	71840	
	2	36	89300	3x3x2	178600	-	178600	
	3	54	92400	3x3x2	277200	-	277200	
	2	18	93200	3x3x2	186400	-	186400	
	3	63	99000	3.5x3x2	297000	-	297000	
	5	105	99400	3.5x3x2	497000	-	497000	
	2	42	99600	3.5x3x2	199200	-	199200	
	2	42	86000	3.5x3x2	172000	-	172000	
	3	48.6	88700	3x2.7x2	266100	-	266100	
	3	48.6	88300	3x2.7x2	264900	-	264900	
	2	36	90300	3x3x2	180600	-	180600	
	2	22	76600	3x2.5x2	122560	-	122560	
	3	63	94200	3.5x3x2	282600	-	282600	
	2	36	89000	3x3x2	178000	-	178000	
	1	19.8	93300	3.3x3x2	93300	-	93300	

	2	24	81100	3x2x2	129760	-	32440	162200
	1	18	80300	3x3x2	80300	-	-	80300
	1	24	105000	4x3x2	105000	-	-	105000
	1	21	98000	3.5x3x2	98000	-	-	98000
	1	18	87000	3x3x2	87000	-	-	87000
	3	54	87300	3x3x2	261900	-	-	261900
	2	42	97200	3.5x3x2	194400	-	-	194400
	1	15	74800	3x2.5x2	74800	-	-	74800
	1	15	74000	3x2.5x2	74000	-	-	74000
	1	19.8	93300	3.3x3x2	-	93300	-	93300
	3	45	79000	3x2.5x2	-	237000	-	237000
	1	15	80300	3x2.5x2	-	80300	-	80300
	1	15	75000	3x2.5x2	-	75000	-	75000
	1	15	74000	3x2.5x2	-	74000	-	74000
Total	113	1996.5			9608220	559600	552380	10720200

Note: Details as in annexure

8.1(c) Total Storage Capacity of Existing and New structures

Scheme	New structures(m ³)	Existing structures (m ³)	Total capacity(m ³)
Watershed	4881.77	44.9	4926.67
Convergence	467.41	-	467.41
Total	5349.18	44.9	5394.08

8.1(d) Budget

Scheme	New structures (₹)	Existing structures (₹)	Total Amount(₹)
Watershed	20125980	64000	20189980
Convergence	1900900	-	1900900
Total	2,20,26,880	64,000	2,20,90,880

8.1(e) Total storage capacity and cost through watershed and convergence programme

Particulars	Capacity (m ³)	Cost (₹)
Watershed	4926.67	20189980
Convergence	467.41	1900900
Total	5394.08	2,20,90,880

8.01 DRINKING WATER

The Panchayat 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 care of maintenance of water bodies, which is due to the habit of tap water provided at door step provided by the IPH department
- 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 (m ³)	
		Present	After Project intervention
1	Total supply of water per day	373300	734010
2	Total House holds	1894	1894
3	Total population	7357	7357
4	Water Available per house hold per day	197	387
5	Per capita Availability	51	100

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						No. of months water available during the year
	Tap/ WST		Hand pump		Bawaries		
	No.	Capacity	No.	Capacity	No.	Capacity	
Deeb	6	66000	5	4700	5	5800	8month/year
Madhawani	16	152000	-	-	15	13400	8month/year
Shilli khaneti	4	39000	3	2600	12	24500	8month/year
zar	5	54000	-	-	10	11300	8month/year
Total	31	3,11,000	8	7300	42	55,000	

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

Name of Schemes	Existing No.	Capacity (m ³)	Size (m)	Unit Cost ₹	Watershed amount (₹)	Convergence amount (₹)	Estimated Budget (₹)
Bawaries	1	7	2.4X1.8X1.6	18000	18000	-	18000
	1	6	2.5X1.5X1.6	15000	15000	-	15000
	1	7.2	2.5X1.8X1.6	18000	18000	-	18000
	1	5.76	2X1.8X1.6	18000	18000	-	18000
	1	4.8	2X1.5X1.6	15000	15000	-	15000
	2	9	2X1.5X1.5	17000	34000	-	34000
	1	4.8	2X1.5X1.6	17000	17000	-	17000
	2	12	2.5X1.5X1.6	18000	36000	-	36000
	1	3.24	1.8X1.2X1.5	15000	15000	-	15000
	2	12.16	2X1.9X1.6	18000	-	36000	36000
	1	5.94	2.2X1.8X1.5	20000	-	20000	20000
Total	14	77.9			186000	56000	242000
Tank	1	12.96	3X2.4X1.8	22000	22000	-	22000
	1	12.5	2.5X2.5X2	20000	20000	-	20000
	1	14	2.8X2.5X2	18000	18000	-	18000
	1	14	2.8X2.5X2	22000	22000	-	22000
	1	10	2.5X2X2	25000	-	25000	25000
Total	5	63.46			82000	25000	107000

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

Name of Schemes	No. of schemes	Capacity (m ³)	Size (mt)	Unit Cost(₹)	Watershed (₹)	Convergence (₹)	Estimated Budget (₹)
Bawaries	2	69.14	4.9X4.41X1.6	44000	88000	-	88000
	1	34.57	4.9X4.41X1.6	45000	45000	-	45000
	1	34.57	4.9X4.41X1.6	41200	-	41200	41200
Total	4	138.28			1,33,000	41,200	1,74,200
Khurli	1	3.6	2.4x2x0.75	15700	15700	-	15700
Total	1	3.6			15700	-	15700
Drinking tank	1	13.5	2.7x2.5x2	105400	105400	-	105400
	1	13.5	2.7x2.5x2	105700	105700	-	105700
	1	12.5	2.5x2.5x1	100400	100400	-	100400
	1	16.2	3x2.7x2	100900	100900	-	100900
	2	30	3x2.5x2	97500	195000	-	195000
	1	18	3x3x2	110400	110400	-	110400
	2	30	3x2.5x2	97600	195200	-	195200
	1	18	3x3x2	110600	110600	-	110600
	1	18	3x3x2	110500	110500	-	110500
	2	5.4	1.5x1.5x1.2	30000	60000	-	60000
	1	2.7	1.5x1.5x1.2	32000	32000	-	32000
	3	52.2	3x2.9x2	100500	301500	-	301500
	2	36	3x3x2	99900	-	199800	199800
	2	36	3x3x2	107000	-	214000	214000
	Total	21	302			1527600	413800

8.06 Storage capacity and availability of water from existing structures

Sr. No.	Source	No.	Present capacity (lt.)	No. of months water available during the year
	Collecting structure		Storage Capacity	
1	WST/Tap	31	311000	6-8 months
2	Handpump	8	7300	6-8 months
3	Bawaries	42	55000	6-8 months
	Total	81	3,73,300	

8.07 Proposed activities for increase in the water capacity/ availability through renovation/new construction of structure

8.07(a) Size, location, capacity of structures with beneficiaries

Structure	Capacity (lt)		
	Old (lt)	New (lt)	After intervention (lt)
WST/Taps	311000	230000	541000
Handpump	7300	0	7300
Bawari	55000	130710	185710
Total	373300	360710	734010

8.08 Critical Gaps to be covered (item/activity)

- 1) Regular Supply of drinking water
- 2) Cleanness and colorization of water
- 3) Proper drainage of the catchment area to the pound/Johar
- 4) To sensitization of the community for judicious use of water sources
- 5) After project intervention the fresh and hygienic drinking water will be available to the local community
- 6) Sufficient amount of water can be provided to the beneficiaries within the stress period
- 7) The supplement irrigation facility will provided to the local community
- 8) The livestock will get the water at the door step during stress period
- 9) The water cycle of the project area will improve
- 10) Local hedges and bushes to be planted catchment of the water bodies
- 11) 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.

P1.811 Outcome

Source	Present storage Capacity	Proposed Storage Capacity	Total Storage Capacity	Total Families benefitted	Present Requirement/ Day	Quantity After Intervention(m ³)
WST/tap	311000	230000	541000	1894	197	387
Hand pump	7300	-	7300			
Bawaries	55000	130710	185710			
Total	373300	360710	734010	1894	197	387

9.0 CONVERGENCE

The linkage of the IWMP-XVIII, 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 structures 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

Name of Panchayat	Activity /work	No.	Programme /scheme for convergence	Agency/ Deptt.	Budget contribution(₹)				
					No.	Watershed (₹)	No.	Convergence (₹)	Total (₹)
Deeb	Dry check	196	MNREGA	RD	88	617480	108	636800	1254280
Total		196			88	6,17,480	108	6,36,800	12,54,280
Madhawani	Pipe line	1	MNREGA	RD	-	-	1	139500	139500
	Fishery tank	2	MNREGA	RD	-	-	2	174400	174400
	Drinking tank	2	MNREGA	RD	-	-	2	199800	199800
	Drainage	5	MNREGA	RD	-	-	5	1407400	1407400
Total		10			-	-	10	19,21,100	19,21,100
Zar	RWHST	18	MNREGA	RD	11	993900	7	603100	1597000
	Roof water	16	MNREGA	RD	8	731500	8	738200	1469700
	WST	30	MNREGA	RD	23	1962220	7	559600	2521820
	Bawari rep.	3	MNREGA	RD	-	-	3	56000	56000
	New Bawari	1	MNREGA	RD	-	-	1	41200	41200
	Rep. Drinking tank	1	MNREGA	RD	-	-	1	25000	25000
	New drinking tank	2	MNREGA	RD	-	-	2	214000	214000
	Drain	10	MNREGA	RD	6	608900	4	775900	1384800
Total		81			48	4296520	33	3013000	7309520
Grand Total		287			136	4914000	151	5570900	10484900

10.0 LIVELIHOOD ACTIVITY

Income generating activity reported in the watershed areas are carpentry, masonry, and weavers, embroidery, black smith poultry, sheep and goats rearing, pattal and basket making 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. cutting and tailoring, pickle making and juices making can be other options for rural women to improve their socio-economic conditions.

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 provision for training programme for the tradition rural artisan has been provided with in training budget to develop their capacity building.

10.101 Income enhancement and employment generation through different income generating activities

10.101a Number of households with activities and income, the list of beneficiaries selected during the PRA exercise attached.

Sr. No.	Activity	Existing No. of household	Proposed No. of household to be covered under project
1	Carpentry	24	6 SHG
2	Black Smith	1	1 no.
3	Knitting	-	24 SHG + 01 individual
4	Cutting & Tailoring	1	2 no.
5	Vermin compost	-	01 SHG
6	Basket making	2	2 no.
7	PHT	-	11 SHG
8	Cutting & Pruner	35	22 SHG
9	Rope way (spain)	-	4 SHG
10	Masonry	12	1 SHG+ 1 individual
11	Waste Material	-	2 SHG

Development Block Narkanda IWMP-XVIII

Project area in GP	3826			
Total funds earmarked for GP	5,73,90,000			
Funds earmarked for livelihood activities in GP	51,56,100			
Funds to be provided as seed money	36,15,570	SHG's/Federation	Individual	Un spent amount (₹)
		28,15,000	65,000	22,85,100
Funds to be provided as Grant-in-aid to SHG's	15,49,530			

Need based planning under livelihood activities for landless /assetsless beneficiaries of Project Area

Sr.No.	Activity	No. of Beneficiaries	Category	Watershed Project funds ₹
				Grant in aid ₹
1.	Carpentry	6 SHG	Gen/BPL	300000
2.	Black Smith	1 no.	Gen/BPL	5000
3.	Knitting	24 SHG + 01 individual	Gen/BPL	1050000
4.	Cutting & Tailoring	2 no.		15000
5.	Vermin compost	01 SHG		50000
6.	Basket making	2 no.		10000
7.	PHT	11 SHG		350000
8.	Cutting & Pruner	22 SHG		790000
9.	Rope way (Spain)	4 SHG		200000
10.	Masonry	1 SHG+ 1 individual		60000
11.	Waste Material	2 SHG		50000
	Total			28,80,000

Note: "It is preferred that trainings should be given before providing funds under revolving funds."

The unspent amount will be used during the project period if additional groups are formed or if not. It can be spent on Capacity Building part is the group for wide spread activity.

11.0 PRODUCTION SYSTEM & MICRO ENTERPRISES

The land resource is the primary and major source of livelihood activities in the watershed area. These natural resources can be used properly by adopting integrated farming system to get more return per unit space per unit time. Area is suitable for the cultivation of apple, pear, pomegranate and walnut. These fruits plants can be integrated with agriculture and animal's husbandry to increase the productivity of land. The shortage of fodder leads farmers to rear only local breeds of animals that are too for self consumption of milk and farm yard manure. This shortage of fodder can be overcome by introducing multipurpose tree species. Other option of livelihood is the revival of rural artisans and for this best options with the rural artisans are carpenter, masonry, weaving, crafting and shoe making. The rural poor can earn good amount of money from these professions. These are some of important income generating activities need to be introduced in the watershed area. There is a dire need to aware, motivate and trained the local poor artisans. These artisans should be provided with equipments to earn their livelihood and to improve their socio economic conditions.

11.111 Income enhancement and employment generation through different income generating activities

11.111(a) Number of households with activities and income, the list of beneficiaries selected during the PRA exercise attached.

Sr. No.	Activity	Existing No. of household	Proposed No. of household
1	Agriculture Seed	Whole Panchayat	Whole Panchayat
2	Vegetable Seed	Whole Panchayat	Whole Panchayat
3	Fruit plants	Whole Panchayat	Whole Panchayat
4	Fodder Trees	Whole Panchayat	Whole Panchayat
5	Hybrid Grasses	Whole Panchayat	Whole Panchayat
6	Fruit collection centre	Whole Panchayat	5
7	Dairy Farming	48	48
8	Vegetable Nursery	-	2 SHG + 1 individual
9	Sheep	2	2
10	Goatry	7	9
11	Vermin compost	-	2 SHG + 4 individual
12	Poultry	2	4
13	Bee keeping	-	1 SHG
14	Fishery	-	3

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

Name of Watershed : IWMP-XVIII Production budget (10%): ₹57,39,000

Sr. No.	Activity	Input (KG/No.)	Category	Watershed Project funds (₹)	Remarks
				Grant in aid (₹)	
1	Agriculture for crop seed	2250.5 kg	Gen./BPL	225050	
2	Vermin compost	2 SHG+ 4 individual	Gen./BPL	90000	
3	Fruit Plants	66825 plants		2553750	
4	Fodder trees	18150		181500	
5	Hybrid Grasses (seed)	472.5 kg		56700	
6	Vegetable seeds	3033.95 kg		411000	
7	Vegetable collection centre	5		1256000	
8	Dairy farming	48		720000	
9	Nursery (vegetable)	2 SHG+ 1 individual		60000	
10	Goatry	9		90000	
11	Sheep	2		20000	
12	Poultry	4		20000	
13	Bee keeping	1 SHG		25000	
14	Fishery	3		30000	
	Total			57,39,000	

Note: "It is preferred that trainings should be given before providing funds under revolving funds."

The proposal/ applications under production system and micro enterprises have been received/procured from the beneficiaries during the course of participatory Rural appraisal exercise (PRA) of watershed treatment area to undertake different activities individually / SHGs are attached and the need based planning of these project will be prepared by the PIA based on the capacity of the groups and merit and ranking of the each case. The priority and preferences of each case for financial assistance will be decided by the gram sabha.

12.1 AGRICULTURE

The main stay of the farmers of watershed catchment area is agricultural crops grown such as wheat, maize, among cereal crops Rajmash and Mash among pulses. 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

Part 12.112(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

P 12.112(b) Present status of Agriculture Crops and Proposed interventions:

P 12.112(c) Pulses

Crops grown : Rajmash

Total Productions : 165.9 qt (based on PRA exercise)

Status	Particulars	Rajmash
Existing	Area under cultivation	237Bigha (Intercropping with maize)
	Production	165.9 qt.
	Productivity	70 kg/bigha
	Variety	Local
	Technology	Line method
Proposed	Increase in area	138 Bigha
	Variety	Red capsule
	Seed Quantity required by beneficiary group	2250.5 Kg

Source: Household survey, Regional Centre, NAEB, UHF, 2012

P 13.112(d) Requirement of improved seed under different crops

Particulars	Quantity (kg)	Market rate per Kg (₹)	Estimated Budget (₹)
Pulses			
Rajmash	2250.5 kg	100	225050
Total	2250.5 kg		2,25,050

Note: Target for 3rd and 4th year

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. Rajmash (6 kg). The project intervention would be replacement of conventional varieties by improved varieties at 100 percent replacement rate each year for two years. This seed may be given as demonstration units among the beneficiaries

P 13.112 (e) 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.

P 13.112(f) Marketing

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

P 13.112(g) Project Interventions

a) Introduction of improved seed

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

b) 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

c) Numbers of trainings / Exposure visits

- Number of Trainings =3
- Number of Trainees =30 to35
- Duration = 3 days

d) Exposure visit

- One exposure visit of 30 to 40 farmers

P 13.112(h) Project Impact

Crops	Existing area	Addition in area	Total area	Seed requirement after project intervention	Unit cost/kg	Amount (₹)
Rajmash	237	138	375	2250.5 kg	100	225050
Total	237	138	375	2250.5 kg		2,25,050

- a) Skill development and capacity building of about 25 to 30 farmers from the Panchayat for adoption of latest technology of watershed management
- b) Encouragement towards organic farming and improving fertility of soils through vermin compost

Organic farming: Presently the people of the watershed area is practicing traditional farming system by growing wheat, barley, maize, chalia, koda and rajmash etc. The productivity of the crop is very low, due to the lack technical knowledge and latest techniques but now days the people are going for chemical fertilizer and use of insecticides and pesticides. Which is losing the soil health hence some efforts can be adopted in the project area to boost the organic farming that can be through the following techniques.

- Use of vermin compost
- Use of Bio- pesticides/ insecticide
- Seeds certification
- Incentive to the farmers to sale there farm produce at higher price.

P 13.113 HORTICULTURE

The chapter deals with the horticulture crops among fruits Pear, Apple, cherry, almond etc. are grown. Apple is the major cash crop. The watershed area is also cultivated with different types of vegetables. These include cabbage, beans, capsicum, peas, cauliflower, etc. but only for self consumption.

P 13.113a 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.

P 13.113(b) Present status of horticulture crops and proposed interventions:

P 13.113(c) Fruits

Status	Particular	Apple	Pear	Cherry	Pomegranate	Lemon	Walnut
Existing	Area under cultivation	6850 bigha	40 bigha	91bigha	Nil	Nil	Nil
	Present Production	2397.5ton	2.8 ton	4.55 ton	Nil	Nil	Nil
	Productivity	35 qt/bigha	7qt/bigha	5 qt/bigha	Nil	Nil	Nil
	Variety	Red chief, Top red					
	Technology	indigenous	indigenous	indigenous	indigenous	indigenous	indigenous
Proposed	Increase in area	938 bighas	301.6bighas	306 bighas	22 bighas	22bighas	216 bighas
	Varieties	Red chief, Top red	Red Bartlet	Black and Red cherry	Kandhari	Kagzi	Hybrid
	Plants requirement	33025 plants	11750plants	11900plants	890plants	890 plants	8370plants

P 13.113(d) Proposed fruit crop intervention in the Project Area

Apple

Sr. No.	Name of Panchayat	No. of household	No. of Plants	Area (bigha)	Unit cost (₹)	Amount(₹)
1	Deeb	548	10960	312	40	438400
2	Madhawani	289	5780	165	40	231200
3	Shilli khaneti	353	7060	199	40	282400
4	Zar	615	9225	262	40	369000
Total		1805	33025	938		13,21,000

Note: Target for 3rd and 4th year

Pomegranate

Sr. No.	Name of Panchayat	No. of household	No. of Plants	Area (bigha)	Unit cost (₹)	Amount(₹)
1	Zar	89	890	22	25	22250
Total		89	890	22		22,250

Note: Target for 3rd and 4th year

Lemon

Sr. No.	Name of Panchayat	No. of household	No. of Plants	Area (bigha)	Unit cost (₹)	Amount(₹)
1	Zar	89	890	22	25	22250
Total		89	890	22		22,250

Note: Target for 3rd and 4th year

Pear

Sr. No.	Name of Panchayat	No. of household	No. of Plants	Area (bigha)	Unit cost (₹)	Amount(₹)
1	Deeb	548	8220	203.6	25	205500
2	Shilli khaneti	353	3530	98	25	88250
Total		901	11,750	301.6		2,93,750

Note: Target for 3rd and 4th year

Cherry

Sr. No.	Name of Panchayat	No. of household	No. of Plants	Area (bigha)	Unit cost(₹)	Amount(₹)
1	Deeb	548	5480	136	40	219200
2	Madhawani	289	2890	72	40	115600
3	Shilli khaneti	353	3530	98	40	141200
Total		1190	11,900	306		4,76,000

Note: Target for 3rd and 4th year

Walnut

Sr. No.	Name of Panchayat	No. of household	No. of Plants	Area (bigha)	Unit cost(₹)	Amount(₹)
1	Deeb	548	5480	136	50	274000
2	Madhawani	289	2890	80	50	144500
Total		837	8370	216		4,18,500

Note: Target for 3rd and 4th year

P 13.113(e) Budget proposed for Horticulture activities

Activity /Item	Variety	No. of Plants required	Unit cost per plant	Cost for 3 rd year	Cost for 4 th year	Total cost (₹)
Apple	Top Red, Royal, Red Chief	33025	40	660500	660500	1321000
Pear	Red bartlet	11750	25	146875	146875	293750
Cherry	Black and Red cherry	11900	40	238000	238000	476000
Walnut	Hybrid	8370	50	209250	209250	418500
Pomegranate	Kandhari	890	25	-	22250	22250
Lemon	Kagzi	890	25	22250	-	22250
Total		66,825		12,76,875	12,76,875	25,53,750

P 13.113(f) Vegetables crops

Status	Vegetable crops	Bean	Peas	Cabbage	Tomato	Potato
Existing	Area under cultivation	48.87bighas	81bighas	16bighas	8bighas	12bighas
	Present Production	195.48qt	405qt	112qt	324qt	84qt
	Productivity	4qt/bighas	5qt/bighas	7qt/bighas	18qt/bighas	7qt/bighas
	Variety					
	Technology	Indigenous	Indigenous	Indigenous	Indigenous	
Proposed	Increase in area	36.93 bighas	55.25 bighas	9 bighas	12 bighas	11.16bighas
	Variety					Kufri Jayoti
	Total seed requirement	171.6 kg	545kg	0.75kg	0.6kg	2316kg

P 13.113(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
- Lack of CCA Store to improve shelf life of the produce

P 13.113(h) Marketing

Vegetable produced are sold at Narkanda, Saini, Shimla, Narkanda

P 13.113(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

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

Crops	Seed requirement Quantity(Kg)	Unit rate per kg @ (₹)	Estimated Budget(₹)
Beans	171.6	600	103000
Peas	545	200	109000
Cabbage	0.75	40000	30000
Tomato	0.6	50000	30000
Potato	2316	60	139000
Total	3033.95		4,11,000

Note: Target for 3rd and 4th year

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 (2kg), Peas (4 kg), Tomato(20 gm) and Potato (100 kg). The project intervention would be replacement of local varieties by improved varieties. This seed may be given as samples among the beneficiaries.

P 13.113(k) Impact/Project Outcomes

1. Skill development /capacity building of 40 farmers
2. Conventional Cropping pattern changed. Area under vegetable increased (9.94ha)
3. Mono crop to cash crop
4. Farming systems changed. Areas under fruit crops increased (144.44 ha)
5. Production of fruit and vegetable enhanced through supplementary irrigation facility
6. Livelihood of 40 more farming families linked with horticulture practice.

P 13.113(l) Vegetable Collection Centre

Panchayat	Location	No.	Beneficiaries	Cost (₹)
Deeb	Barogi at Bagail	1	81	312000
Madhawani	Thanki (near horticulture road)	1	63	312000
	Gunda Chewari (in the land of Vir Singh)	1	57	312000
Zar	Bagthal	1	93	160000
	Zar	1	91	160000
Total		5	385	12,56,000

Note: Target for 3rd year

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 are reared for milk production which is used for self consumption. Milch animals are local as well as improved. 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 1204 and average production of milk per day is 2.5 lt. from local cows and 5lt. per day from improved cow.

11.301(a) Average and Total milk production

Milch cattle	Total Milch	Average milk production lt./day	Total production (lt.)
Local cows	77	2.5	192.5
Improved cows	1127	5	5635
Total	1204		5827.5

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

Green fodder available in project area is 9171 tons whereas dry fodder available is 3668 ton. Total 12839 ton fodder is available in project area. But requirement of green fodder is 22010ton whereas requirement of dry fodder is 11005 ton. Total fodder required is 33015 ton. Deficit of green fodder in project area is 12839 ton and that of dry fodder is 7337 tons.

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

Available			Required			Deficit		
Green	Dry	Total	Green	Dry	Total	Green	Dry	Total
9171	3668	12839	22010	11005	33015	12839	7337	20176

Note - Available Fodder

Green - 25kg/day x 30 days x 6months x Total live stock

Dry - 10 kg/day x 30days x 6months x Total live stock

Required Fodder

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

Dry - 15kg/day x 30days x 12months x Total live stock

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

Supply	12839
Demand	33015
Deficit	20176

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: Ban, Robinia , Bamboo, Beul etc.

Grasses: Steria, Berseem, Orchard, Napier etc.

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

Name of Panchayat	Fodder Trees				Grasses			
	Area (ha.)	No. of Plants @ 1100 /ha	Unit cost per ha ₹	Budget ₹ @ 11000 /ha	Area (ha.)	Quantity of seeds (kg) @ 35kg /ha	Rate per Kg(₹)	Budget ₹
Deeb	05	5500	10	55000	04	140kg	120	16800
Madhawani	04	4400	10	44000	03	105kg	120	12600
Shilli khaneti	04	4400	10	44000	03	105kg	120	12600
Zar	3.5	3850	10	38500	3.5	122.5 kg	120	14700
Total	16.5	18150		181500	13.5			56,700

Note: Target for 4th year

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

Activity /Item	Breed	Area(ha)	Rate per ha. (₹)	Total cost (₹)	Beneficiaries share @ 10% cash or kind used as WDF
Fodder	Beul, Bamboo, Ban, Morus and Robinia	16.5	11000	181500	-
Grasses	Red clover, Steria and orchard grasses	13.5	4200	56700	-
Total		30		2,38,200	-

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 7.25.lt to 11.25 lt. /day and total production of milk after project intervention will be 9266.25 litres

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

Milch cattle	Total Milch	Average milk production lt./day	Total production (lt.)
Local cows	77	3.25	250.25
Improved cows	1127	8	9016
Total	1204		9266.25

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

Increase in milk production is 3438.75 lt. with total production of 9266.25 lt.

Milch cattle	Production Before project (lt.)	Production After project (lt.)	Quantity of milk Increase after project (lt.)
Local cows	192.5	250.25	57.75
Improved cow	5635	9016	3381
Total	5827.5	9266.25	3438.75

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 Narkanda 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	Nil	Nil	3		G.P. Zar	Common

12.101b Availability and requirement of fish seed /fingerlings

Ward	Existing families	Proposed families	Present quantity of fish	Provision of fish seed(₹)	Breeds
1	Nil	3	-	30,000	Trout

12.102 Project Interventions

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

13.101 EXPECTED OUTCOME OF PROJECT AREA

Water harvesting/ drinking structure	No. of proposed structure	Water availability existing (m ³)	After intervention(m ³)	Area to be treated (ha)
Irrigation	218	804	4926.67	1826
Drinking	40	373.3	772.8	-
Total	258	1177.3	5699.47	1826

Soil Conservation

Soil conservation	No. of scheme	Area (ha)
Crate wall/ gabion structure	92	275
Outlet drainage	29	407
Dry check	291	184
Total	412	866

Production system & Micro Enterprises

Particulars	Area under cultivation		Seed /plant requirement (kg/plant)	Existing productivity /bigha	Propose productivity /bigha	Increase in production /bigha
	Existing (bigha)	Proposed (bigha)				
Agriculture						
Maize	-	-	-	-	-	-
Rajmash	237	138	2250.5 kg	70 kg	90 kg	20kg
Total	237	138	2250.5 kg	70 kg	90 kg	20kg
Vegetable						
Bean	48.87	36.93	171.6 kg	4 qt	6qt	2 qt
Peas	81	55.25	545 kg	5 qt	6 qt	1.5 qt
Cabbage	16	9	0.75 kg	7 qt	9 qt	2 qt
Tomato	8	12	0.6 kg	18 qt	22	4qt
Potato	12	11.16	2316 kg	7 qt	8 qt	1 qt
Total	165.87	124.34				
Horticulture						
Apple	6850	938	33025	35qt	40qt	5qt
Cherry	91	306	11900	5 qt	6qt	1qt
Pear	40	301.6	11750	7 qt	8qt	1qt
Pomegranate	-	22	890	-	7qt	7qt
Lemon	-	22	890	-	8qt	8qt
Walnut	-	216	8370	-	6qt	6qt
Total	6981	1805.6	66825			

Animal husbandry

Fodder	Availability	Requirement /increase	After increase intervention
Green fodder	9171 ton	22010 ton	12839 ton
Dry fodder	3368 ton	11005 ton	7737 ton
Milk production	5827.5 lt	9266.25 lt	3438.75 lt

Land Development

Land development	No. of plants/grasses	Area (ha)
Fodder trees	18150 plants	16.5
Grasses	472.5 kg	13.5
Total		30

Livelihood activity

Farm based	Existing household	Family benefited after intervention
FCC/VCC	-	385
Dairy	28	48
Vegetable Nursery	-	2 SHG+ 1 individual
Sheep	2	2
Goatry	7	9
Vermin compost	-	3 SHG+4 individual
Poultry	2	4
Bee keeping	-	1 SHG
Fishery	2	3
Non-farm based		
Carpenter	24	6 SHG
Black smith	1	1
Cutting & tailoring	1	2
Knitting	-	24 SHG+1 individual
Cutting & pruning	35	22 SHG
Basket making	2	2
PHT	-	11 SHG
Rope way	-	4 SHG
Masonry	12	1 SHG+1 individual
Waste material	-	2 SHG

Gist Prepared by RC NAEB, UHF Nauni, Solan

Pooled DPR of IWMP-XVIII Narkanda

(₹ crores and area in ha.)

1.	Name of the Project	IWMP-XVIII
2.	District	Shimla
3.	Block	Narkanda
4.	Project Area	3826ha
5.	Area Proposed for treatment	3826 ha
6.	Cost	5,73,90,000
7.	Panchayats Covered under the project	04
8.	Total Micro Watersheds	04
9.	Financial Projection in the DPR as:	
	(i) Project Fund	57390000
	(ii) Convergence	5570900
	Total (i + ii)	6,29,60,900
10.	Whether the year-wise annual action plan prepared or not	Yes
11.	Whether activity-wise project fund and convergence funds indicated separately or not	Yes
12.	Whether Khasra No. of civil structure indicated or not.	GIS Coordinates of the each activity
13.	Phy. & Fin. Target of the project period mentioned in the AAP or not.	Yes
14.	Micro watershed-wise code mentioned or not	Yes
15.	Proposed Activities	Kaccha talab, Roof water, WST, Drinking tank, gabion structure, fodder trees, hybrid grasses, horticulture and vegetable input etc.
16.	Provision of funds for water conservation/harvesting activities	32138400
17.	Area proposed to be brought under Supplemental irrigation	24.63 ha
18.	Whether the Draft DPR has been approved by:	
	(i) The Gram Sabha / Gram Panchayat	No
	(ii) The District level Resource Group	Yes
19.	Expected Out come	Improvement in Horti & milk production improvement in the economic status of the beneficiaries.

	IWMP -	XVIII
20.	Status Quo. Analysis:	
	<ul style="list-style-type: none"> Total Geographical Area under the project 	3826 ha
	<ul style="list-style-type: none"> Area under cultivation 	1127 ha
	<ul style="list-style-type: none"> Barren land 	58 ha
	<ul style="list-style-type: none"> Pasture land 	655 ha
	<ul style="list-style-type: none"> Ghasni 	176 ha
	<ul style="list-style-type: none"> Forest land 	1566 ha
	<ul style="list-style-type: none"> Other land 	244 ha
	<ul style="list-style-type: none"> Current cropping pattern 	Maize, Rajmash and fruit plants
21.	Water harvesting :	
	<ul style="list-style-type: none"> Current Status of Water Harvesting activities 	Kaccha talab, WST & Bawari
	<ul style="list-style-type: none"> Water Harvesting Potential in term of Cubic mtrs. 	804 m ³
	<ul style="list-style-type: none"> Proposed Activities 	Kaccha talab, Roof water tank, Bawari etc.
	<ul style="list-style-type: none"> Water Potential to be created in Cubic ltrs. 	4926.7 m ³
22.	Farm based intervention :	
	<ul style="list-style-type: none"> Agriculture based activities proposed in the DPRs. 	Maize, Rajmash and horticulture
	<ul style="list-style-type: none"> Agriculture allied activities proposed in the DPRs. 	Plantation of grasses, agriculture training
23.	Non farm Based interventions :	
	<ul style="list-style-type: none"> Skill Development 	Formation of SHG and UGs Carpentry, Black smith, Electrician, C&T, Cutting and Pruning, shattering, waste material etc. activities besides proving revolving fund and GIA
	<ul style="list-style-type: none"> Proposed Micro Enterprises 	Livelihood activity such as Goatry, sheep rearing, dairy etc. by providing them revolving fund, GIA and latest technology.
24.	Non-farm based intervention :	
	<ul style="list-style-type: none"> Watershed Project 	5,73,90,000
	<ul style="list-style-type: none"> Convergence 	55,70,900
25.	Outcome :	
	Quantifiable indicators:	Improvement of Agriculture, Horticulture, Milk production improvement in the Economic status of the beneficiaries

BASE LINE SURVEY of IWMP-XVIII, Pooled DPR Narkanda Block (3rd batch)

SR.NO.	PARTICULARS	
1	Total geographical areas of project (lacs ha)	3826
2	Project Area covering (treatable Area) (lacs ha)	3826
	TREATABLE AREA	
3	Wasteland (lacs ha)	302
4	Total cropped areas (lacs ha)	1127
5	Total no. of water storage structures	218
6	Total storage capacity of water storage structure (cubic meters)	5226.1
	NO. OF HOUSEHOLD	
7	Total no. of household	1894
8	Scheduled caste	534
9	Scheduled tribe / OBC	12
10	Other	1348
11	Total population in the project area	7357
12	Total no. of BPL household	341
13	No. of small farmer's household	568
14	No. of household of land less people	Nil
15	No. of marginal farmer's household	1325
	DEPTH OF GROUND WATER (MT) BELOW GROUND LEVEL	
16	Pre monsoon (mt)	38
17	Post monsoon (mt)	42
18	No. of person days of seasonal migration	Nil
19	Rained agricultural land (lacs ha)	2397
20	Net sown area (lacs ha)	1127
21	Total No. of water extracting units	41

ABBREVIATION USED

BPL	:	Below Poverty Line
DPR	:	Detailed Project Report
DRDA	:	District Rural Development
GIS	:	Geographical Information System
ha	:	hectare
IPH	:	Irrigation and Public Health
IRDP	:	Integrated Rural Development Programme
IWMP	:	Integrated Watershed Management Programme
lt	:	liter
M	:	meter
MNREGA	:	Mahatma Gandhi Rural Employment Guarantee Act
NABARD	:	National Bank of Agriculture and Rural Development
NDRI	:	National Dairy Research Institute
OBC	:	Other Backward Classes
PIA	:	Project Implementing Agency
PMGSY	:	Pradhan Mantry Gramin Sadak Yojna
PWD	:	Public Work Department
SC	:	Scheduled Caste
ST	:	Scheduled Tribe
EPA	:	Entry Point Activity
SHG	:	Self Help Group
WDF	:	Watershed Development Fund

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