CHAPTER - 1

INTRODUCTION AND BACKGROUND

Status of watershed programme and approved plan by Steering committee, Govt. of India and status of previous Detailed Project Reports for Banda district, Deptt. of Agriculture, Uttar Pradesh is given in following Tables 1.1 and 1.2.

Table 1.1: Status of watershed programme District- Mahoba

Details	No.	Area (ha.)
Total Micro watersheds in the district	634	446000
Workable Micro Watersheds	590	415061
Micro Watersheds already treated (partially) by Deptt of Agriculture, Dist.- Banda Uttar Pradesh	44	30939
Micro Watersheds (MWS) available for treatment (begning IWMP in the district)	78	47400

Table 1.2: Approved plan (PPRs) by Steering Committee (SC)/Govt. of India, District- Banda

Year	Project	MWS	Area (Treatable) (ha)	Project Cost (Rs. Lakh)	Name of PIA	Date of Sanction by S.C. Got. Of India
2011-12	IWMP-X	6	4835	580.2	BSA (Agri), Banda-I	26.09.2011
2011-12	IWMP-XI	10	3727	447.24	BSA (Agri), Banda-I	-do-
2011-12	IWMP-XIII	9	5538	664.56	BSA (Agri), Rastriya Jalagam, Banda	-do-
2011-12	IWMP-XV	8	4436	532.32	BSA (Agri), Banda-I	-do-
2011-12	IWMP-XVI	8	4436	532.32	BSA (Agri), Rastriya Jalagam, Banda	-do-
Total		**87**	**34277.90**	**4376.86**		

1.1 Project Background

Integrated Watershed Management Programme-X comprises six micro-watersheds namely: Khaptha Kalan (2ClB5a2f), Paparenda (2ClA7c2c), Atarahat (2ClA7c2b), Gajani (2ClA7c1a), Bachhlura (2ClA7c2a) and Karahiya (2ClA7c2e). Watershed project is situated in Tindawari block of district Banda and spread over in 16 villages of 8 gram panchayat. The total geographical area of the IWMP-X is 6572.16 ha due to same area treated earlier however treatable area limited to 4835.00 ha is treatable under Integrated Watershed Management Programme (IWMP-X).

Table 1.3: Details of IWMP-X for which this DPR is Prepared

Watershed project	Micro Watersheds (MWS) detail	Micro watersheds code	Treatable Area (ha)	Treated Area (ha)	Name of Watershed in which MWS is falling (River / Nala name)
IWMP-X	Khaptha Kalan	2ClB5a2f	722.00	274.20	Yamuna River
	Paparenda	2ClA7c2c	885.00	136.31	-do-
	Atarahat	2ClA7c2b	765.00	35.56	-do-
	Gajani	2ClA7c1a	927.00	145.17	-do-
	Bachheura	2ClA7c2a	630.00	95.44	-do-
	Karahiya	2ClA7c2e	906.00	148.92	-do-
Total			**4835.00**	**835.60**	

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

1.2 Need and Scope for Watershed Development

Bundelkhand region had been in a grip of severe drought continuously from 2004 to 2007. In the region, more than 85 per cent of open wells were dried up due to deficit rainfall during drought. Cattle were abandoned due to shortage of water and fodder. Most part of the region was dependent on drinking water supply through tanker. Therefore, management of natural resources on watershed basis is urgent need of the region. Watershed project was selected with following long term objectives:

- To optimize productivity of the land
- To restore ecological balance in degraded and fragile eco-system
- To narrow down the disparity between rainfed and irrigated areas
- To create sustained employment opportunities

1.3 Weightage for selection of Watershed

Watershed project was selected on the basis of criteria mentioned in Table 1.4 and composite ranking was developed on the basis of these parameters. The seventeen criteria were taken with total of 205 weightage points. The criterion taken are availability of drinking water, irrigation, degree of soil erosion, water holding capacity, area under rainfed agriculture, status of field bund/contour bund / graded bund, presence of hard rock below the land, options for livelihood, percentage of small and marginal farmers, degraded

land, ground water status, status of technical knowledge for improved farming systems, weather conditions, poverty index (% of poor population), virginity of land, productivity potential of land and soil organic carbon status. The weightage for project is about 82.93 per cent (Table 1.5).

Table 1.4: Criteria and weightage for selection of watershed

S. No.	Criteria	Maximum Score	Range & Score			
1	Drinking water	15	**Very poor** Dependence on water supply through tanker (15)	**Poor** Partial availability within the periphery of 3-4 km (10)	**Good** Round the year availability within the periphery of 3-4 km (5)	**Very Good** Round the year availability in watershed (0)
2	Irrigation	10	No irrigation (10)	Life saving irrigation (7.5)	Partial life saving irrigation (5)	Fully covered (0)
3	Degree of soil erosion	10	Severe (10)	Medium (7.5)	Low (5)	No erosion (0)
4	Water holding capacity	10	Very poor (10)	Poor (7.5)	Good (5)	Very Good (0)
5	Area under rainfed agriculture	15	More than 90% (15)	80 to 90 % (10)	70 to 80 % (5)	Below 70% (Reject) (0)
6	Status of field bund/contour bund / graded bund	10	Below 20 % (10)	50 to 20 % (7.5)	80 to 50 (5)	Above 80% (2.5)
7	Presence of hard rock below the land	15	Hard rock starts from 5 to 20 feet (15)	Hard rock starts from 21 to 50 feet (10)	Hard rock starts from 51 to 100 feet (5)	Deep soil depth (0)
8	Options for livelihood	10	Very poor (10)	Poor (7.5)	Good (5)	Very Good (0)
9	% of small and	10	More than 80%	50 to 80 %	Less than 50%	

	marginal farmers		(10)	(5)	(3)	
10	Degraded land	15	High above 50% (15)	Medium 25 to 50% (10)	Low less than 10 – 25 % (5)	Very low Less than 10% (0)
11	Ground water status	10	Very poor (10)	Poor (7.5)	Good (5)	Very Good (0)
12	Status of Technical Knowledge for improved farming systems	10	Very poor (10)	Poor (7.5)	Good (5)	Very Good (0)
13	Weather condition	15	Uncertain weather condition / Continuous drought for three years (15)	Drought comes one in five years (10)	Drought comes one in ten years (5)	Normal weather condition (0)
14	Poverty index (% of poor population)	10	Above 80% (10)	80 to 50 (7.5)	50 to 20 % (5)	Below 20 % (2.5)
15	Virginity (No treatment /intervention in last five years)	10	Above 80% (10)	80 to 50 (7.5)	50 to 20 % (5)	Below 20 % (2.5)
16	Productivity potential of land	15	Lands with low production & where productivity can be significantly enhanced with reasonable efforts (15)	Lands with moderate production & where productivity can be enhanced with reasonable efforts (10)	Lands with high production & where productivity can be marginally enhanced with reasonable efforts (5)	-
17	Organic carbon status	15	Very low (15)	Low (10)	Medium (5)	Normal (0)

Table 1.5: Weightage of the project

S. No.	Criteria	Weightage points
1	Drinking water	10
2	Irrigation	7.5
3	Degree of soil erosion	10
4	Water holding capacity	10
5	Area under rainfed agriculture	10
6	Status of field bund/contour bund / graded bund	10
7	Presence of hard rock below the land	10
8	Options for livelihood	7.5
9	% of small and marginal farmers	10
10	Degraded land	15
11	Ground water status	10
12	Status of Technical Knowledge for improved farming systems	10
13	Weather condition	10
14	Poverty index (% of poor population)	10
15	Virginity	10
16	Productivity potential of land	10
17	Organic carbon status	10
	Total Weightage (Out of total 205)	**170**
	Weightage Percentage	**82.93**

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

1.4 Details of ongoing watershed programme

Presently, no watershed development programme is going on in the micro-watershed**.** There is no on going watershed management program/ activities on the microwatershed.

CHAPTER - 2

GENERAL DESCRIPTION OF PROJECT AREA

2.1 Location:

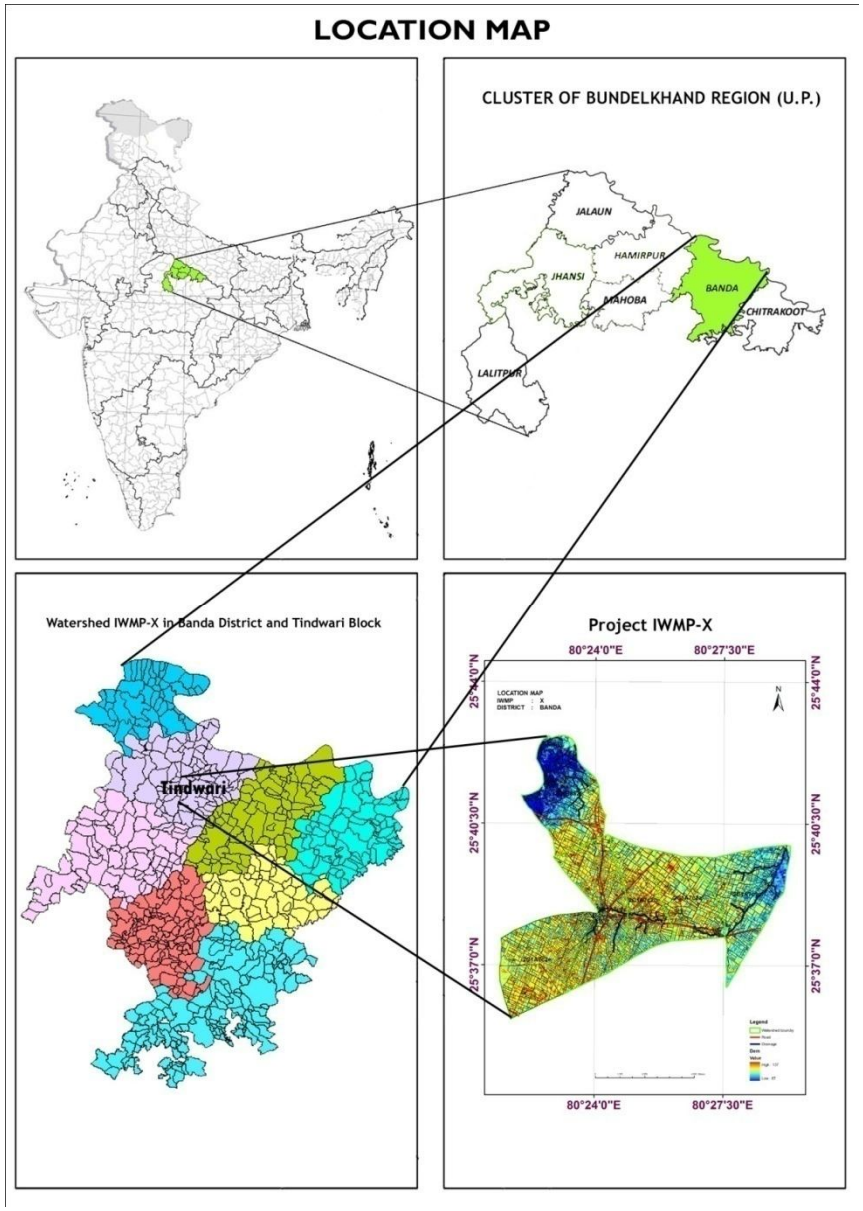
The micro-watersheds of IWMP-X is located in Tindawari block of Banda district. It is about 40 km. from Banda to Tindawari road. Location (lat/long), Gram Panchayat, villages and its geographical area for each micro-watershed are depicted in Table 2.1. Total area of the project is 6572.16 ha, out of which 4835.00 ha is treatable. The geographical area of micro-watershed varied between of 842.70 to 1261.38 ha.

Table 2.1: Micro-watershed wise details of villages and geographical area of IWMP- X

Sl. No.	Name of micro watershed with Code	Names of villages	Longitude	Latitude	Name of Block	Area of village included in MWS (Geographical)	Details of important /approach road with distance km
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	80^o 22' 0.0"- 80^o 24' 30.0"	25^o 40' 0.0"- 25^o 42' 30.0"	Tindawari	1172.00	Banda to Tindawari road
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama	80^o 22' 30.0"- 80^o 27' 30.0"	25^o 36' 30.0"- 25^o 40' 0.0"	Tindawari	1201.55	-do-
3	Atarahat (2ClA7c2b)	Niwaich, Khaptha Kalan, Atarahat, Paparenda	80^o 24' 0.0"- 80^o 25' 0.0"	25^o 37' 0.0"- 25^o 40' 0.0"	Tindawari	842.70	-do-
4	Gajani (2ClA7c1a)	Bichhawahi, Atarahat, Kumhauli, Gajani, Amaraiya, Pipari, Parsunda, Barethi	80^o 26' 30.0"- 80^o 29' 30.0"	25^o 36' 30.0"- 25^o 40' 0.0"	Tindawari	1261.38	-do-

		Askran, Khoharahi					
5	Bachheura (2ClA7c2a)	Atarahat, Paparenda, Bachheura, Pipari, Parsaunda, Barethi Askaran	80^{o} 25’ 30.0”- 80^{o} 27’ 30.0”	25^{o} 37’ 0.0”- 25^{o} 40’ 0.0”	Tindawari	853.46	-do-
6	Karahiya (2ClA7c2e)	Khaptha Kalan , Paparenda, Luktara, Lama, Karahiya	80^{o} 21’ 30.0”- 80^{o} 24’ 0.0”	25^{o} 35’ 30.0”- 25^{o} 38’ 30.0”	Tindawari	1241.08	-do-
	Total				Tindawari	**6572.16**	

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)


LOCATION MAP
CLUSTER OF BUNDELKHAND REGION (U.P.)
JALAUN
HAMIRPUR
JHANSI
BANDA
MAHOBA
CHITRAKOOT
LALITPUR
Watershed IWMP-X in Banda District and Tindwari Block
Tindwari
Project IWMP-X
80°24'0"E
80°27'30"E
25°44'0"N
25°40'30"N
25°37'0"N

2.2 Area and Landuse: Each micro-watershed covers partially or fully lands of many village. Details of various categories of land were estimated on the basis of villages, MWS area, PRA meetings and other source such as village meetings. Village wise detailed information on type of land is depicted in Table 2.2. The total culturable land of the project is 5670.60 ha, out of which 822.24 (14.50 %) ha land is under life saving irrigation mainly by means of open shallow dug wells. The cultivable rainfed, temporary and permanent wastelands are about 80.00, 4.00 and 1.50 per cent, respectively, of culturable land of the project.

Table 2.2: Details of land resources in IWMP-X of Banda district

Sl. No.	Name of MWS with code	Name of Village	Cultivated rainfed area	Cultivated irrigated area	Uncultivated wasteland/ fallow		Pvt. Agri. Land				Forest Land	Community land	Others	Total area (ha)
					Temp.	Permanent	Gen	SC	OBC	Total			(Habitat, Road. Etc.	(Geographical)
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	796.96	144.45	39.85	14.94	358.63	219.16	418.40	996.20	0.00	70.32	105.48	1172.00
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama	817.05	148.09	40.85	15.32	367.67	224.69	428.95	1021.31	0.00	72.09	108.14	1201.55
3	Atarahat (2ClA7c2b)	Niwaich, Khaptha Kalan, Atarahat, Paparenda	640.45	116.08	32.02	12.01	288.20	176.12	336.24	800.56	0.00	16.85	25.28	842.70
4	Gajani (2ClA7c1a)	Bichhawahi, Atarahat, Kumhauli, Gajani, Amaraiya,	857.74	155.46	42.89	16.08	385.98	235.88	450.31	1072.17	0.00	75.68	113.52	1261.38

		Pipari, Parsunda, Barethi Askran, Khoharahi												
5	Bachheura (2ClA7c2a)	Atarahat, Paparenda , Bachheura , Pipari, Parsaunda, Barethi Askaran	580.35	105.19	29.02	10.88	261.16	159.60	304.69	725.44	0.00	51.21	76.81	853.46
6	Karahiya (2ClA7c2e)	Khaptha Kalan , Paparenda , Luktara, Lama, Karahiya	843.93	152.96	42.20	15.82	379.77	232.08	443.06	1054.92	0.00	74.46	111.70	1241.08
	Total		**4536.48**	**822.24**	**226.82**	**85.06**	**2041.42**	**1247.53**	**2381.65**	**5670.60**	**0.00**	**360.62**	**540.93**	**6572.16**

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

2.3 Physiography

The micro-watersheds of IWMP-X is situated at an elevation of some 111 to 139 m above mean sea level and has relief from 17 to 35 m. General topography of the watershed is mild to gentle.

Slope: Spatial distribution of different slope classes was prepared using Arc GIS. Slope was divided into five classes' viz. 0-0.5, 0.5-1.0, 1-3, 3-5, and more than 5 per cent. The dominant slope category in the project were 1-3 per cent (69%) followed by 3-5 per cent (12%).

2.4 Climate

The annual rainfall of the Bundelkhand region varies from 800 to 1300 mm, about 90% of which is received during South-West monsoon period (Singh *et al*. 2002). The major part of the rainfall is received during the month of July and August. The length of growing season in Bundelkhand ranges between 90 to 150 days depending upon rainfall and temperature regimes. The winter rains are erratic, occasional, meager and uncertain. The total rainy days/year vary from 30-45 in the region with an average of 37. The distribution of rainfall is very erratic. Low rainfall and drought are common features. Long dry spells during rainy season are also experienced often, which adversely affect the crops. It has been observed that in a cycle of 5 years, 2 are normal, 2 drought years and 1 is excessive rainfall year (Tiwari *et al*. 1998).

The climate of Banda is characterized by a hot dry summer and cold winter and is marked for high variability of rainfall year to year. There are primarily four seasons: – Dry Summer season – from March to May i.e. before advent of monsoon, moist summer season – from June to September (Monsoon) transition period - in October and November, which is the post monsoon period, and winter season – from December to February The coldest months in the year are December and January. Average monthly rainfall and temperature

Table 2.4: Average monthly rainfall and temperature at IWMP-X, Banda, U.P.

Month	Rainfall in mm.					Temperature c	
	2007	2008	2009	2010	2011	Max.	Min.
January	0.0	-	0.0	13.7	0.3	6.5	3.5
February	93.9	-	0.0	37.0	9.8	11.2	8.4
March	41.2	0.0	-	0.0	0.0	32.8	21.6
April	0.0	0.0	-	0.0	0.0	38.4	29.7
May	0.0	16.1	47.0	1.7	38.5	45.4	34.2
June	36.0	121	544	7.1	218	47.2	35.1
July	144.5	444.2	143.1	243.4	245.1	46.4	33.6
August	186.7	193.9	194.0	168.7	316.2	42.3	31.7
September	93.9	66.0	178.1	167.9	146.6	37.4	29.2
October	0.0	6.0	74.5	7.3	0.0	34.7	28.5
November	0.0	9.7	16.3	22.2	0.0	31.4	19.8
December	0.0	0.0	8.7	0.5	0.0	24.4	9.3

Source: Data site of Agro-meteorological Deptt.

The open pan evaporation varied in the range of 0.5 to 23 mm/day during the year with average of about 5 mm/day. Average relative humidity varied in the range of 25 to 98 per cent, however the range of wind speed is 0.9 to 16 kmph. The details of flood and drought in the project area are showed in Table 2.5.

Table 2.5: Details of flood and drought in the project area (IWMP-X, Banda) Project IWMP- X

Name of Micro Watershed	Particulars	Villages	Periodicity		Not affected
			Annual	Any other (please specify)	
Khaptha Kalan Paparenda Atarahat Gajani Bachheura Karahiya	Flood	No. of villages: 16	NA	NA	NA
		Name(s) of villages	NA	NA	NA
	Drought	**No. of villages**- 16 **Name of Village:** Niwaich, Khaptha Kalan , Bichhawahi, Atarahat, Kumhauli, Paparenda, Gajani, Amaraiya, Bachheura, Papari, Parsaunda, Luktara, Barethi Askaran, Khokharahi, Lama and Karahiy	**twice in 5 years** however, the region experienced severe drought during 2004-2007 and 2009 & 2010 were deficit by about 17 to 20 per cent		

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

CHAPTER – 3

BASELINE SURVEY AND PARTICIPATORY RURAL APPRAISAL

Participatory rural appraisal (PRA) is a tool to appraise the socio-economic conditions along with all kind of resources available in the watershed through the active participation of the villagers. There are several tools and techniques of PRA. The PRA including house hold survey of Khaptha Kalan, Paparenda, Atarahat , Gajani, Bachheura and Karahiya micro-watershed was conducted by PIA and described in the subsequent sections.

3.1. Social-Economic Analysis

About 22 per cent of the population is scheduled caste. Population details of the IWMP-X are given in Table 3.1. In general 8 per cent population migrate from the project area due to drought and earn livelihood, however, migration was more than 50 per cent during 2007-08 due to continuous drought from 2004 to 2007 in the region. Majority of population migrate to New Delhi, Haryana and Punjab during drought year. The scenario of migration, infrastructure and common properties resources available in the project was analysed through house hold survey and is presented in Table 3.2, 3.3 and 3.4, respectively.

Table 3.1: Demographic Features in the project area (IWMP-X, Banda)

Sr. No.	Name of Micro Watershed	Name of village	Total Population			Population of SC/ST		
			Total	Male	Female	Total	Male	Female
1	2	3	4	5	6	7	8	9
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	3319	1726	1593	729	379	350
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama	3229	1679	1550	710	369	341
3	Atarahat (2ClA7c2b)	Niwaich, Khaptha Kalan, Atarahat, Paparenda	2393	1244	1149	525	273	252
4	Gajani (2ClA7c1a)	Bichhawahi, Atarahat, Kumhauli, Gajani, Amaraiya,	3470	1804	1666	763	397	366

		Pipari, Parsunda, Barethi Askran, Khoharahi						
5	Bachheura (2ClA7c2a)	Atarahat, Paparenda, Bachheura, Pipari, Parsaunda, Barethi Askaran	2519	1310	1209	554	288	266
6	Karahiya (2ClA7c2e)	Khaptha Kalan , Paparenda, Luktara, Lama, Karahiya	3587	1865	1722	788	410	378
	Total		**18517**	**9628**	**8889**	**4069**	**2116**	**1953**

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

Table 3.2: Details of land holding pattern in IWMP-X, Banda

Sr. No.	Names MWS with code	Type of Farmer	No. of households	No. of BPL households	Land holding (ha)		
					Irrigated	**Rainfed**	**Total**
1	Khaptha Kalan (2ClB5a2f)	(i) Big (above 4 ha.)	40	-	72.22	99.78	172.00
		(ii) Medium (2-4 ha.)	180	-	43.33	370.67	414.00
		(iii) Small (1-2 ha.)	250	55	28.89	271.11	300.00
		(iv) Marginal (0-1ha.)	325	243	-	110.20	110.20
		(v) Landless	35	35	-	-	-
		Total	**830**	**333**	**144.45**	**851.75**	**996.20**
2	Paparenda (2ClA7c2c)	(i) Big (above 4 ha.)	43	-	74.05	110.85	184.90
		(ii) Medium (2-4 ha.)	190	-	44.43	373.57	418.00
		(iii) Small (1-2 ha.)	260	57	29.62	282.38	312.00
		(iv) Marginal (0-1ha.)	319	239	-	106.41	106.41

		(v) Landless	38	38	-	-	-
		Total	**850**	**334**	**148.09**	**873.22**	**1021.31**
3	Atarahat (2ClA7c2b)	(i) Big (above 4 ha.)	35	-	58.04	92.46	150.50
		(ii) Medium (2-4 ha.)	150	-	34.82	295.18	330.00
		(iii) Small (1-2 ha.)	188	41	23.22	202.38	225.60
		(iv) Marginal (0-1ha.)	264	19	-	94.46	94.46
		(v) Landless	28	28	-	-	-
		Total	**665**	**88**	**116.08**	**684.48**	**800.56**
4	Gajani (2ClA7c1a)	(i) Big (above 4 ha.)	48	-	77.73	123.87	201.60
		(ii) Medium (2-4 ha.)	202	-	46.64	397.76	444.40
		(iii) Small (1-2 ha.)	274	32	31.09	297.71	328.80
		(iv) Marginal (0-1ha.)	325	27	-	97.37	97.37
		(v) Landless	41	41	-	-	-
		Total	**890**	**100**	**155.46**	**916.71**	**1072.17**
5	Bachheura (2ClA7c2a)	(i) Big (above 4 ha.)	30	-	52.59	82.41	135.00
		(ii) Medium (2-4 ha.)	132	-	31.56	285.24	316.80
		(iii) Small (1-2 ha.)	165	19	21.04	176.96	198.00
		(iv) Marginal (0-1ha.)	249	21	-	75.64	75.64
		(v) Landless	24	24	-	-	-
		Total	**600**	**64**	**105.19**	**620.25**	**725.44**
6	Karahiya (2ClA7c2e)	(i) Big (above 4 ha.)	52	-	76.48	147.12	223.60
		(ii) Medium (2-4 ha.)	195	-	45.89	383.11	429.00
		(iii) Small (1-2 ha.)	268	32	30.59	291.01	321.60
		(iv) Marginal (0-1ha.)	325	27	-	80.72	80.72
		(v) Landless	35	35	-	-	-
		Total	**875**	**94**	**152.96**	**901.96**	**1054.92**
		Total	**4710**	**1013**	**822.24**	**4848.36**	**5670.60**

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

Table 3.3: Details of migration from Project area (IWMP-X, Banda): Pre-project status

Sl. No.	Names of Watershed	Name of village	No. of persons migrating	No. of days per year of migration	Major reason(s) for migrating	Distance of destination of migration from the village (km)	Occupation during migration	Income from such occupation (Rs. in lakh)
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	265	100-150	Drought / Earn money	800-1600 Km	Labour	0.25-0.40
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama	258	100-150	-do-	800-1600 Km	Labour	0.25-0.40
3	Atarahat (2ClA7c2b)	Niwaich, Khaptha Kalan, Atarahat, Paparenda	191	100-150	-do-	800-1600 Km	Labour	0.25-0.40
4	Gajani (2ClA7c1a)	Bichhawahi, Atarahat, Kumhauli, Gajani, Amaraiya, Pipari, Parsunda, Barethi Askran, Khoharahi	277	100-150	-do-	800-1600 Km	Labour	0.25-0.40
5	Bachheura (2ClA7c2a)	Atarahat, Paparenda, Bachheura, Pipari, Parsaunda, Barethi Askaran	201	100-150	-do-	800-1600 Km	Labour	0.25-0.40
6	Karahiya (2ClA7c2e)	Khaptha Kalan , Paparenda, Luktara, Lama, Karahiya	287	100-150	-do-	800-1600 Km	Labour	0.25-0.40
	Total		**1479**					

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

Table 3.4: Details of infrastructure in IWMP-X, Banda

Name of Project	Parameters		Status			
IWMP- X	(i)	Name of villages connected to the main road by an all-weather road	Banda to Tindawari road			
	(ii)	Village's Name provided with electricity	All villages			
	(iii)	No. of households without access to drinking water	About 5-10 per cent house holds depends on others' source of drinking water			
	(iv)	No. of educational institutions : Primary(P)/ Secondary(S)/ Higher Secondary(HS)/ vocational institution(VI)	(P) 24	(S) 08	(HS) 03	(VI) -
	(v)	Names of villages with access to Primary Health Centre	01			
	(vi)	Names of villages with access to Veterinary Dispensary	01			
	(vii)	Names of villages with access to Post Office	03			
	(viii)	Names of villages with access to Banks	01			
	(ix)	Names of villages with access to Markets/ mandis	N.A			
	(x)	Names of villages with access to Agro-industries	N.A			
	(xi)	Total quantity of surplus milk/ deficit	-			
	(xii)	No. of milk collection centers (e.g. Union(U)/ Society(S)/ Private agency(PA)/ others (O))	(U) -	(S) -	(PA) -	(O) 03
	(xiii)	Name of villages with access to Anganwadi Centre	At each Gram Panchayat			
	(xiv)	Community centre, Panchayat Ghar	Available			

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

Table 3.5: Details of common property resources In IWMP-X, Banda, U.P.

S. No.	Names of Project	CPR Particulars	Total Area (ha) Area owned/ In possession of				Area available for treatment (ha)			
			Pvt. persons	Govt. Revenue	PRI	Any other (Pl. Specify)	Pvt. persons	Govt. (specify dept.)	PRI	Any other (Pl. Specify)
	IWMP-X	(i) Wasteland/ degraded land	326.25	-	26.35	-	326.25	-	26.35	-
		(ii) Pastures	-	-	-	-	-	-	-	-
		(iii) Orchards	-	-	-	-	-	-	-	-
		(iv) Village Woodlot	34.98	-	27.94	-	34.98	-	27.94	-
		(v) Forest	-	-	-	-	-	-	-	-
		(vi) Village Ponds/ Tanks	-	-	8.46	-	-	-	-	-
		(vii) Community Buildings	-	-	33.25	-	-	-	-	-
		(viii) Weekly Markets	-	-	-	-	-	-	-	-
		(ix) Permanent markets	-	-	-	-	-	-	-	-
		(x) Temples/ Places of worship	-	-	16.35	-	-	-	-	-
		(xi) Habitat, Chakmarg, Sector, Road etc	-	301.26	-	-	-	-	-	-
	IWMP-X		**361.23**	**301.26**	**112.35**	**-**	**361.23**	**-**	**54.29**	**-**

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

3.2 Soil and Land Holding Pattern

Major soils of the project are light and medium textured soil (sandy loam, loam and silty loam). Area details of each micro watershed are given in Table 3.6

Table 3.6: Details of Soil texture in IWMP-X, Banda

Sr. No.	MWS Project	Area in different Soil Group (ha)			
		Light textured soil (sand, loamy sand)	Medium textured soil (Sandy loam, loam, silt loam)	Heavy textured soil (Clayey)	Details
1	Khaptha Kalan (2ClB5a2f)	246.12	597.72	328.16	Purwa, Mar+kabar
2	Paparenda (2ClA7c2c)	252.32	612.79	336.43	Purwa, Mar+kabar
3	Atarahat (2ClA7c2b)	176.97	429.78	235.96	Purwa, Mar+kabar
4	Gajani (2ClA7c1a)	264.89	643.30	353.19	Purwa, Mar+kabar
5	Bachheura (2ClA7c2a)	179.23	435.27	238.97	Purwa, Mar+kabar
6	Karahiya (2ClA7c2e)	260.63	632.95	347.50	Purwa, Mar+kabar
	Total	**1380.15**	**3351.80**	**1840.20**	**6572.16**

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

3.3 Major Crops, its Productivity and Production

Micro-watershed wise grown crops, their productivity and production under irrigated and rainfed condition is given in Table 3.7. As far as productivity of cereals is concerned, it is significantly lower than the state and national average. Micro-watershed wise cropping intensity varies from 102.66 to 105.30 per cent with an average 103.81 per cent for the project.

Table 3.7: Micro -watershed wise details of Crops, their Productivity and Production in IWMP-X, Banda Khaptha Kalan (2ClB5a2f)

S.No	Crop	Area (ha.)		Productivity q,/ha		Production (q.)			
						Grain/Main product		Fodder/Fuel/ Other Product.	
		Irrigated	Rainfed	Irrigated	Rainfed.	Irrigated	Rainfed	Irrigated	Rainfed
A	**Kharif**								
1	Urd	0.00	80.17	0.00	2.90	0.00	232.49	0.00	464.99
2	Moong	0.00	31.69	0.00	2.60	0.00	82.39	0.00	148.31
3	Arhar	0.00	90.35	0.00	4.80	0.00	433.68	0.00	73.73
4	Bajra	0.00	21.36	0.00	4.9	0.00	104.66	0.00	481.45
5	Sorghum	0.00	115.24	0.00	5.80	0.00	668.39	0.00	3074.60
6	Til	0.00	12.37	0.00	1.80	0.00	22.27	0.00	42.31
7	Paddy	42.36	0.00	11.20	0.00	474.43	0.00	426.99	0.00
	Total	**42.36**	**351.18**			**474.43**	**1543.89**	**426.99**	**4285.38**
B	**Rabi**								
1	Wheat	102.09	45.26	21.30	11.30	2174.49	511.44	2283.22	506.32
2	Masoor	0.00	65.38	0.00	10.20	0.00	666.88	0.00	660.21
3	Gram	0.00	242.36	0.00	4.80	0.00	1163.33	0.00	7720.24
4	Pea	0.00	55.68	0.00	5.80	0.00	322.94	0.00	310.03
5	Mustard	0.00	124.36	0.00	6.90	0.00	858.08	0.00	3003.29
	Total	**102.09**	**533.04**			**2174.49**	**3522.67**	**2283.22**	**12200.09**
C	**Zaid**								
	Nil								
	Cultivable Area	**996.20**	**Cropping Intensity**		**103.26**				

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

Paparenda (2ClA7c2c)

S.No	Crop	Area (ha.)		Productivity q,/ha		Production (q.)			
						Grain/Main product		Fodder/Fuel/ Other Product.	
		Irrigated	Rainfed	Irrigated	Rainfed.	Irrigated	Rainfed	Irrigated	Rainfed
A	**Kharif**								
1	Urd	0.00	78.49	0.00	2.90	0.00	227.62	0.00	455.24
2	Moong	0.00	27.48	0.00	2.60	0.00	71.45	0.00	128.61
3	Arhar	0.00	112.36	0.00	4.80	0.00	539.33	0.00	91.69
4	Bajra	0.00	23.57	0.00	4.90	0.00	115.49	0.00	531.27
5	Sorghum	0.00	148.79	0.00	5.80	0.00	862.96	0.00	3969.61
6	Til	0.00	14.59	0.00	1.80	0.00	26.26	0.00	49.90
7	Paddy	25.36	0.00	11.20	0.00	284.03	0.00	255.63	0.00
	Total	**25.36**	**405.28**			**284.03**	**1843.11**	**255.63**	**5226.31**
B	**Rabi**								
1	Wheat	122.73	54.36	21.30	11.30	2614.16	614.27	2744.87	608.13
2	Masoor	0.00	78.26	0.00	10.20	0.00	798.25	0.00	790.27
3	Gram	0.00	213.26	0.00	4.80	0.00	1023.65	0.00	7720.24
4	Pea	0.00	65.34	0.00	5.80	0.00	378.97	0.00	363.81
5	Mustard	0.00	136.25	0.00	6.90	0.00	940.13	0.00	3290.44
	Total	**122.73**	**547.47**			**2614.16**	**3755.27**	**2744.87**	**12772.89**
C	**Zaid**								
	Nil								
	Cultivable Area	**1021.31**	**Cropping Intensity**		**105.30**				

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

Atarahat (2ClA7c2b)

S.No	Crop	Area (ha.)		Productivity q,/ha		Production (q.)			
						Grain/Main product		Fodder/Fuel/ Other Product.	
		Irrigated	Rainfed	Irrigated	Rainfed.	Irrigated	Rainfed	Irrigated	Rainfed
A	**Kharif**								
1	Urd	0.00	65.18	0.00	2.90	0.00	189.02	0.00	378.04
2	Moong	0.00	22.66	0.00	2.60	0.00	58.91	0.00	106.04
3	Arhar	0.00	82.35	0.00	4.80	0.00	395.28	0.00	67.20
4	Bajra	0.00	18.36	0.00	4.90	0.00	89.96	0.00	413.83
5	Sorghum	0.00	110.35	0.00	5.80	0.00	640.03	0.00	2944.14
6	Til	0.00	12.36	0.00	1.80	0.00	22.25	0.00	42.27
7	Paddy	35.36	0.00	11.20	0.00	396.03	0.00	356.43	0.00
	Total	**35.36**	**311.26**			**396.03**	**1395.46**	**356.43**	**3951.53**
B	**Rabi**								
1	Wheat	80.72	27.38	21.30	11.30	1719.37	309.42	1805.34	306.33
2	Masoor	0.00	69.24	0.00	10.20	0.00	706.25	0.00	699.19
3	Gram	0.00	212.36	0.00	4.80	0.00	1019.33	0.00	7720.24
4	Pea	0.00	36.25	0.00	5.80	0.00	210.25	0.00	201.84
5	Mustard	0.00	84.65	0.00	6.90	0.00	584.09	0.00	2044.30
	Total	**80.72**	**429.88**			**1719.37**	**2829.33**	**1805.34**	**10971.89**
C	**Zaid**								
	Nil								
	Cultivable Area	**800.56**	**Cropping Intensity**		**102.66**				

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

Gajani (2ClA7c1a)

S.No	Crop	Area (ha.)		Productivity q,/ha		Production (q.)			
						Grain/Main product		Fodder/Fuel/ Other Product.	
		Irrigated	Rainfed	Irrigated	Rainfed.	Irrigated	Rainfed	Irrigated	Rainfed
A	**Kharif**								
1	Urd	0.00	85.98	0.00	2.90	0.00	249.35	0.00	498.70
2	Moong	0.00	33.99	0.00	2.60	0.00	88.37	0.00	159.06
3	Arhar	0.00	112.91	0.00	4.80	0.00	541.98	0.00	92.14
4	Bajra	0.00	22.91	0.00	4.90	0.00	112.25	0.00	516.36
5	Sorghum	0.00	145.07	0.00	5.80	0.00	841.38	0.00	3870.37
6	Til	0.00	13.27	0.00	1.80	0.00	23.88	0.00	45.37
7	Paddy	55.36	0.00	11.20	0.00	620.03	0.00	558.03	0.00
	Total	**55.36**	**414.12**			**620.03**	**1857.22**	**558.03**	**5182.00**
B	**Rabi**								
1	Wheat	100.10	54.36	21.30	11.30	2132.23	614.27	2238.84	608.13
2	Masoor	0.00	65.28	0.00	10.20	0.00	665.86	0.00	659.20
3	Gram	0.00	294.36	0.00	4.80	0.00	1412.93	0.00	7720.24
4	Pea	0.00	52.21	0.00	5.80	0.00	302.84	0.00	290.73
5	Mustard	0.00	122.35	0.00	6.90	0.00	844.22	0.00	2954.75
	Total	**100.10**	**588.56**			**2132.23**	**3840.11**	**2238.84**	**12233.04**
C	**Zaid**								
	Nil								
	Cultivable Area	**1072.17**	**Cropping Intensity**		**102.86**				

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

Bachheura (2ClA7c2a)

S.No	Crop	Area (ha.)		Productivity q,/ha		Production (q.)			
						Grain/Main product		Fodder/Fuel/ Other Product.	
		Irrigated	Rainfed	Irrigated	Rainfed.	Irrigated	Rainfed	Irrigated	Rainfed
A	**Kharif**								
1	Urd	0.00	57.32	0.00	2.90	0.00	166.23	0.00	332.46
2	Moong	0.00	30.15	0.00	2.60	0.00	78.39	0.00	141.10
3	Arhar	0.00	75.28	0.00	4.80	0.00	361.32	0.00	61.42
4	Bajra	0.00	26.35	0.00	4.90	0.00	129.12	0.00	593.93
5	Sorghum	0.00	96.71	0.00	5.80	0.00	560.92	0.00	2580.25
6	Til	0.00	16.28	0.00	1.80	0.00	29.30	0.00	55.68
5	Paddy	20.36	0.00	11.20	0.00	228.03	0.00	205.23	0.00
	Total	**20.36**	**302.09**			**228.03**	**1325.29**	**205.23**	**3764.84**
B	**Rabi**								
1	Wheat	84.83	33.26	21.30	11.30	1806.86	375.84	1897.20	372.08
2	Masoor	0.00	43.15	0.00	10.20	0.00	440.13	0.00	435.73
3	Gram	0.00	162.23	0.00	4.80	0.00	778.70	0.00	7720.24
4	Pea	0.00	46.48	0.00	5.80	0.00	269.58	0.00	258.80
5	Mustard	0.00	82.14	0.00	6.90	0.00	566.77	0.00	1983.68
	Total	**84.83**	**367.26**			**1806.86**	**2431.02**	**1897.20**	**10770.53**
C	**Zaid**								
	Nil								
	Cultivable Area	**725.44**	**Cropping Intensity**		**103.96**				

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

Karahiya (2ClA7c2e)

S.No	Crop	Area (ha.)		Productivity q,/ha		Production (q.)			
						Grain/Main product		Fodder/Fuel/ Other Product.	
		Irrigated	Rainfed	Irrigated	Rainfed.	Irrigated	Rainfed	Irrigated	Rainfed
A	**Kharif**								
1	Urd	0.00	84.78	0.00	2.90	0.00	245.87	0.00	491.74
2	Moong	0.00	35.16	0.00	2.60	0.00	91.42	0.00	164.55
3	Arhar	0.00	111.71	0.00	4.80	0.00	536.22	0.00	91.16
4	Bajra	0.00	24.35	0.00	4.90	0.00	119.32	0.00	548.85
5	Sorghum	0.00	143.87	0.00	5.80	0.00	834.42	0.00	3838.35
6	Til	0.00	16.35	0.00	1.80	0.00	29.43	0.00	55.92
5	Paddy	35.26	0.00	11.20	0.00	394.91	0.00	355.42	0.00
	Total	**35.26**	**416.22**			**394.91**	**1856.68**	**355.42**	**5190.56**
B	**Rabi**								
1	Wheat	117.70	45.64	21.30	11.30	2507.07	515.76	2632.42	510.60
2	Masoor	0.00	85.36	0.00	10.20	0.00	870.67	0.00	861.97
3	Gram	0.00	265.35	0.00	4.80	0.00	1273.68	0.00	7720.24
4	Pea	0.00	55.41	0.00	5.80	0.00	321.40	0.00	308.54
5	Mustard	0.00	119.82	0.00	6.90	0.00	826.75	0.00	2893.62
	Total	**117.70**	**571.59**			**2507.07**	**3808.26**	**2632.42**	**12294.97**
C	**Zaid**								
	Nil								
	Cultivable Area	**1054.92**	**Cropping Intensity**		**104.80**				

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

It was observed that the productivity of wheat, gram, mustard, arhar and linseed was about 66, 37, 33,49 and 26 per cent, respectively, less than the average (last 10 years- *Source: Directorate of Economics and Statistics, Department of Agriculture and Cooperation*) productivity of the state of Uttar Pradesh.

Table 3.8: Food, fodder and fuel production in the project area (IWMP-X, District- Banda)

Summary	Unit	Production During Kharif	Production during Rabi	Total Production	Remarks
Food Production (Atlas.)					
Cereals	q	10284.20	15895.18	26179.38	-
Pulses	q	1781.51	12625.64	14407.15	-
Oilseed	q	153.39	4620.02	4773.41	-
Grand Total	q	12219.10	33140.84	45359.94	-
					-
Fodder Production (Atlas.)					-
Dry Fodder	q	100867.83			-
Green Fodder	q	23363.02			-
Fuel Production					
Arhar+Mustard+Til Plants	q				-
Over all Cropping Intensity	103.81				-

3.4 Agroforestry and Horticulture

There are no defined agroforestry and orchards in the project area, However, few scattered trees of desi ber, aonla, guava, kathal, etc. are observed in the micro-watersheds which is consumed locally (Table 3.9).

Table 3.9: Agroforestry and Horticulture Status in Microwatershed

S. N.	Name of micro watershed with code	Name of village	Name of Important horticultural crop						
			Orchard				Scattered Fruit Crop		
			Name	Area ha.	Productivity qtl/ha	Production qtls	No.	Productivity qtl/No.	Production qtls
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	-	-	-	-	30	0.26	7.8
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama	-	-	-	-	35	0.25	8.75

3	Atarahat (2ClA7c2b)	Niwaich, Khaptha Kalan, Atarahat, Paparenda	-	-	-	-	20	0.23	4.6
4	Gajani (2ClA7c1a)	Bichhawahi, Atarahat, Kumhauli, Gajani, Amaraiya, Pipari, Parsunda, Barethi Askran, Khoharahi	-	-	-	-	40	0.21	8.4
5	Bachheura (2ClA7c2a)	Atarahat, Paparenda, Bachheura, Pipari, Parsaunda, Barethi Askaran	-	-	-	-	33	0.26	8.58
6	Karahiya (2ClA7c2e)	Khaptha Kalan , Paparenda, Luktara, Lama, Karahiya	-	-	-	-	44	0.28	12.32
	Total		-	-	-	-	**172**	**0.25**	**42.65**
	(Scattered fruit plant of Papaya, Kathal, Ber, Aonla, Guava, etc)								

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

3.5 Livestock and Fisheries

Majorly of the course of breed mostly desi cow are prevalent in the project area. The productivity of livestock in Project area is significantly lower than the average productivity of the state. Livestock and its productivity details are available in Table 3.10 and 3.11, respectively.

Table 3.10: Livestock Population (no.) in IWMP-X, Banda

Sr. No.	Name of Micro watershed with code	Name of Village	Cow		Buffalo		Ox /Bull	Goat	Sheep	Pigeries	Poultry		
			Desi	Crossed	Desi	Murrah					Broiler	Layers	Total
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	335	38	188	25	44	784	25	5	-	19	**1463**
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama	343	39	188	30	48	803	24	4	-	20	**1499**
3	Atarahat (2ClA7c2b)	Niwaich, Khaptha Kalan, Atarahat, Paparenda	269	30	151	20	36	628	26	6	-	22	**1188**
4	Gajani (2ClA7c1a)	Bichhawahi, Atarahat, Kumhauli, Gajani, Amaraiya, Pipari, Parsunda, Barethi Askran, Khoharahi	359	41	193	35	42	841	20	8	-	15	**1554**
5	Bachheura (2ClA7c2a)	Atarahat, Paparenda, Bachheura, Pipari, Parsaunda, Barethi Askaran	241	29	136	18	28	567	18	7	-	13	**1057**
6	Karahiya (2ClA7c2e)	Khaptha Kalan , Paparenda, Luktara, Lama, Karahiya	351	42	203	22	38	826	29	9	-	25	**1545**
	Total		**1898**	**219**	**1059**	**150**	**236**	**4449**	**142**	**39**	-	**114**	**8306**

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

Table 3.11: Productivity of livestock in IWMP-X, Banda

SN	Name of Micro watershed with code	Name of Village	Milk Production (Liter Per day)				Goatry	Poultry		Piggeries weight Kg/Pig
			Cows		Buffalos		Weight in Kg/goat	Broiler Weight in Kg/ Brl	Layers No. of eggs/day	
			Desi	Crossed	Desi	Murrah				
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	1.2	5.3	2.5	5.6	22.0	-	165	-
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama	1.6	5.1	2.9	5.1	23.0	-	190	-
3	Atarahat (2ClA7c2b)	Niwaich, Khaptha Kalan, Atarahat, Paparenda	1.5	5.2	3.4	5.9	20.0	-	185	-
4	Gajani (2ClA7c1a)	Bichhawahi, Atarahat, Kumhauli, Gajani, Amaraiya, Pipari, Parsunda, Barethi Askran, Khoharahi	1.4	5.6	3.1	5.2	22.0	-	168	-
5	Bachheura (2ClA7c2a)	Atarahat, Paparenda, Bachheura, Pipari, Parsaunda, Barethi Askaran	1.3	5.7	3.5	5.1	26.0	-	178	-
6	Karahiya (2ClA7c2e)	Khaptha Kalan , Paparenda, Luktara, Lama, Karahiya	1.7	5.4	3.7	5.3	28.0	-	168	-
	Average		**1.5**	**5.4**	**3.2**	**5.4**	**23.5**	**-**	**176**	-

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

3.6 Forest and Grassland

There is no grassland available in the project area, however, information on naturally generated/grown degraded forest is given in Table 3.12.

Table 3.12: Forest, vegetative cover/grassland in IWMP-X, Banda

Sr. No.	Name & Code of Micro watershed	Name of Village	Forest (Area ha)			Grassland (Area ha)		Other vegetative cover (Area ha)	
			Reserve	Gram Samaj (Natural /Planted)	Total	Gram Samaj	Private	Gram Samaj	Private
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	-	-	-	4.94	-	2.4	1.55
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama	-	-	-	4.33	-	2.53	1.52
3	Atarahat (2ClA7c2b)	Niwaich, Khaptha Kalan, Atarahat, Paparenda	-	-	-	5.8	-	2.07	1.58
4	Gajani (2ClA7c1a)	Bichhawahi, Atarahat, Kumhauli, Gajani, Amaraiya, Pipari, Parsunda, Barethi Askran, Khoharahi	-	-	-	3.83	-	2.4	2.37
5	Bachheura (2ClA7c2a)	Atarahat, Paparenda, Bachheura, Pipari, Parsaunda, Barethi Askaran	-	-	-	5.57	-	2.53	1.58
6	Karahiya (2ClA7c2e)	Khaptha Kalan , Paparenda, Luktara, Lama, Karahiya	-	-	-	5.79	-	2.76	1.74
	Total		-	-	-	**30.26**	-	**14.69**	**10.34**

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

3.7 Livelihood Status

Assestless/landless people earn their livelihood mainly from labour and *batai (share cropping)*. They about Rs. 3000/per month for share cropping. It is expected that their income will enhance due to watershed management as it will generate share cropping employment opportunity on sustainable basis. Intervention presently on piggeries, fisheries, black smithy and carpentry are not in practice. Livelihood status of landless, farmers and interventions based livelihood status are shown in Table 3.13, 3.14 and 3.15, respectively.

Table 3.13: Livelihood Status of Landless People

Sr. No.	Name & Code of micro watershed	Name of Village	Name of Livelihood Activity	No. of house hold engaged				Pre project Average Income/ Year	Desired Activities	Expected Income from desired activities Rs/Year	Remarks
				Sc	Other	Women	Total				
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	Labour/ Batai	7	25.00	3	35	25,000-30,000	The landless people can increase their income by adoting one or two activities of goatary, poultry, dairy, technical shop, general store, dona making, Rope making, etc. besides	50,000-55,000	Income may be increased by about two times
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama		8	27.00	3	38				
3	Atarahat (2ClA7c2b)	Niwaich, Khaptha Kalan, Atarahat, Paparenda		6	20.00	2	28				
4	Gajani (2ClA7c1a)	Bichhawahi, Atarahat, Kumhauli, Gajani, Amaraiya, Pipari, Parsunda,		9	30.00	2	41				

		Barethi Askran, Khoharahi							Batai/labour work		
5	Bachheura (2ClA7c2a)	Atarahat, Paparenda, Bachheura, Pipari, Parsaunda, Barethi Askaran		5	17.00	2	24				
6	Karahiya (2ClA7c2e)	Khaptha Kalan , Paparenda, Luktara, Lama, Karahiya		7	25.00	3	35				
	Total			**42**	**144**	**15**	**201**	**25,000-30,000**	**-**	**50,000-55,000**	**-**

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

Table 3.14: Details of Livelihood Status of the Farmers

Sr. No.	Name & Code of micro watershed	Name of Village	Name of Livelihood Activity	No. of House hold engaged				Pre project Average Income	Desired Activities	Expected Income from desired activities	Remarks
				Sc	Other	Women	Total				
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	Agriculture + A.H., Labour	174	583.00	38	795	40000-50000	Productivity could be enhance through natural resource conservation, livestock management and micro-enterprises	55,000-65,000	Income may be increased by about 30 to 40 per cent
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama		178	585.00	49	812				
3	Atarahat (2ClA7c2b)	Niwaich, Khaptha Kalan, Atarahat, Paparenda		140	462.00	35	637				
4	Gajani (2ClA7c1a)	Bichhawahi, Atarahat, Kumhauli, Gajani, Amaraiya, Pipari, Parsunda, Barethi Askran, Khoharahi		186	615.00	48	849				
5	Bachheura (2ClA7c2a)	Atarahat, Paparenda, Bachheura,		126	420.00	30	576				

		Pipari, Parsaunda, Barethi Askaran									
6	Karahiya (2ClA7c2e)	Khaptha Kalan , Paparenda, Luktara, Lama, Karahiya		184	616.00	40	840				
	Total			**988**	**3281**	**240**	**4509**	**35000-45000**	**-**	**55,000-65,000**	**-**

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

Table 3.15: Present Livelihood Status (No. of households/Income per year) in IWMP-X, Banda 'Income in Rs

Sr. No	Name of MWS with code	Name of village	Activities																			
			Dairy		Poultry		Goatry		Piggeries		Fisheries		Black Smithy		Carpentry		Stitching/ knitting		Wages		Agriculture	
			No	Av. income	No	Av. income	No	Av. income	No	Av. income	No	Av. income	No	Av. income	No	Av. income	No	Av. income	No	Av. income	No	Av. income
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	167	11,500-13,500	24	13,000-16,000	334	21000-35000	18	7500-9000	-	-	2	2000-4000	1	2500-4500	-	-	53	11,000-13,000	113	25,000-27,000
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama	165		13		330		12		-		3		3		-		58		153	
3	Atarahat (2ClA7c2b)	Niwaich, Khaptha Kalan, Atarahat, Paparenda	163		18		326		15		-		1		2		-		52		214	
4	Gajani (2ClA7c1a)	Bichhawahi, Atarahat, Kumhauli,	105		10		210		15		-		3		1		-		41		215	

		Gajani, Amaraiya, Pipari, Parsunda, Barethi Askran, Khoharahi																			
5	Bachheura (2ClA7c2a)	Atarahat, Paparenda, Bachheura, Pipari, Parsaunda, Barethi Askaran	130		8		260		12		-		2		3		-		39		107	
6	Karahiya (2ClA7c2e)	Khaptha Kalan , Paparenda, Luktara, Lama, Karahiya	126		18		252		14		-		2		2		-		35		159	
	Total		**856**	**11,500-13,500**	**91**	**13,000-16,000**	**1712**	**21000-35000**	**86**	**7500-9000**	**-**	**-**	**13**	**2000-4000**	**12**	**2500-4500**	**-**	**-**	**278**	**11,000-13,000**	**961**	**25,000-27,000**

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

3.8 Hydrology, Water resources and Soil and moisture Conservation

Shallow dug wells are the only means of irrigation in the area and these wells support only for life saving irrigation. In general, irrigation interval is short e to short due water holding capacity of the soils. For soil and water conservation only field bund exist presently Use of micro-irrigation is almost nil in the area. Groundwater status, irrigation status and source are given in Table 3.16, 3.17 and 3.18, respectively.

Table 3.16: Ground Water Status in IWMP-X, Banda

Sr. No.	Name & Code of Micro watershed	Name of Village	Depth of Ground Water Table (Below Ground level) in Meter		No. of Observation well	Remarks
			Before Monsoon	After Monsoon		
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	Avrg.14.80	Avrg.11.50	07	-
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama	Avrg.15.50	Avrg.12.60	06	-
3	Atarahat (2ClA7c2b)	Niwaich, Khaptha Kalan, Atarahat, Paparenda	Avrg.14.75	Avrg.11.20	09	-
4	Gajani (2ClA7c1a)	Bichhawahi, Atarahat, Kumhauli, Gajani, Amaraiya, Pipari, Parsunda, Barethi Askran, Khoharahi	Avrg.15.25	Avrg.10.35	07	-
5	Bachheura (2ClA7c2a)	Atarahat, Paparenda, Bachheura, Pipari, Parsaunda, Barethi Askaran	Avrg.16.70	Avrg.11.40	08	-
6	Karahiya (2ClA7c2e)	Khaptha Kalan , Paparenda, Luktara, Lama, Karahiya	Avrg.14.75	Avrg.12.30	05	-
	Total		**14.75-16.70**	**10.35-12.60**		-

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

Generally stony layer is observed at a depth ranging between 1-5 m in all districts of bundelkhand in Uttar Pradesh except Jalaun and Hamirpur district. Depth of water table in open shallow dug wells in the project area was about 14 to 17 m during pre monsoon; however it was in the range of 10 to 13 m during post monsoon season.

Table 3.17: Irrigation Status in IWMP-X, Banda

Sr. No.	Name & Micro Watershed with code	Name of Village	Gross Cultivated Area				Net Cultivated Area	Gross Irrigated Area				Net Irrigated Area	Rainfed Area
			Kharif	Rabi	Zaid	Total		Kharif	Rabi	Zaid	Total		
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	351.18	635.13	-	986.31	996.20	42.36	102.09	-	144.45	144.45	851.75
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama	405.28	670.20	-	1075.48	1021.31	25.36	122.73	-	148.09	148.09	873.22
3	Atarahat (2ClA7c2b)	Niwaich, Khaptha Kalan, Atarahat, Paparenda	311.26	510.60	-	821.86	800.56	35.36	80.72	-	116.08	116.08	684.48
4	Gajani (2ClA7c1a)	Bichhawahi, Atarahat, Kumhauli, Gajani, Amaraiya, Pipari, Parsunda, Barethi Askran, Khoharahi	414.12	688.67	-	1102.79	1072.17	55.36	100.10	-	155.46	155.46	916.70
5	Bachheura (2ClA7c2a)	Atarahat, Paparend	302.09	452.09	-	754.18	725.44	20.36	84.83	-	105.19	105.19	620.25

		a, Bachheura, Pipari, Parsaunda, Barethi Askaran											
6	Karahiya (2ClA7c2e)	Khaptha Kalan , Paparenda, Luktara, Lama, Karahiya	416.22	689.29	-	1105.51	1054.92	35.26	117.70	-	152.96	152.96	901.95
	Total		**2200.15**	**3645.98**		**5846.13**	**5670.60**	**214.06**	**608.18**		**822.24**	**822.24**	**4848.37**

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

Table 3.18: Source wise Area Irrigated in IWMP-X, Banda (area in ha)

Sr. No.	**Name &Micro watershed with code**	**Name of Village**	**Canal Area**	**State Tube wells**		**Tanks**		**Open well**		**Bore wells**		**Lift irrigation**		**Others (Specify)**		**Total Irrigated Area**
				No.	**Area**	**No.**	**Area**	**No.**	**Area**	**No.**	**Area**	**No.**	**Area**	**No.**	**Area**	
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	57.78	-	0	12	26.00	15	31.78	3	11.56	-	17.33	-	-	144.45
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama	0	-	0	16	29.62	35	71.08	4	11.85	-	35.54	-	-	148.09
3	Atarahat (2ClA7c2b)	Niwaich, Khaptha	0	-	0	12	23.22	25	55.72	3	9.29	-	27.86	-	-	116.08

		Kalan, Atarahat, Paparenda														
4	Gajani (2ClA7c1a)	Bichhawahi, Atarahat, Kumhauli, Gajani, Amaraiya, Pipari, Parsunda, Barethi Askran, Khoharahi	0	-	0	15	31.09	39	74.62	4	12.44	-	37.31	-	-	155.46
5	Bachheura (2ClA7c2a)	Atarahat, Paparenda, Bachheura, Pipari, Parsaunda, Barethi Askaran	0	-	0	10	21.04	26	50.49	2	8.42	-	25.25	-	-	105.19
6	Karahiya (2ClA7c2e)	Khaptha Kalan , Paparenda, Luktara, Lama, Karahiya	0	-	0	18	30.59	38	73.42	4	12.24	-	36.71	-	-	152.96
	Total		**57.78**	**-**	**0**	**83**	**161.56**	**178**	**357.12**	**20**	**65.78**	**0**	**180.00**	**-**	**-**	**822.24**

(Source: Participatory rural appraisal by PIA, (Soil Conservation Division, Banda-I, Banda, U.P.)

CHAPTER – 4

INSTITUTIONAL BUILDING AND PROJECT MANAGEMENT

4.1 Project Implementing Agency

The Project Implementing Agency (PIA) is Soil Conservation Officer, Department of Agriculture, IWMP-X, Banda-I, Banda, Uttar Pradesh. The PIA was given responsibility to develop the micro-watershed by Watershed Cell cum Data Centre (WCDC) and State Level Nodal Agency (SLNA) considering its vast experiences in handling land and water management issues in the region. The PIA has well experienced trained and sufficient staff to handle the watershed management programme efficiently. Most of the staff of PIA has exposure of several watershed projects. In addition the PIA has access for technical backstopping from the ICAR viz. IGFRI and NRCAF at Jhansi and KVK located at Banda. Details of PIA are presented in subsequent section.

Table 4.1: Details of Project Implementing Agency (PIA), IWMP-X, Banda

Sr. No.	Particulars of PIA	
(i)	Date of selection of PIA	
(ii)	Type of organization	U.P. Government
(iii)	Name of organization	Soil Conservation Division, Deptt. of Agriculture
(iv)	Principal Implementing Agency & Address	Soil Conservation Officer, Banda-I
(v)	Telephone	
(vi)	Fax	
(vii)	E-mail	

Table 4.2: Details of Staff at PIA, IWMP-X

Sr. No.	Designation	Name	M/F	Qualification	Field of Experience & Period	Remarks
1	B.S.A.	Shri. S.C. Ahirwar	M	Civil Eng.	All the staff are experienced and wellworsed with watershed management	
2	S.T.A	Shri.Madan Mohan Tiwari	M	Civil Eng.		
3	J.E.	Shri. M.P.Singh	M	Civil Eng.		
4	S.T.A	Shri.Om Veer Singh	M	Ag. Diploma		
5	S.T.A	Shri Balveer singh	M	B.Sc. Ag.		
6	S.T.A	Shri Raj Veer Singh	M	Ag. Diploma		
7	S.T.A	Shri. Mahak Singh	M	Ag. Diploma		
8	S.T.A	Shri. Ram Sanehi Singh	M	B.Sc.. Ag.		
9	T.A	Shri. Ram Singh	M	B.Sc.. Ag.		

10	T.A	Shri. Nareshpal Singh	M	Inter collage (Ag. Diploma)		
11	T.A	Shri. Phulena Yadav	M	B.Sc.. Ag.		
12	T.A	Shri. Chhotelal	M	Ag. Diploma		
13	T.A	Shri. S.N. Katiya	M	Ag. Diploma		
14	T.A	Shri. Jawaharlal Gupta	M	B.Sc.. Ag.		
15	T.A	Shri. Jageshwar Gupta	M	B.Sc.. Ag.		
16	T.A	Shri. Bhisham Tiwari	M	Ag. Diploma		
17	T.A	Shri. Shant Sharn Tiwari	M	B.Sc.. Ag.		
18	T.A	Shri. Mahendra Yadav	M	M.Sc. Ag		

Table 4.3: Details of Watershed Development Team (WDT) in the project area

Project- IWMP-X **PIA- BSA, Banda-I** **District-Banda**

Sr. No.	Name of WDT member	M/F	Age	Qualification / Experience	Description of professional training	Role/ Function	Date of appointment of WDT member
1.	Shri Om Veer Singh	M	57	Ag. Diploma	All the members are having work experience of watershed management.	WDT members will be accountable for the activities mentioned in Common Guidelines for watershed Development Projects 2008	18.9.11
2.	Shri R.S. Singh	M	56	B.Sc. Ag.			
3.	Shri. Ram singh	M	55	B.Sc. Ag.			

Table 4.4: Details of Watershed Committee (WC)
Jal Sanrakshan Samiti- Khaptiha Kala, **Gram Panchayat: Khaptiha Kala**
Name of Project:- IWMP X **District- Banda**

Sl. No.	Name of Gram Sabha/ GP	Date of Constitution/ Registration as a Society (dd/mm/ yyyy)	Designation	M/ F	SC	ST	OBC	Gen	SF	MF	LF	Land-less	UG	SHG	GP	Educa-tional qualification	Function(s) assigned
1	Khaptiha Kala	10.10.11	President	M	-	-	Y	-	-	-	-	-	-	-	Y	5^{TH}	WC will act as per Common Guidelines for watershed Development Projects 2008
			Secretary	M	-	-	-	Y	-	-	-	-	-	-	-	10^{TH}	
			Team leader	M	Y	-	-	-	-	Y	-	-	Y	-	-	Diploma Ag	
			Member	M	-	-	Y	-	Y	-	-	-	-	-	-	8^{TH}	
			Member	M	-	-	Y	-	-	-	-	-	-	-	-	8^{TH}	
			Member	M	Y	-	-	-	-	-	Y	-	-	Y	-	5^{TH}	
			Member	F	-	-	Y	-	Y	-	-	-	Y	-	-	5^{TH}	
			Member	M	-	-	Y	-	-	-	-	-	Y	-	Y	5^{TH}	
			Member	M	Y	-	-	-	-	-	-	Y	-	Y	-	8^{TH}	
			Member	M	-	-	-	Y	-	-	-	-	Y	-	-	8^{TH}	
			Member	M	-	-	Y	-	-	-	-	-	-	-	-	8^{TH}	

Male-M, Female-F, Schedule caste- SC, Schedule tribe- ST, Other backward clan- OBC, General- Gen, Small farmer- SF, Medium farmer-MF, Large farmer- LF, User Group- UG, Self help Group-SHG, Gram Panchayat Member- GP

Jal Sanrakshan Samiti- Paprenada, District- Banda **Gram Panchayat: Paprenada** **Name of Project:- IWMP X**

Sl. No.	Name of Gram Sabha / GP	Date of Constitution/ Registration as a Society (dd/mm/ yyyy)	Designation	M/ F	SC	ST	OBC	Gen	SF	MF	LF	Land-less	UG	SHG	GP	Educa-tional qualification	Function (s) assigned
2	Paprenada	13.10.11	President	M	-	-	Y	-	-	-	Y	-	-	-	-	5^{TH}	WC will act as per Common Guidelines for watershed Development Projects 2008
			Secretary	M	-	-	-	Y	Y	-	-	-	-	-	-	B.A	
			Team Leader	M	Y	-	-	-	Y	-	-	-	-	-	-	B.Sc AG	
			Member	M	-	-	Y	-	Y	-	-	-	Y	-	-	8^{TH}	
			Member	M	-	-	Y	-	-	-	-	-	-	-	-	10^{TH}	
			Member	M	-	-	-	-	-	-	Y	-	-	-	-	8^{TH}	
			Member	F	-	-	-	Y	Y	Y	-	-	-	Y	-	8^{TH}	
			Member	M	-	-	Y		Y	-	-	-	-	Y	-	8^{TH}	
			Member	M	Y	-	-	-	-	Y	-	Y	-	-	-	5^{TH}	
			Member	M	-	-	Y	-	Y	-	-	-	-	-	-	5^{TH}	
			Member	M	-	-	-	Y	-	-	-	-	Y	-	Y	5^{TH}	

Jal Sanrakshan Samiti- Bichwahi, District- Banda **Gram Panchayat: Bichwahi** **Name of Project:- IWMP X**

Sl. No.	Name of Gram Sabha/ GP	Date of Constitution/ Registration as a Society (dd/mm/ yyyy)	Designation	SC	ST	OBC	Gen	SF	MF	LF	Land-less	UG	SHG	GP	SC	Educa-tional qualification	Function (s) assigned
3	Bichwahi	11.10.11	President	-	-	-	Y	-	Y	-	-	-	-	-	-	5^{TH}	WC will act as per Common Guidelines for watershed Development Projects 2008
			Secretary	-	-	Y		-	Y	-	-	Y	-	-	-	B.A	
			Team leader	-	-	-	Y	-	-	-	-	-	-	-	-	B.Sc AG	
			Member	-	-	-	Y	-	Y	-	-	Y	-	-	-	8^{TH}	
			Member	-	-	Y	-	-	Y	-	-	-	-	-	-	10^{TH}	
			Member	Y	-	-	-	-	-	-	Y	-	Y	-	Y	8^{TH}	
			Member	-	-	Y	-	-	Y	-	-	-	-	-	-	8^{TH}	
			Member	-	-	Y	-	-	-	-	Y	-	Y	-	-	8^{TH}	
			Member	Y	-	-	-	Y	-	-	-	Y	-	-	Y	5^{TH}	
			Member	-	-	Y	-	-	Y	-	-	-	-	-	-	5^{TH}	
			Member	-	-	Y	-	Y	-	-	-	Y	-	-	-	5^{TH}	

Jal Sanrakshan Samiti- Lama, District- Banda **Gram Panchayat: Lama** **Name of Project:- IWMP X**

Sl. No.	Name of Gram Sabha / GP	Date of Constitution/ Registration as a Society (dd/mm/ yyyy)	Designation	M/ F	SC	ST	OBC	Gen	SF	MF	LF	Land-less	UG	SHG	GP	Educa-tional qualification	Function (s) assigned
4	Lama	28.10.11	President	M	Y	-	-	-	-	Y	-	-	-	-	Y	8^{TH}	WC will act as per Common Guidelines for watershed Development Projects 2008
			Secretary	M	-	-	Y	-	-	Y	-	-	Y	-	-	10^{TH}	
			Team leader	M	-	-	Y	-	-	-	-	-	-	-	-	Diploma Ag	
			Member	M	-	-	Y	-	Y	-	-	-	Y	-	-	8^{TH}	
			Member	M	-	-	Y	-	-	-	Y	-	Y	-	-	8^{TH}	
			Member	F	-	-	-	-	-	-	-	Y	-	Y	-	8^{TH}	
			Member	M	Y	-	-	-	Y	-	-	-	-	-	-	5^{TH}	
			Member	M	-	-	Y	-	-	Y	-	-	Y	-	-	5^{TH}	
			Member	F	Y	-	-	-	-	-	-	Y	-	Y	-	8^{TH}	
			Member	M	-	-	-	Y	-	Y	-	-	-	-	-	8^{TH}	
			Member	M	-	-	-	Y	-	Y	-	-	-	-	-	8^{TH}	

Jal Sanrakshan Samiti- Nivaich, Gram Panchayat: Nivaich Name of Project:- IWMP X
District- Banda

Sl. No.	Name of Gram Sabha / GP	Date of Constitution/ Registration as a Society (dd/mm/ yyyy)	Designation	M/ F	SC	ST	OBC	Gen	SF	MF	LF	Land-less	UG	SHG	GP	Educa-tional qualification	Function (s) assigned
5	Nivaich	29.10.11	President	M	-	-	-	Y	-	Y	-	-	-	-	-	10^{TH}	WC will act as per Common Guidelines for watershed Development Projects 2008
			Secretary	M	-	-	Y		-	Y	-	-	Y	-	-	10^{TH}	
			Team leader	M	-	-	-	Y	-	-	-	-	-	-	-	Diploma Ag	
			Member	M	-	-	-	Y	-	Y	-	-	Y	-	-	10^{TH}	
			Member	M	-	-	Y	-	-	Y	-	-	-	-	-	10^{TH}	
			Member	M	Y	-	-	-	-	-	-	Y	-	Y	-	B.A	
			Member	M	-	-	Y	-	-	Y	-	-	-	-	-	5^{TH}	
			Member	M	-	-	Y	-	-	-	-	Y	-	Y	-	5^{TH}	
			Member	F	Y	-	-	-	Y	-	-	-	Y	-	-	8^{TH}	
			Member	M	-	-	Y	-	-	Y	-	-	-	-	-	8^{TH}	
			Member	M	-	-	Y	-	Y	-	-	-	Y	-	-	8^{TH}	

Jal Sanrakshan Samiti- Atarahat, District- Banda **Gram Panchayat: Atarahat** **Name of Project:- IWMP X**

Sl. No.	Name of Gram Sabha/ GP	Date of Constitution/ Registration as a Society (dd/mm/ yyyy)	Designation	M/ F	SC	ST	OBC	Gen	SF	MF	LF	Land-less	UG	SHG	GP	Educa-tional qualification	Function (s) assigned
6	Atarahat	28.10.11	President	M	-	-	-	Y	-	Y	-	-	Y	-	Y	12^{TH}	WC will act as per Common Guidelines for watershed Development Projects 2008
			Secretary	M	-	-	Y	-	-	Y	-	-	-	-	-	10^{TH}	
			Team leader	M	-	-	Y	-	-	-	-	-	-	-	-	Diploma Ag	
			Member	M	-	-	Y	-	-	Y	-	-	Y	-	-	8^{TH}	
			Member	M	-	-	Y	-	-	Y	-	-	-	-	-	8^{TH}	
			Member	M	Y	-	-	-	Y	-	-	-	Y	-	-	8^{TH}	
			Member	M	-	-	-	Y	-	-	Y	-	-	-	-	8^{TH}	
			Member	M	-	-	-	Y	Y	-	-	-	Y	-	-	8^{TH}	
			Member	F	-	-	Y	-	-	-	-	Y	-	Y	-	10^{TH}	
			Member	M	Y	-	-	-	-	-	-	Y	-	Y	-	5^{TH}	
			Member	M	-	-	Y	-	-	Y	-	-	Y	-	-	5^{TH}	

Jal Sanrakshan Samiti- Parsauda, District- Banda **Gram Panchayat: Parsauda** **Name of Project:- IWMP X**

Sl. No.	Name of Gram Sabha / GP	Date of Constitution/ Registration as a Society (dd/mm/ yyyy)	Designation	M/ F	SC	ST	OBC	Gen	SF	MF	LF	Land-less	UG	SHG	GP	Educa-tional qualification	Function (s) assigned
7	Parsauda	29.10.11	President	M	-	-	-	Y	-	Y	-	-	-	-	-	10^{TH}	WC will act as per Common Guidelines for watershed Development Projects 2008
			Secretary	M	-	-	Y		-	Y	-	-	Y	-	-	10^{TH}	
			Team leader	M	-	-	-	Y	-	-	-	-	-	-	-	Diploma Ag	
			Member	M	-	-	-	Y	-	Y	-	-	Y	-	-	10^{TH}	
			Member	M	-	-	Y	-	-	Y	-	-	-	-	-	10^{TH}	
			Member	M	Y	-	-	-	-	-	-	Y	-	Y	-	B.A	
			Member	M	-	-	Y	-	-	Y	-	-	-	-	-	5^{TH}	
			Member	M	-	-	Y	-	-	-	-	Y	-	Y	-	5^{TH}	
			Member	F	Y	-	-	-	Y	-	-	-	Y	-	-	8^{TH}	
			Member	M	-	-	Y	-	-	Y	-	-	-	-	-	8^{TH}	
			Member	M	-	-	Y	-	Y	-	-	-	Y	-	-	8^{TH}	

Jal Sanrakshan Samiti- Gajni, **Gram Panchayat: Gajni** **Name of Project:- IWMP X**
District- Banda

Sl. No.	Name of Gram Sabha/ GP	Date of Constitution/ Registration as a Society (dd/mm/ yyyy)	Designation	SC	ST	OBC	Gen	SF	MF	LF	Land-less	UG	SHG	GP	SC	Educa-tional qualification	Function (s) assigned
8	Gajni	11.10.11	President	-	-	-	Y	-	Y	-	-	-	-	-	-	5TH	WC will act as per Common Guidelines for watershed Development Projects 2008
			Secretary	-	-	Y		-	Y	-	-	Y	-	-	-	B.A	
			Team leader	-	-	-	Y	-	-	-	-	-	-	-	-	B.Sc AG	
			Member	-	-	-	Y	-	Y	-	-	Y	-	-	-	8TH	
			Member	-	-	Y	-	-	Y	-	-	-	-	-	-	10TH	
			Member	Y	-	-	-	-	-	-	Y	-	Y	-	Y	8TH	
			Member	-	-	Y	-	-	Y	-	-	-	-	-	-	8TH	
			Member	-	-	Y	-	-	-	-	Y	-	Y	-	-	8TH	
			Member	Y	-	-	-	Y	-	-	-	Y	-	-	Y	5TH	
			Member	-	-	Y	-	-	Y	-	-	-	-	-	-	5TH	
			Member	-	-	Y	-	Y	-	-	-	Y	-	-	-	5TH	

Table 4.5: Village wise details of Self Help Groups (SHGs) in the project area IWMP- X

Project- IWMP X **District – Banda**

Sr. No.	Name of MWS	Names of villages	Total no. of Constituted/registered SHGs				No. of members				No. of SC/ST in each category			No. of BPL in each category			Date of formation of SHGs
			With only Men	With only Women	With both	Total	Categories	M	F	Total	M	F	Total	M	F	Total	
1	Khaptha Kalan (2ClB5a2f)	Niwaich, Khaptha Kalan	3	1	3	7	(i) Landless	7	3	10	3	0	3	7	3	10	These SHGs were formed during the month of February to April. Bye-laws of the SHGs were prepared and kept in the project file. Process to open
							(ii) SF	16	9	25	4	2	6	16	9	25	
							(iii) MF	23	12	35	7	4	11	23	12	35	
							(iv) LF	-	-	-	-	-	-	-	-	-	
							Total	**46**	**24**	**70**	**14**	**6**	**20**	**46**	**24**	**70**	
2	Paparenda (2ClA7c2c)	Niwaich, Khaptha kalan, Paparenda, Lama	4	2	2	8	(i) Landless	9	5	14	3	2	5	9	5	14	
							(ii) SF	17	11	28	6	3	9	17	11	28	
							(iii) MF	24	14	38	10	6	16	24	14	38	
							(iv) LF	-	-	-	-	-	-	-	-	-	
							Total	**50**	**30**	**80**	**19**	**11**	**30**	**50**	**30**	**80**	
3	Atarahat (2ClA7c2b)	Niwaich, Khaptha Kalan, Atarahat, Paparenda	3	1	1	5	(i) Landless	5	3	8	0	0	0	5	3	8	
							(ii) SF	12	6	18	3	0	3	12	6	18	
							(iii) MF	15	9	24	5	2	7	15	9	24	
							(iv) LF	-	-	-	-	-	-	-	-	-	

							Total	**32**	**18**	**50**	**8**	**2**	**10**	**32**	**18**	**50**	the accounts in Gramin bank (service bank) has been iniated
4	Gajani (2ClA7c1 a)	Bichhawahi, Atarahat, Kumhauli, Gajani, Amaraiya, Pipari, Parsunda, Barethi Askran, Khoharahi	3	1	1	5	(i) Landless	6	2	8	0	0	0	6	2	8	
							(ii) SF	13	5	18	3	0	3	13	5	18	
							(iii) MF	14	10	24	6	1	7	14	10	24	
							(iv) LF	-	-	-	-	-	-	-	-	-	
								33	**17**	**50**	**9**	**1**	**10**	**33**	**17**	**50**	
5	Bachheura (2ClA7c2 a)	Atarahat, Paparenda, Bachheura, Pipari, Parsaunda, Barethi Askaran	2	1	1	4	(i) Landless	4	1	5	0	0	0	4	1	5	
							(ii) SF	10	3	13	3	1	4	10	3	13	
							(iii) MF	16	6	22	4	2	6	16	6	22	
							(iv) LF	-	-	-	-	-	-	-	-	-	
							Total	**30**	**10**	**40**	**7**	**3**	**10**	**30**	**10**	**40**	
6	Karahiya (2ClA7c2 e)	Khaptha Kalan , Paparenda , Luktara, Lama, Karahiya	5	2	2	9	(i) Landless	16	3	19	3	1	4	16	3	19	
							(ii) SF	21	8	29	7	2	9	21	8	29	
							(iii) MF	29	13	42	12	5	17	29	13	42	
							(iv) LF	-	-	-	-	-	-	-	-	-	
							Total	**66**	**24**	**90**	**22**	**8**	**30**	**66**	**24**	**90**	
	Grand Total		**20**	**8**	**10**	**38**		**257**	**123**	**380**	**79**	**31**	**110**	**257**	**123**	**380**	

(M – Male, F – Female)

There are 16 villages in the project area and village-wise Self Help Groups (SHGs) constituted is given in Table 4.5. A total 38 SHGs were already constituted in the project villages, of them 20 men SHGs, 8 women SHGs and 10 mixed SHGs, respectively. Total 208 SHGs have to be constituted to ensure the livelihood of marginalized population in the project. Formation of remaining 170 SHGs is in progress. Livelihood Action Plan is given in Annexure-I.

4.2: Details of Formation of User Groups (UGs)

User Groups were formed on the basis of beneficiaries of different natural resource conservation activities to be constructed in the watershed. The location of the activities/group mentioned in Table 4.6 can be seen on the proposed plan available in the map section.

Table 4.6: Activity wise formation of user groups

Name of Work	Benefited area (ha)	Field No.	Name of Adhyaksh	Name of Sachiv/ Treasurer	Activity Proposed	Location of the activity	Water storage in cum	Area Proposed for irrigation (ha)	user Charges (per ha)
Bachheura (2C1A7c2a)									
CD1	14.99	145	Ramdas	Anil Kumar	Crop Production	145			
CD2	16.79	168	Indrpal	Kamata Prasad	Crop Production	168			
CD2	9.20	161	Nandu	Ramesh	Crop Production	161			
CD3	9.20	168	Binda	Muluva	Crop Production	168			
CD5	9.63	2	Avdesh Kumar	Badri		2			
Khapihan Kalan (2C1A7c2c)									
CD1	26.11	751, 745, 741, 732	Anil Kumar	Ramdas	Crop Production	751			
CD2	28.34	2153, 2162, 2169	Kamata Prasad	Indrpal	Crop Production	2153			
CD3	29.32	2363, 2345, 41, 2331, 2330	Ramesh	Nandu	Crop Production	2363			
WHB	54.11	2404, 2409, 2421, 22	Muluva	Binda	Crop Production	2404			

Atarhat (2C1A7c2b)									
CD1	10.79	2894	Bacchu	Gajva	Crop Production	2894			
CD2	9.98	2914	Ramsakhi	Kamta	Crop Production	2914			
CD3	8.25	3022	Ram Singh	Ramasre	Crop Production	3022			
CD4	5.28	3017	Ram Bihari	Surja	Crop Production	3017			
CD5	10.79	2996	Deepak	Rammilan	Crop Production	2996			
CD6	12.12	3006	Amar Singh	Ram Snehi	Crop Production	3006			
CD7	10.79	3489	Parsuva	Padma	Crop Production	3489			
CD8	12.12	3499	Ram Kumar	Dinesh	Crop Production	3499			
CD9	8.25	2258	Ramsajeevan	Rmanarayan	Crop Production	2258			
CD10	8.25	2245	Subedar	Shiv Prasad	Crop Production	2245			
CD11	12.12	2234	Shiv Prasad	Ramnarayan	Crop Production	2234			
CD12	11.17	3021	Ram	Shiv Charan	Crop Production	3021			
CD13	10.79	3046	Nathuva	Amarjeet	Crop Production	3046			
WHB1	1.56	3645	Shivram	Rajaram	Crop Production	3645			
WHB2	1.75	3124	Bacchu	Ramakant	Crop Production	3124			
WHB3	1.75	3137	Krishn	Dayashnkar	Crop Production	3137			
WHB4	2.07	3134	Ramasre	Muluva	Crop Production	3134			
Karahiya (2C1A7c2e)									
WHB1	61.5	5601, 5697, 5588	Ramsewak	Arvind Kumar	Crop Production	5697			
WHB2	61.48	1219, 1220, 1261, 1262, 1255, 1256	Brajbihari	Rohit	Crop Production	1220			
CD1	13.88	1529, 1530, 1539	Mahraj	Ramvahori	Crop Production	1530			
CD2	9.43	1152, 1169, 1172	Jayram	Kedarnath	Crop	1169			

					Production				
CD3	11.88	1513, 1550, 1512	Vedprakash	Arun kumar	Crop Production	1513			
CD4	30.99	1475, 1476	Vedprakash	Vidasagar	Crop Production	1475			
Gajani (2C1A7c1a)									
CD1			Jagdish	Parsuva	Crop Production				
CD2			Basnta	Ram Kumar	Crop Production				
CD3		381	Shyamlal	Ramsajeevan	Crop Production	381			
CD4		392	Devendra	Subedar	Crop Production	392			
CD5		395	Devendra	Shiv Prasad	Crop Production	395			
WHB1		237	Devicharan	Ram	Crop Production	237			
Khaptiha Kalan (2C1B5a2f)									
CD1	13.3	2562	Bacchu	Gajva	Crop Production	2562			
CD2	28.42	2558	Ramsakhi	Kamta	Crop Production	2558			
CD3	6.01	2780	Ram Singh	Ramasre	Crop Production	2780			
CD4	13.56	2805, 2545, 2788	Ram Bihari	Surja	Crop Production	2805			
CD5	14.9	2482	Deepak	Rammilan	Crop Production	2482			
CD6	20.99	2446, 2441, 2439	Amar Singh	Ram Snehi	Crop Production	2446			
CD7	46.6		Parsuva	Padma	Crop Production				
CD8	15.31		Ram Kumar	Dinesh	Crop Production				

CD9	13.54	2180, 2384	Ramsajeevan	Rmanarayan	Crop Production	2180			
CD10	34.48	2178, 2220	Subedar	Shiv Prasad	Crop Production	2178			
CD11	22.3	1996, 2131	Shiv Prasad	Ramnarayan	Crop Production	1996			
CD12	5.94	2132	Ram	Shiv Charan	Crop Production	2132			
CD13	14.07	2018, 2049	Nathuva	Amarjeet	Crop Production	2018			
CD14	24.08	2118, 2121, 2123	Shivram	Rajaram	Crop Production	2118			
CD15	19	2068, 2153, 2154	Bacchu	Ramakant	Crop Production	2068			
CD16	20.86	2036, 1248	Krishn	Dayashnkar	Crop Production	2036			
CD17	35.33	1242	Ramasre	Muluva	Crop Production	1242			
CD18	13.99	2907, 2880, 2873	Natthu	Rajaram	Crop Production	2907			
CD19	8.49	2890, 2891, 2930	Sitaram	Rajaram	Crop Production	2890			
CD20	28.28	2611	Gaurishankar	Ramakant	Crop Production	2611			
CD21	10.26	2606, 2607	Mariya	Amarjeet	Crop Production	2606			
CD22	43.84	2578	Chandrpal	Binda Prasad	Crop Production	2578			
CD23	14.74	2609, 2610	Nandu	Badri	Crop Production	2609			
CD24	6.68	2622, 2696	Binda	Anil Kumar	Crop Production	2622			
WHB2	78.08	1201, 1204, 1198, 2066, 2064	Raghuveer	Kamata Prasad	Crop Production	1201			

4.3 Convergence in IWMP-X, Banda

There is no planning of convergence.

CHAPTER – 5

MANAGEMENT/ACTION PLAN

The details of Preparatory Phase, Works Phase and Convergence planning are described in subsequent section

5.1 Entry Point Activities (EPA)

Entry point activities were executed with the consent of stake holders and it helped in winning the confidence of the villagers for moving ahead with other programmes of watershed. In total 7 EPA activities were executed in the project area which costed Rs. 2320800.00. Photographs of entry point activities done in the project are given below.

Name of PIA	Name of Project	Year	Name of Block	Name of project/ Name of village	Code of project	E.P.A cost in lakh	Name of Work	Cost in lakh
Soil Conservation Division-Banda-I	IWMP-X	2011-12	Tindawari	Khaptha Kalan	2ClB5a2f	3.47	Puliya Cons. Naali, Kharanja Road Repairment	3.47
				Paparenda	2ClA7c2c	4.25		4.25
				Atarahat	2ClA7c2b	3.67		3.67
				Gajani	2ClA7c1a	4.45		4.45
				Bachheura	2ClA7c2a	3.02		3.02
				Karahiya	2ClA7c2e	4.35		4.35
Total						**23.21**		**23.21**

5.2 Works Phase

Following are the major problems of the watersheds

- Water scarcity both for drinking as well as irrigation
- Excess runoff and soil loss
- Low water holding capacity of the soil
- Low productivity of crops
- Low fertility of soil
- Low cropping intensity
- Lack of technical knowledge
- *Anna Pratha* (let loose system of cattle)
- Poor vegetative cover
- Poor/low productive breeds of miltch animals

- Lack of feed & fodder availability
- Non availability of wood/fuel wood
- Lack of proper market facilities
- Low income of the households
- Lack of employment opportunity

Estimation of Runoff from the Watershed

Runoff from the watershed is estimated by Curve Number method of the Soil Conservation Service of the USDA using 15 years data (1996-2010). It is estimated that runoff potential of the project area is 300 mm, equivalent to 30-45 per cent of average annual rainfall. Expected runoff and soil loss from the project area are depicted Table 5.1.

Table 5.1: Runoff and soil erosion in the project area (IWMP-X, Banda)

Sr. No.	Name of Micro Watershed	Cause	Type of erosion	Area affected (ha)	Run off (mm/ year)	Average Soil Loss (Tonnes/ ha/ year)
1	Khaptha Kalan (2ClB5a2f)	Water erosion				
		a	Sheet	586.00	300	7-10
		b	Rill	410.20		
		c	Gully	175.80		
		Total		**545.881172.00**		
2	Paparenda (2ClA7c2c)	Water erosion				
		a	Sheet	600.77	300	7-10
		b	Rill	420.54		
		c	Gully	180.23		
		Total		**1201.55**		
3	Atarahat (2ClA7c2b)	Water erosion				
		a	Sheet	421.35	300	7-10
		b	Rill	294.94		
		c	Gully	126.40		
		Total		**842.70**		
4	Gajani	Water erosion				

	(2ClA7c1a)	a	Sheet	630.69	300	7-10
		b	Rill	441.48		
		c	Gully	189.21		
		Total		**1261.38**		
5	Bachheura (2ClA7c2a)	Water erosion				
		a	Sheet	426.73	300	7-10
		b	Rill	298.71		
		c	Gully	128.02		
		Total		**853.46**		
6	Karahiya (2ClA7c2e)	Water erosion				
		a	Sheet	620.54	300	7-10
		b	Rill	434.38		
		c	Gully	186.16		
		Total		**1241.08**		
	Total			**6572.16**		

Watershed Development Activities Proposed

The details of the activities of watershed works (natural resource conservation) are marked on individual field in the micro-watershed wise proposed plan (Map Section). Individual beneficiary wise estimate has been prepared for each micro-watershed and gram panchayat. Information of individual beneficiaries is kept in respective project file available with PIA. (Table 5.2 and 5.3). Similar exercise was also done for participatory crop trials. Location of these trials is marked on proposed plan of participatory crop demonstration (available in map section).

Table 5.2: Micro-watershed wise details of Watershed Development Activities proposed in IWMP-X, Banda

Sr. No.	Particular of Measures/Activities	Unit	Khaptha Kalan (2ClB5a2f)		Paparenda (2ClA7c2c)		Atarahat (2ClA7c2b)		Gajani (2ClA7c1a)	
		No., Length / ha, Volume	Qanty.	Cost (Rs. In lakh)	Qanty.	Cost (Rs. In lakh)	Qanty.	Cost (Rs. In lakh)	Qanty.	Cost (Rs. In lakh)

1	2	3	4	5	6	7	8	9		
I	**Soil & Water Conservation Measures**									
	A- Moisture Conservation Measures									
	1. Peripheral Bund (with Sodding)	cum.	0	0.00	13900	7.64	1149	0.81	9875	7.87
	2.Submergence Bundhi (with Sodding)	cum.	46681	20.12	72499	42.65	35437	19.61	59443	39.82
	B- <u>Water Resource Development</u>									
	1. Check Dam / Drop Spill Way	No.	49625	23.15	5153	5.55	18676	18.29	7697	11.68
	1a- Water storing capacity	cum.	9600	-	1600	-	5200	-	2250	-
	1b. Area proposed for irrigation	ha	16	-	2.7	-	9	-	4	-
	2. Water Harvesting Bund with surplushing structure	No.	8492	5.25	2604	3.64	10150	12.70	3770	2.93
	2a-Water storing capacity	cum.	1400		700		2800		800	
	2b. Area proposed for irrigation by WHB	ha	2.33		1.2		4.67		1.33	
	Sub Total			**48.52**		**59.47**		**51.41**		**62.29**
II	**<u>Livelihood for landless People</u>**									
	1. Goatary	No. of SHGs/ No. of beneficiaries	4/40	1.00	5/50	1.25	4/40	1.00	5/50	1.25
	2. Back Yard Poultry	-do-	4/40	1.00	5/50	1.25	4/40	1.00	5/50	1.25
	3. Poultry (Broiler)	-do-	3/30	0.75	4/40	1.00	4/40	1.00	4/40	1.00
	4. Black Smithy	-do-	3/30	0.75	4/40	1.00	4/40	1.00	4/40	1.00
	5. Rope Making (Linseed)	-do-	3/30	0.75	4/40	1.00	4/40	1.00	4/40	1.00
	6. Tailoring	-do-	3/30	0.75	4/40	1.00	4/40	1.00	4/40	1.00
	7. Vermi composting	-do-	3/30	0.75	4/40	1.00	3/30	0.75	4/40	1.00
	8. Fruit Processing	-do-	4/40	1.00	4/40	1.00	3/30	0.75	5/50	1.25
	9. Seed Bank	-do-	4/40	1.05	4/40	1.06	3/30	0.76	5/50	1.26
	Sub Total		31/310	7.80	38/380	9.56	33/330	8.26	40/400	10.01
III	**<u>Agriculture Production System</u>**									
	(1)SMC Area									

	A- Crop Demonstrations- (Crop Wise)									
	1. Lentil	No. of farmers / Area (ha)	10/4.0	0.47	14/5.6	0.66	12/4.8	0.57	14/5.6	0.66
	2. Chickpea	-do-	10/4.0	0.54	14/5.6	0.76	12/4.8	0.65	14/5.6	0.76
	3. Field Pea	-do-	10/4.0	0.57	14/5.6	0.80	12/4.8	0.69	14/5.6	0.80
	4. Til	-do-	10/4.0	0.17	14/5.6	0.24	12/4.8	0.20	14/5.6	0.24
	5. Urd	-do-	10/4.0	0.35	14/5.6	0.50	12/4.8	0.43	14/5.6	0.50
	6. Moong	-do-	10/4.0	0.36	14/5.6	0.51	12/4.8	0.44	14/5.6	0.51
	7. Arhar	-do-	10/4.0	0.30	14/5.6	0.41	12/4.8	0.35	14/5.6	0.41
	8. Wheat	-do-	10/4.0	0.58	14/5.6	0.81	12/4.8	0.69	14/5.6	0.81
	(2) Water Resource Area:									
	B- Production of seeds									
	1. Lentil	No. of farmers / Area (ha)	11/4.4	0.52	13/5.2	0.62	11/4.4	0.52	14/5.6	0.66
	2. Chickpea	-do-	11/4.4	0.60	13/5.2	0.71	11/4.4	0.60	14/5.6	0.76
	3. Field Pea	-do-	11/4.4	0.63	13/5.2	0.75	11/4.4	0.63	14/5.6	0.80
	4. Til	-do-	11/4.4	0.19	13/5.2	0.22	11/4.4	0.19	14/5.6	0.24
	5. Urd	-do-	12/4.8	0.43	13/5.2	0.46	11/4.4	0.39	14/5.6	0.50
	6. Moong	-do-	12/4.8	0.44	13/5.2	0.47	11/4.4	0.40	14/5.6	0.51
	7. Arhar	-do-	12/4.8	0.35	13/5.2	0.38	11/4.4	0.32	14/5.6	0.41
	8. Wheat	-do-	12/4.8	0.69	13/5.2	0.75	11/4.4	0.64	14/5.6	0.81
	<u>Agro forestry</u>:-									
	1- Aonla	Area in ha	2	0.36	3	0.54	2	0.36	3	0.54
	2. Guava	Area in ha	2	0.36	2	0.36	2	0.36	3	0.54
	<u>Live Stock Management</u>									
	A. fodder production	Farmers/ No. of Units	37	0.22	25	0.15	38	0.23	25	0.15
	B. Vaccination/Medication	No. of Animals	39	0.02	25	0.02	38	0.02	22	0.01
	C. Artificial Insemination	No. of Animals	39	0.02	25	0.01	38	0.02	23	0.01
	D. Natural Service.	He Buffalo	2	0.48	2	0.48	2	0.48	2	0.48
	Total for Ag. Production System			**8.66**		**10.62**		**9.18**		**11.12**
Total				**64.98**		**79.65**		**68.85**		**83.43**

Cont.

Sr. No.	Particular of Measures/Activities	Unit	Bachheura (2ClA7c2a)		Karahiya (2ClA7c2e)		IWMP-X	
		No., Length / ha, Volume	Qanty.	Cost (Rs. In lakh)	Qanty.	Cost (Rs. In lakh)	Qanty.	Cost (Rs. In lakh)
1	2	3	4	5	6	7	8	9
I	**Soil & Water Conservation Measures**							
	A- Moisture Conservation Measures							
	1. Peripheral Bund (with Sodding)	cum.			15860	6.21	40784	22.52
	3. Marginal Bund (with Sodding)	cum.					0	0.00
	4.Submergence Bundhi (with Sodding)	cum.	65099	35.82768	85449	41.9732	364608	200.00
	B- <u>Water Resource Development</u>							
	3. Check Dam / Drop Spill Way	No.	8130	6.50832	6540	4.44	95821	69.61
	3a- Water storing capacity	cum.	3000	-	2360	-	24010	
	3b. Area proposed for irrigation	ha	5	-	4	-	40	
	4. Water Harvesting Bund with surplushing structure	No.	0	0	4556	8.26	29572	32.78
	4a-Water storing capacity	cum.	0		1800		7500	0.00
	4b. Area proposed for irrigation by WHB	ha	0.00		3.00		13	0.00
	Sub Total			**42.34**		**60.88**		**324.91**
II	**<u>Livelihood for landless People</u>**							
	1. Goatary	No. of SHGs/ No. of beneficiaries	3/30	0.75	5/50	1.25	26/260	6.50
	2. Back Yard Poultry	-do-	3/30	0.75	5/50	1.25	26/260	6.50
	3. Poultry (Broiler)	-do-	3/30	0.75	4/40	1.00	22/220	5.50
	4. Black Smithy	-do-	3/30	0.75	4/40	1.00	22/220	5.50
	5. Rope Making (Linseed)	-do-	3/30	0.75	4/40	1.00	22/220	5.50

	6. Tailoring	-do-	3/30	0.75	4/40	1.00	22/220	5.50
	7. Vermi composting	-do-	3/30	0.75	4/40	1.00	21/210	5.25
	8. Fruit Processing	-do-	3/30	0.75	4/40	1.00	23/230	5.75
	9. Seed Bank	-do-	3/30	0.80	5/50	1.28	24/240	6.22
	Sub Total		27/270	6.80	39/390	9.78	**208/2080**	**52.22**
III	**Agriculture Production System**							
	(1)SMC Area							
	A- Crop Demonstrations- (Crop Wise)							
	1. Lentil	No. of farmers / Area (ha)	10/4	0.47	14/5.6	0.66	74/31.6	3.51
	2. Chickpea	-do-	10/4	0.54	14/5.6	0.76	74/31.6	4.03
	3. Field Pea	-do-	10/4	0.57	13/5.2	0.75	73/29.2	4.19
	4. Til	-do-	10/4	0.17	13/5.2	0.22	73/29.2	1.24
	5. Urd	-do-	10/4	0.35	13/5.2	0.46	73/29.2	2.59
	6. Moong	-do-	10/4	0.36	13/5.2	0.47	73/29.2	2.66
	7. Arhar	-do-	10/4	0.30	13/5.2	0.38	73/29.2	2.15
	8. Wheat	-do-	10/4	0.58	13/5.2	0.75	73/29.2	4.22
	(2) Water Resource Area:							
	B- Production of seeds							
	1. Lentil	No. of farmers / Area (ha)	10/4	0.47	14/5.6	0.66	73/29.2	3.46
	2. Chickpea	-do-	10/4	0.54	14/5.6	0.76	73/29.2	3.97
	3. Field Pea	-do-	10/4	0.57	14/5.6	0.80	73/29.2	4.19
	4. Til	-do-	10/4	0.17	14/5.6	0.24	73/29.2	1.24
	5. Urd	-do-	10/4	0.35	14/5.6	0.50	74/31.6	2.62
	6. Moong	-do-	10/4	0.36	14/5.6	0.51	74/31.6	2.70
	7. Arhar	-do-	10/4	0.30	14/5.6	0.41	74/31.6	2.18
	8. Wheat	-do-	9/3.6	0.52	14/5.6	0.81	73/29.2	4.22
	Agro forestry:-							

	Species							
	1- Aonla	Area in ha	2	0.36	3	0.54	15	2.70
	2. Guava	Area in ha	1	0.18	2	0.36	12	2.16
	Live Stock Management							
	A. fodder production	Farmers/ No. of Units	19	0.11	48	0.29	192	1.15
	B. Vaccination/Medication	No. of Animals	19	0.01	46	0.03	189	0.12
	C. Artificial Insemination	No. of Animals	19	0.01	46	0.02	190	0.08
	D. Natural Service.	He Buffalo	1	0.24	2	0.48	11	2.64
	Total for Ag. Production System			**7.56**		**10.87**		**58.02**
Total				**56.70**		**81.54**		**435.15**

Table 5.3: Gram Panchayat wise details of Watershed Development Activities proposed in IWMP-X, Banda

Sr. No.	Particular of Measures/Activities	Unit	Khaptha Kalan		Paparenda		Bichwahi		Lama		Nivaich	
		No., Length / ha, Volume	Qanty.	Cost (Rs. In lakh)	Qanty.	Cost (Rs. In lakh)	Qanty.	Cost (Rs. In lakh)	Qanty.	Cost (Rs. In lakh)	Qanty.	Cost (Rs. In lakh)
1	2	3	4	5	6	7	8	9				
I	**Soil & Water Conservation Measures**											
	A- Moisture Conservation Measures											
	1. Peripheral Bund (with Sodding)	cum.	9380	5.18	12003	6.63	590	0.33	2404	1.33	1097	0.61
			0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	2.Submergence Bundhi (with Sodding)	cum.	83856	46.00	107309	58.86	5279	2.90	21492	11.79	9803	5.38
	B- Water Resource Development											
	1. Check Dam / Drop Spill Way	No.	22038	16.01	28201	20.49	1387	1.01	5648	4.10	2576	1.87
	1a- Water storing capacity	cum.	5522	0.00	7066	0.00	348	0.00	1415	0.00	646	0.00
	1b. Area proposed for irrigation	ha	9	0.00	12	0.00	1	0.00	2	0.00	1	0.00

	2. Water Harvesting Bund with surplushing structure	No.	6801	7.54	8703	9.65	428	0.47	1743	1.93	795	0.88
	2a-Water storing capacity	cum.	1725	0.00	2207	0.00	109	0.00	442	0.00	202	0.00
	2b. Area proposed for irrigation by WHB	ha	3	0.00	4	0.00	0	0.00	1	0.00	0.3	0.00
	Sub Total			**74.73**		**95.63**		**4.70**		**19.15**		**8.74**
II	**Livelihood for landless People**											
	1. Goatary	No. of SHGs/ No. of beneficiaries	6/60	1.50	6/60	1.50	1/10	0.25	2/20	0.50	1/10	0.25
	2. Back Yard Poultry	-do-	6/60	1.50	7/70	1.75	0	0.00	2/20	0.50	1/10	0.25
	3. Poultry (Broiler)	-do-	5/50	1.25	7/70	1.75	0	0.00	1/10	0.25	1/10	0.25
	4. Black Smithy	-do-	5/50	1.25	8/80	2.00	0	0.00	1/10	0.25	0	0.00
	5. Rope Making (Linseed)	-do-	5/50	1.25	8/80	2.00	0	0.00	1/10	0.25	0	0.00
	6. Tailoring	-do-	5/50	1.25	8/80	2.00	0	0.00	1/10	0.25	0	0.00
	7. Vermi composting	-do-	5/50	1.25	6/60	1.50	0	0.00	1/10	0.25	1/10	0.25
	8. Fruit Processing	-do-	5/50	1.25	7/70	1.75	1/10	0.25	1/10	0.25	1/10	0.25
	9. Seed Bank	-do-	6/60	1.51	4/40	1.12	1/10	0.26	2/20	0.58	1/10	0.15
	Sub Total		48/480	12.01	61/610	15.37	3/30	0.76	12/120	3.08	6/60	1.40
III	**Agriculture Production System**											
	(1)SMC Area											
	A- Crop Demonstrations- (Crop Wise)											
	1. Lentil	No. of farmers / Area (ha)	16/6.4	0.76	19/7.6	0.90	2/0.8	0.09	4/1.6	0.19	3	0.14
	2. Chickpea	-do-	16/6.4	0.87	19/7.6	1.03	2/0.8	0.11	4/1.6	0.22	3	0.16
	3. Field Pea	-do-	18/7.2	1.03	19/7.6	1.09	1/0.4	0.06	4/1.6	0.23	2/0.8	0.11
	4. Til	-do-	18/7.2	0.30	19/7.6	0.32	1/0.4	0.02	4/1.6	0.07	2/0.8	0.03

	5. Urd	-do-	18/7.2	0.64	19/7.6	0.67	1/0.4	0.04	4/1.6	0.14	2/0.8	0.07
	6. Moong	-do-	18/7.2	0.66	19/7.6	0.69	1/0.4	0.04	4/1.6	0.15	2/0.8	0.07
	7. Arhar	-do-	18/7.2	0.53	19/7.6	0.56	1/0.4	0.03	4/1.6	0.12	2/0.8	0.06
	8. Wheat	-do-	18/7.2	1.04	19/7.6	1.10	1/0.4	0.06	4/1.6	0.23	2/0.8	0.12
	(2) Water Resource Area:											
	B- Production of seeds											
	1. Lentil	No. of farmers / Area (ha)	17/6.8	0.81	19/7.6	0.90	1/0.4	0.05	4/1.6	0.19	2/0.8	0.09
	2. Chickpea	-do-	17/6.8	0.93	19/7.6	1.03	1/0.4	0.05	4/1.6	0.22	2/0.8	0.11
	3. Field Pea	-do-	17/6.8	0.98	19/7.6	1.09	1/0.4	0.06	4/1.6	0.23	2/0.8	0.11
	4. Til	-do-	17/6.8	0.29	19/7.6	0.32	1/0.4	0.02	4/1.6	0.07	2/0.8	0.03
	5. Urd	-do-	17/6.8	0.60	20	0.71	1/0.4	0.04	4/1.6	0.14	2/0.8	0.07
	6. Moong	-do-	17/6.8	0.62	22/8.8	0.80	1/0.4	0.04	4/1.6	0.15	2/0.8	0.07
	7. Arhar	-do-	17/6.8	0.50	22/8.8	0.65	1/0.4	0.03	4/1.6	0.12	2/0.8	0.06
	8. Wheat	-do-	17/6.8	0.98	22/8.8	1.27	1/0.4	0.06	3/1.2	0.17	2/0.8	0.12
	Agro forestry:-											
	1- Aonla	Area in ha	2	0.36	9	1.62	0	0.00	1	0.18	0	0.00
	2. Guava	Area in ha	2	0.36	6	1.08	0	0.00	1	0.18	0	0.00
	Live Stock Management											
	A. fodder production	Farmers/ No. of Units	56	0.34	40	0.24	7	0.04	28	0.17	17	0.10
	B. Vaccination/Medication	No. of Animals	25	0.02	26	0.01	25	0.02	27	0.02	15	0.01
	C. Artificial Insemination	No. of Animals	25	0.01	23	0.01	25	0.01	27	0.01	15	0.01

	D. Natural Service.	He Buffalo	3	0.72	4	0.96	0	0.00	1	0.24	0	0.00
	Total for Ag. Production System			**13.34**		**17.08**		**0.84**		3.42		**1.56**
Total				**100.08**		**128.07**		**6.30**		**25.65**		**11.70**

Cont.

Sr. No.	Particular of Measures/Activities	Unit	Atarahat		Parsauda		Gajni		IWMP-X	
		No., Length / ha, Volume	Qanty.	Cost (Rs. In lakh)	Qanty.	Cost (Rs. In lakh)	Qanty.	Cost (Rs. In lakh)	Qanty.	Cost (Rs. In lakh)
1	2	3	4	5	6	7	8	9		
I	**Soil & Water Conservation Measures**									
	A- Moisture Conservation Measures									
	1. Peripheral Bund (with Sodding)	cum.	7001	3.87	4159	2.30	4150	2.29	40784	22.52
	3. Marginal Bund (with Sodding)	cum.	0	0.00	0	0.00	0	0.00	0	0.00
	4.Submergence Bundhi (with Sodding)	cum.	62590	34.33	37177	20.39	37102	20.35	364608	200.00
	B- <u>Water Resource Development</u>									
	3. Check Dam / Drop Spill Way	No.	16449	11.95	9770	7.10	9751	7.08	95821	69.61
	3a- Water storing capacity	cum.	4122	0.00	2448	0.00	2443	0.00	24010	
	3b. Area proposed for irrigation	ha	7	0.00	4	0.00	4	0.00	40	
	4. Water Harvesting Bund with surplushing structure	No.	5076	5.63	3015	3.34	3009	3.34	29572	32.78
	4a-Water storing capacity	cum.	1287	0.00	765	0.00	763	0.00	7500	0.00
	4b. Area proposed for irrigation by WHB	ha	2	0.00	1	0.00	1	0.00	13	0.00
	Sub Total			**55.78**		**33.13**		**33.06**		**324.91**
II	**<u>Livelihood for landless People</u>**									
	1. Goatary	No. of SHGs/ No. of beneficiaries	4/40	1.00	3/30	0.75	3/30	0.75	26/260	6.50
	2. Back Yard Poultry	-do-	4/40	1.00	3/30	0.75	3/30	0.75	26/260	6.50
	3. Poultry (Broiler)	-do-	4/40	1.00	2/20	0.50	2/20	0.50	22/220	5.50

	4. Black Smithy	-do-	4/40	1.00	2/20	0.50	2/20	0.50	22/220	5.50
	5. Rope Making (Linseed)	-do-	4/40	1.00	2/20	0.50	2/20	0.50	22/220	5.50
	6. Tailoring	-do-	4/40	1.00	2/20	0.50	2/20	0.50	22/220	5.50
	7. Vermi composting	-do-	4/40	1.00	2/20	0.50	2/20	0.50	21/210	5.25
	8. Fruit Processing	-do-	4/40	1.00	2/20	0.50	2/20	0.50	23/230	5.75
	9. Seed Bank	-do-	4/40	0.96	3/30	0.82	3/30	0.81	24/240	6.22
	Sub Total		36/360	8.96	21/210	5.32	21/210	5.31	**208/2080**	**52.22**
III	**Agriculture Production System**									
	(1)SMC Area									
	A- Crop Demonstrations- (Crop Wise)									
	1. Lentil	No. of farmers / Area (ha)	14/5.6	0.66	8/3.2	0.38	8/3.2	0.38	74/29.6	3.51
	2. Chickpea	-do-	14/5.6	0.76	8/3.2	0.44	8/3.2	0.44	74/29.6	4.03
	3. Field Pea	-do-	13/5.2	0.75	8/3.2	0.46	8/3.2	0.46	73/29.2	4.19
	4. Til	-do-	13/5.2	0.22	8/3.2	0.14	8/3.2	0.14	73/29.2	1.24
	5. Urd	-do-	13/5.2	0.46	8/3.2	0.28	8/3.2	0.28	73/29.2	2.59
	6. Moong	-do-	13/5.2	0.47	8/3.2	0.29	8/3.2	0.29	73/29.2	2.66
	7. Arhar	-do-	13/5.2	0.38	8/3.2	0.24	8/3.2	0.24	73/29.2	2.15
	8. Wheat	-do-	13/5.2	0.75	8/3.2	0.46	8/3.2	0.46	73/29.2	4.22
	(2) Water Resource Area:									
	B- Production of seeds									
	1. Lentil	No. of farmers / Area (ha)	14/5.6	0.66	8/3.2	0.38	8/3.2	0.38	73/29.2	3.46
	2. Chickpea	-do-	14/5.6	0.76	8/3.2	0.44	8/3.2	0.44	73/29.2	3.97
	3. Field Pea	-do-	14/5.6	0.80	8/3.2	0.46	8/3.2	0.46	73/29.2	4.19
	4. Til	-do-	14/5.6	0.24	8/3.2	0.14	8/3.2	0.14	73/29.2	1.24
	5. Urd	-do-	14/5.6	0.50	8/3.2	0.28	8/3.2	0.28	74/29.6	2.62
	6. Moong	-do-	14/5.6	0.51	7/2.8	0.26	7/2.8	0.26	74/29.6	2.70
	7. Arhar	-do-	14/5.6	0.41	7/2.8	0.21	7/2.8	0.21	74/29.6	2.18

	8. Wheat	-do-	14/5.6	0.81	7/2.8	0.40	7/2.8	0.40	73/29.2	4.22
	Agro forestry:-									
	Species									
	1- Aonla	Area in ha	1	0.18	1	0.18	1	0.18	15	2.70
	2. Guava	Area in ha	1	0.18	1	0.18	1	0.18	12	2.16
	Live Stock Management									
	A. fodder production	Farmers/ No. of Units	26	0.16	10	0.06	8	0.05	192	1.15
	B. Vaccination/Medication	No. of Animals	46	0.03	12	0.01	13	0.01	189	0.12
	C. Artificial Insemination	No. of Animals	46	0.02	16	0.01	13	0.01	190	0.08
	D. Natural Service.	He Buffalo	1	0.24	1	0.24	1	0.24	11	2.64
	Total for Ag. Production System			**9.96**		**5.92**		**5.90**		**58.02**
Total				**74.70**		**44.37**		**44.28**		**435.15**

DESIGN AND ESTIMATES OF CHECKDAM

Design of surplusing arrangement No. 1 to be constructed along with WHB									
HYDROLOGIC DESIGN									
Area (ha)	25								
slope	0.0021								
K	7.47								
a	0.17								
b	0.75								
n	0.96								
Time of Concentration									
		Le.77	Se-0.385						
L (m)	700	**155.14**							
S	0.0021		**10.655**						
		hour	Tc + b		(tc+b) power n				
Tc	**32.185**	0.5364	1.2864		1.274				
Intensity									
		Tr power a							

Tr	10	1.4791							
I		8.6758							
Discharge									
			Taken						
	c	0.5	Coeff						
	I	86.758	mm/hr						
	A	25	ha						
	Q	3.0124			Cumec				

HYDRAULIC DESIGN									
	Length of crest weir (m)			**2**					
	Weir height (m)		h						
		Q = 1.71*L*h power (3/2)							
		h power 3/2		0.8808					
					Taken				
		h		0.919	**0.8**	h1			
		h + free board		0.9649	**0.95**				
	Height of WHB			2.35					
	Height of water drop (H)			1.40		Say	**1.4**		

STABILITY ANALYSIS												
	Let			**Top width (m)**		t	**0.7**					
				Bottom width (m)		T	**1.5**					
	Weight of dam per unit length (kg)					W	3388		W square	**11478544**		
	Horizontzl water pressure (Kg)					P	980		P square	**960400**		
	Uplift pressure (kg)					U	(T*w*H)/ 2	**1050**				
	Net downword force (kg)					Wn	W-U	**2338**	Wn Square	**5466244**		

	Resultant (kg)				R				**2535.082642**		
					H	1.4					
					Xbar		**0.574242**				
					Z		**0.228951**				
	Point of Resultant (xbar+Z)						**0.803194**				
					EA		0.925758				
					P*H/3		457.3333				
					W*EA		3136.467				
					b/6		0.25				
					b/2		0.75				
		e = xbar+Z-b/2			e (OF)		0.053194				
		fmax = Wn/b(1+6*e/b)			fmax		1890.311				
A Safety against sliding											
					(mu*W)/P		**1.192857**				
B Safety against overturning					(W*EA)/(P*H/3)		**2.082255**				
C Safety against Tension					e<b/6 or b/6-e should be +ive		**0.196806**				
D Safety against Crushing				Permiss comp Stress kg/sqm		say	**10000**				
				PCS-fmax should be +ive			**8109.689**				

Depth of Foundation												
			Normal scour depth, dn			0.473[Q/f]power1/3						
				Q (cumec)	3.012							
				Q (Cusec)	106.3							
				f is silt factor, take=		1						
				[q/f]		106.302						
				[q/f] power1/3		4.73711						
				dn (ft)		2.24065						
				dn (m)		0.68313						
			Maximum scour depth, dm			1.5*dn	**1.02469**					
									Technical Specification			
			Foundation depth, D			1.33 dm	**1.36284**		**1.50**			
Minimum length of headwall extension (m)					E=3h+0.6 or 1.5F whichever is greater							
				F is net drop from top of transverse sill to crest								
				St= height of transverse sill= h/3				0.316667	**0.30**			
				F (m)	1.1							
				E (m)	3.45	or	1.65	say	**3.00**			
Length of Basin Lb												
			Lb (m)= F(2.28*h/F+0.52)			2.738		say	**2.70**			
Height of the sidewall at end sill is taken to be minimum 1.5h1,but more than H/2												
				J (m)	1.5h1	1.2	more than H/2	0.7	**1.20**			
Height of the sidewall at the weir end												

				Equal to gully depth	2.35				**2.35**			
				M (m)	2(F+1.33h-J)			2.327	**2.30**			
				K (m)	Lb+.1-M			0.473	**0.90**			
Length of Wing wall (WL)												
				WL = 2.25h				2.1375	**2.00**			
Depth of Toe Wall												
				h1+0.1				0.9	**1.00**			

WORK ABSTRACT

Sl. No.	**Item**	**Specification (m)**			**Quantity (cum)**			
		Length	**Breadth**	**Depth**				
1	**Clearing of site (Removal of trees, shrubs and bushes)**	8.00	10.00					
2	**Earth work**							
	a) in hard soil Headwall Foundation	2.00	2.50	1.00	5.00	Effective depth will be 0.7 m		
	b) in hard soil RHS of Headwall extension	3.00	2.50	1.20	9.00	"		
	c) in hard soil LHS of Headwall extension	3.00	2.50	1.20	9.00	"		
	d) in hard soil cutoff wall	8.00	1.60	0.80	10.24			
	e)in hard soil side wall on both side	6.40	2.00	2.00	25.60	Effective depth will be 1.25 m		

	f) in hard soil Toe wall	2.00	1.60	1.00	3.20	Effective depth will be 1.00 m		
	g) in hard soil Wing wall on both side	4.00	1.80	1.50	10.80	"		
	h) Apron	2.70	2.30	0.50	3.11			
				Total	**75.95**			
3	**Cement concrete**							
	Cement Concrete (1:2:4)							
	a) Head wall coping	2.00	0.70	0.10	0.14			
	b) Apron	2.70	2.30	0.10	0.62			
	c) End sill coping	2.30	0.50	0.10	0.12			
				Total	**0.88**			
	Cement Concrete (1:4:8)							
	d) Toe wall	2.30	0.70	0.10	0.16			
	e) Apron	2.70	2.30	0.10	0.62			
	f) Side wall on both side	6.40	1.10	0.10	0.70			
	g) Wing wall on both side	4.00	1.00	0.10	0.40			
	h)Headwall and Headwall Extension	8.00	1.60	0.10	1.28			
				Total	**3.17**			
4	**Requirement of sand to nullify the impact of cracks**							
	a) Below cutoff wall	8.00	0.70	0.05	0.28			
	b)Below Headwall and headwall extension	8.00	1.60	0.05	0.64			
	c) Below side wall on both sides	6.40	1.10	0.05	0.35			
	d) Below wing wall on both side	4.00	1.00	0.05	0.20			
	e) Below apron	2.70	2.30	0.05	0.31			
	f) Below Toe wall	2.30	0.70	0.05	0.08			
				Total	**1.86**			
5	**Stone Masonary in CM 1:4**							
	a) Corewall	8.00	0.60	0.80	3.84			

	b) Headwall and Headwall Extension on both side-Foundation	8.00	1.50	0.70	8.40			
	c) Headwall+ Headwall Extension on both side above gully bed-super structure	8.00	1.10	1.40	12.32	Width=(0.7+1.5)/2= 1.10 m		
	d) Headwall Extension on both the side above crest	6.00	0.70	0.95	3.99			
	e) Foundation for side wall on both side	6.00	1.10	1.25	8.25			
	f) Side wall on both side -super structure (K Part)-I	1.80	1.00	0.80	1.44			
	g) Side wall on both side-above part-I mentioned in (e): (K Part)-II	1.80	0.80	0.40	0.58			
	h) Side wall on both side above part-II mentioned in (f): (K Part)-III	1.80	0.70	0.60	0.76			
	i) Side wall on both side above part-II mentioned in (f): (K Part)-IV	1.80	0.60	0.55	0.59			
	j) Side wall on both side-Super structure (M Part)-I	4.60	1.00	0.80	3.68			
	k) Side wall on both side-Super structure (M Part)-II	4.60	0.80	0.40	1.47			
	l) Side wall on both side above Part-II mentioned in (i): (M Part)-III	4.60	0.70	0.575	1.85	Avg. ht. of triangle portion=	0.575	
	m) Foundation for wing wall on both side	4.00	0.80	1.00	3.20			
	n) Wing wall on both side-Super structure-Part- I	4.00	0.70	0.60	1.68			
	o) Wing wall on both side-Above Part-I mentioned in (l): Part -II	4.00	0.60	0.30	0.72	Avg. ht. of triangle portion=	0.30	

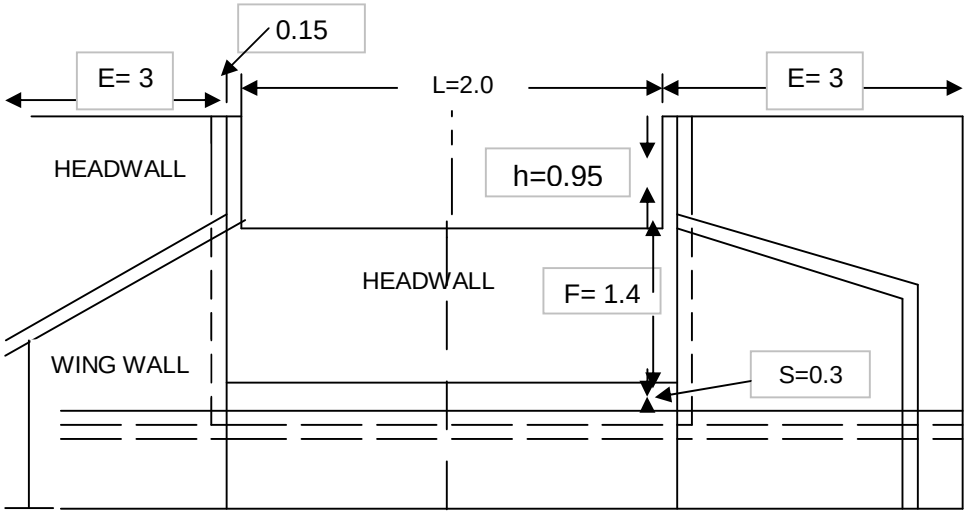
	p) Toe wall: Part I	2.30	0.70	0.50	0.81			
	q) Toe wall: Part II	2.30	0.60	0.50	0.69			
	r) Transverse Sill	2.30	0.50	0.30	0.35			
	s) Apron	2.70	2.30	0.25	1.55			
					56.16			
6	**M S Bar (10 mm, q)**				**1.50**			
7	**Providing rough stone pitching in u/s (both side)**	35.00	2.35	0.20	**16.45**			
8	**Cement pointing to stone masonary in CM 1:3 (sqm)**							
	a) Headwall both side + Extension u/s only	8.00		1.40	11.20			
	b) Side wall both side (RHS and LHS)-Part I	6.40		1.20	7.68			
	c) Side wall both side (RHS and LHS)-Part II	1.80		1.15	2.07			
	d) Side wall both side (RHS and LHS)-Part-III	4.60		0.575	2.65	Avg. ht. of triangle portion=	0.575	
	e) Wing wall both side-Part I	4.00		0.60	2.40			
	f) Wing wall both side-Part I	4.00		0.30	1.20	Avg. ht. of triangle portion=	0.30	
				Total	**27.20**			
9	**Filling of black clay soil in the up stream (free from any kind of gravel)**				**5.00**	trolly		

MATERIAL ABSTRACT												
						Required Quantiy						
						Quantiy,cum	Cement,bags	Sand,cum	Conc ,cum	Khanda (cum)	Boulder(cum)	MS Bar (q)
1	Cement Concrete mix (1:2:4): 12 mm conc.					0.88	5.61	0.39	0.79			
2	Cement Concrete mix (1:4:8); 20 mm conc.					3.17	10.76	1.49	2.98			
3	Stone Maspnary in CM 1:4					56.16	140.41	19.10		56.16		
4	MS Bar for reinforcing											1.50
5	Boulder for pitching					16.45					16.45	
6	Cement pointing to stone masonary in CM 1:3 (sqm)					27.20	1.69	0.17				
7	Black clay soil (gravel free)					5.00						
8	Requirement of sand to nullify the impact of cracks							1.86				
					Total		**158.46**	**23.01**		**56.16**	**16.45**	**1.50**

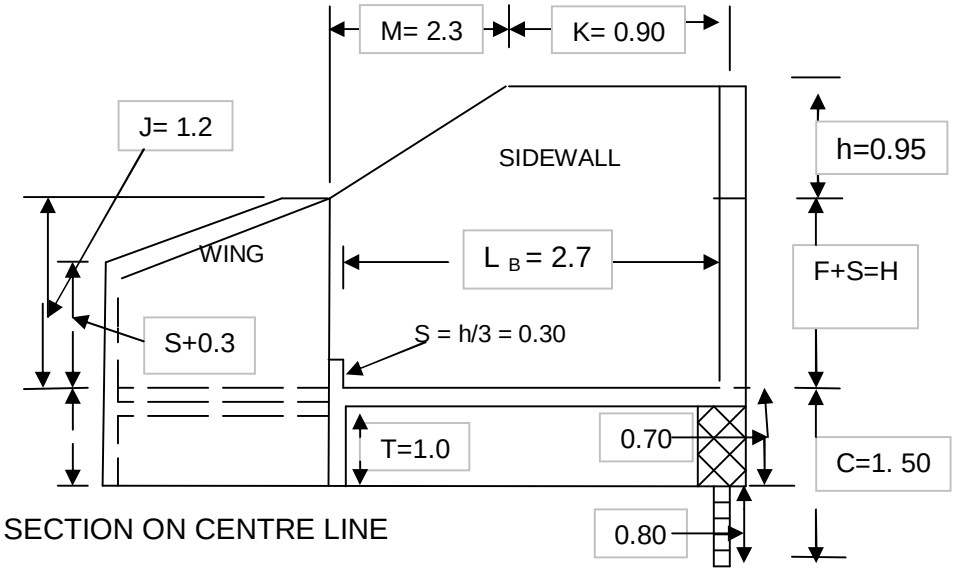
COST ABSTRACT

	Sl. No.	Item	Quantity	Unit	Rate (Rs./Unit)	Amount (Rs.)
A	1	Cement	158	Bag	300.00	47538.57
	2	Sand (good quality)	23.01	m^3	900.00	20710.47
	3	Concrete-12 mm	0.79	m^3	1300.00	1024.92
	4	Concrete-20 mm	2.98	m^3	1200.00	3571.25
	5	Khanda (8"x8"x8")	56.16	m^3	1000.00	56162.00
	6	M S Bar (10 mm Saria)	1.50	q	4500.00	6750.00
	7	Boulder	16.45	m^3	700.00	11515.00
	8	Filling of black clay soil in the up stream (free from any kind of gravel)	5.00	Trolly	700.00	3500.00
					Total	**150772.20**
B	9	Water supply through tanker @ 3 % of material cost				4523.17
C	10	Labour Charges @ 35%				52770.27
					Total (A+B+C)	**208065.64**
	11	Misc. @ 3%				6241.97
					G. Total	**214307.61**
		Rs. 2,14,308/- (Rs. Two lakh fourteen thousand three hundred eight only)				

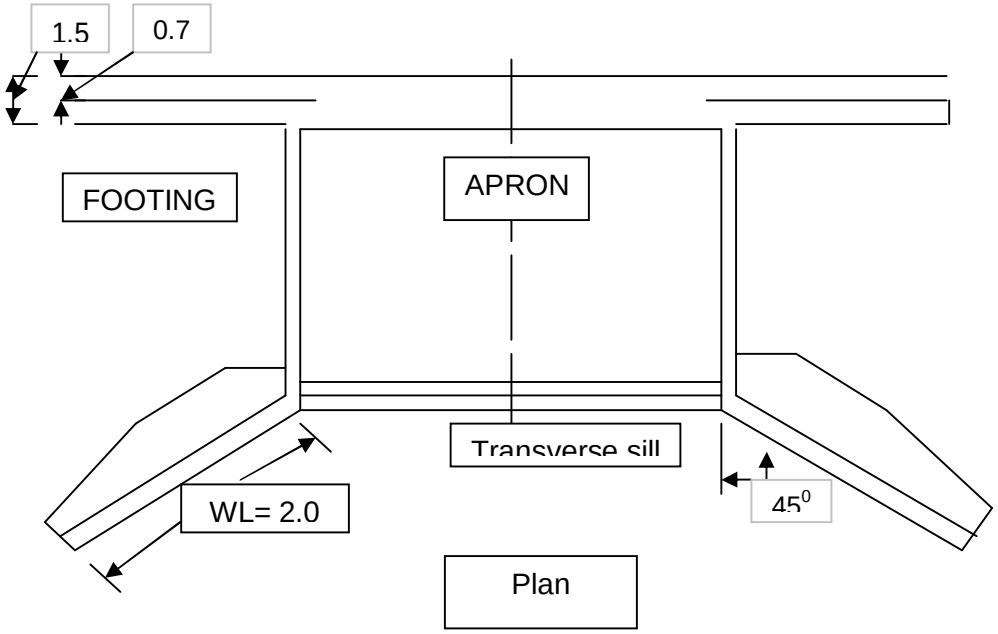
Note: The cost of materials is inclusive of all taxes and transportation to the site. It is based on the prevailing market rates. It may vary with respect to time



DOWN STREAM ELEVATION



SECTION ON CENTRE LINE



L = Length of weir
h = Depth of weir
F = Drop through spillway from crest of weir to top of transverse sill
S = Height of transverse sill
L_B = Length of Apron
T = Depth of toewall below top of apron
C = Depth of cutoff wall below top of apron
E = Length of headwall extension
J = Height of wingwall & sidewall at junction

DESIGNED BY:-
DR. R.C. SACHAN
EX. SPECIAL SCIENTIST, (LAND &WATER MANAGEMENT)
ICRISAT, PATANCHERU, A.P.

Note: Figure not to scale, All dimensions are in Metre

Technical Details of Outlet No. 1 to be constructed along with WHB

Design of surplusing arrangement No. 2 to be constructed along with WHB										
HYDROLOGIC DESIGN										
Area (ha)	20									
slope	0.0022									
K	7.47									
a	0.17									
b	0.75									
n	0.96									
Time of Concentration										
		Le.77	Se-0.385							
L (m)	600	**137.78**								
S	0.0022		**10.61**							
		hour	Tc + b		(tc+b) power n					
Tc	**28.462**	0.4744	1.2244		1.214					
Intensity										
		Tr power a								
Tr	10	1.4791								
I		9.0976								
Discharge										
			Taken							
	c	0.5	Coeff							
	I	90.976	mm/hr							
	A	20	ha							
	Q	2.5271			Cumec					

HYDRAULIC DESIGN									
	Length of crest weir (m)		**1.75**						
	Weir height (m)		h						
		Q = 1.71*L*h power (3/2)							
		h power 3/2	0.8445						
				Taken					
		h	0.8935	**0.9**	h1				
		h + free board	0.9382	**0.95**					
	Height of WHB		2.20						
	Height of water drop (H)		1.25		Say	**1.25**			

STABILITY ANALYSIS									
	Let		**Top width (m)**		t	**0.6**			
			Bottom width (m)		T	**1.3**			
	Weight of dam per unit length (kg)				W	2612.5		W square	**6825156.25**
	Horizontzl water pressure (Kg)				P	781.25		P square	**610351.5625**
	Uplift pressure (kg)				U	(T*w*H)/2	**812.5**		
	Net downword force (kg)				Wn	W-U	**1800**	Wn Square	**3240000**
	Resultant (kg)				R				**1962.231271**
					H	1.25			
					Xbar		**0.496491**		
					Z		**0.209354**		
	Point of Resultant (xbar+Z)						**0.705845**		
					EA		0.803509		
					P*H/3		325.5208		
					W*EA		2099.167		
					b/6		0.216667		
					b/2		0.65		

		e = xbar+Z-b/2			e (OF)		0.055845		
		fmax = Wn/b(1+6*e/b)			fmax		1741.494		
A Safety against sliding									
				(mu*W)/P			**1.152**		
B Safety against overturning				(W*EA)/(P*H/3)			**2.04004**		
C Safety against Tension				e<b/6 or b/6-e should be +ive			**0.160822**		
D Safety against Crushing			Permiss comp Stress kg/sqm			say	**10000**		
			PCS-fmax should be +ive				**8258.506**		
Depth of Foundation									
		Normal scour depth, dn		0.473[Q/f]power1/3					
			Q (cumec)	2.527					
			Q (Cusec)	89.18					
			f is silt factor, take=		1				
			[q/f]		89.1755				
			[q/f] power1/3		4.46768				
			dn (ft)		2.11321				
			dn (m)		0.64427				
		Maximum scour depth, dm			1.5*dn	**0.96641**			
								Technical Specification	
		Foundation depth, D			1.33 dm	**1.28532**		**1.40**	
Minimum length of headwall extension (m)			E=3h+0.6 or 1.5F whichever is greater						
			F is net drop from top of transverse sill to crest						
			St= height of transverse sill= h/3				0.316667	**0.30**	
			F (m)	0.95					
			E (m)	3.45	or	1.425	say	**3.00**	
Length of Basin Lb									
		Lb (m)= F(2.28*h/F+0.52)			2.66		say	**2.50**	

Height of the sidewall at end sill is taken to be minimum 1.5h1,but more than H/2										
				J (m)	1.5h1	1.35	more than H/2	0.625	**1.20**	
Height of the sidewall at the weir end										
				Equal to gully depth	2.2				**2.20**	
				M (m)	2(F+1.33h-J)			2.027	**2.00**	
				K (m)	Lb+.1-M			0.573	**1.00**	
Length of Wing wall (WL)										
				WL = 2.25h				2.1375	**2.00**	
Depth of Toe Wall										
				h1+0.1				1	**1.00**	

WORK ABSTRACT

Sl. No.	**Item**	**Specification (m)**			**Quantity (cum)**			
		Length	**Breadth**	**Depth**				
1	**Clearing of site (Removal of trees, shrubs and bushes)**	8.00	10.00					
2	**Earth work**							
	a) in hard soil Headwall Foundation	1.75	2.50	1.00	4.38	Effective depth will be 0.7 m		
	b) in hard soil RHS of Headwall extension	3.00	2.50	1.20	9.00	"		
	c) in hard soil LHS of Headwall extension	3.00	2.50	1.20	9.00	"		
	d) in hard soil cutoff wall	7.75	1.60	0.70	8.68			

	e)in hard soil side wall on both side	6.00	2.00	2.00	24.00	Effective depth will be 1.25 m		
	f) in hard soil Toe wall	1.75	1.60	1.00	2.80	Effective depth will be 1.00 m		
	g) in hard soil Wing wall on both side	4.00	1.80	1.50	10.80	"		
	h) Apron	2.50	2.00	0.50	2.50			
				Total	**71.16**			
3	**Cement concrete**							
	Cement Concrete (1:2:4)							
	a) Head wall coping	1.75	0.60	0.10	0.11			
	b) Apron	2.50	2.00	0.10	0.50			
	c) End sill coping	2.00	0.50	0.10	0.10			
				Total	**0.71**			
	Cement Concrete (1:4:8)							
	d) Toe wall	2.00	0.70	0.10	0.14			
	e) Apron	2.50	2.00	0.10	0.50			
	f) Side wall on both side	6.00	1.10	0.10	0.66			
	g) Wing wall on both side	4.00	1.00	0.10	0.40			
	h)Headwall and Headwall Extension	7.75	1.60	0.10	1.24			
				Total	**2.94**			
4	**Requirement of sand to nullify the impact of cracks**							
	a) Below cutoff wall	7.75	0.70	0.05	0.27			
	b)Below Headwall and headwall extension	7.75	1.30	0.05	0.50			
	c) Below side wall on both sides	6.00	1.10	0.05	0.33			
	d) Below wing wall on both side	4.00	1.00	0.05	0.20			
	e) Below apron	2.50	2.00	0.05	0.25			

	f) Below Toe wall	2.00	0.70	0.05	0.07			
				Total	**1.63**			
5	**Stone Masonary in CM 1:4**							
	a) Corewall	7.75	0.60	0.70	3.26			
	b) Headwall and Headwall Extension on both side-Foundation	7.75	1.30	0.70	7.05			
	c) Headwall+ Headwall Extension on both side above gully bed-super structure	7.75	0.95	1.25	9.20	Width=(0.6+1.3)/2= 0.95 m		
	d) Headwall Extension on both the side above crest	6.00	0.60	0.95	3.42			
	e) Foundation for side wall on both side	6.00	1.10	1.25	8.25			
	f) Side wall on both side -super structure (K Part)-I	2.00	1.00	0.80	1.60			
	g) Side wall on both side-above part-I mentioned in (e): (K Part)-II	2.00	0.80	0.40	0.64			
	h) Side wall on both side above part-II mentioned in (f): (K Part)-III	2.00	0.70	0.60	0.84			
	i) Side wall on both side above part-II mentioned in (f): (K Part)-IV	2.00	0.60	0.40	0.48			
	j) Side wall on both side-Super structure (M Part)-I	4.00	1.00	0.80	3.20			
	k) Side wall on both side-Super structure (M Part)-II	4.00	0.80	0.40	1.28			
	l) Side wall on both side above Part-II mentioned in (i): (M Part)-III	4.00	0.70	0.500	1.40	Avg. ht. of triangle portion=	0.500	
	m) Foundation for wing wall on both side	4.00	0.80	1.00	3.20			

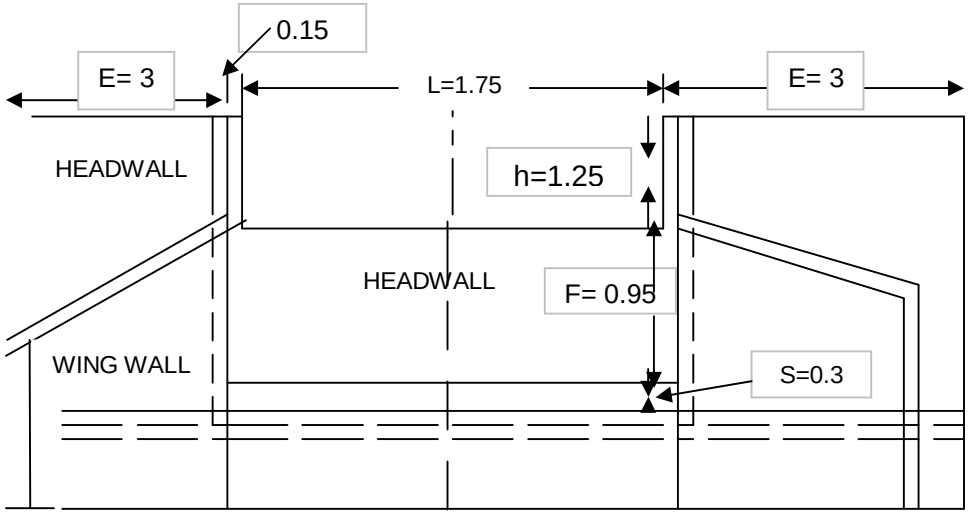
	n) Wing wall on both side-Super structure-Part- I	4.00	0.70	0.60	1.68			
	o) Wing wall on both side-Above Part-I mentioned in (l): Part -II	4.00	0.60	0.30	0.72	Avg. ht. of triangle portion=	0.30	
	p) Toe wall: Part I	2.00	0.70	0.50	0.70			
	q) Toe wall: Part II	2.00	0.60	0.50	0.60			
	r) Transverse Sill	2.00	0.50	0.30	0.30			
	s) Apron	2.50	2.00	0.25	1.25			
					49.07			
6	**M S Bar (10 mm, q)**				**1.25**			
7	**Providing rough stone pitching in u/s (both side)**	35.00	2.20	0.20	**15.40**			
8	**Cement pointing to stone masonary in CM 1:3 (sqm)**							
	a) Headwall both side + Extension u/s only	7.75		1.25	9.69			
	b) Side wall both side (RHS and LHS)-Part I	6.00		1.20	7.20			
	c) Side wall both side (RHS and LHS)-Part II	2.00		1.00	2.00			
	d) Side wall both side (RHS and LHS)-Part-III	4.00		0.500	2.00	Avg. ht. of triangle portion=	0.500	
	e) Wing wall both side-Part I	4.00		0.60	2.40			
	f) Wing wall both side-Part I	4.00		0.30	1.20	Avg. ht. of triangle portion=	0.30	
				Total	**24.49**			
9	**Filling of black clay soil in the up stream (free from any kind of gravel)**				**5.00**	trolly		

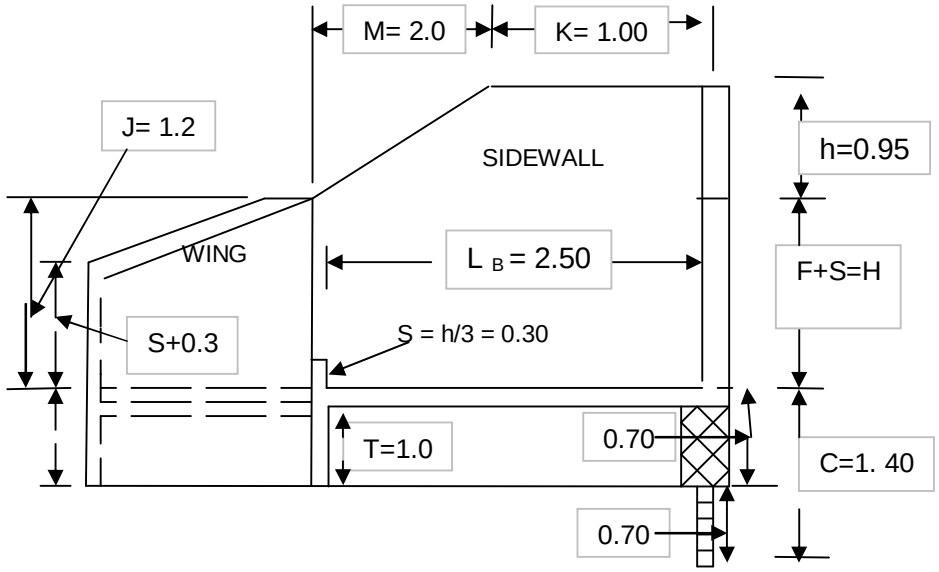
MATERIAL ABSTRACT												
						Required Quantiy						
						Quantiy,cum	Cement,bags	Sand,cum	Conc ,cum	Khanda (cum)	Boulder(cum)	MS Bar (q)
1	Cement Concrete mix (1:2:4): 12 mm conc.					0.71	4.51	0.32	0.63			
2	Cement Concrete mix (1:4:8); 20 mm conc.					2.94	10.00	1.38	2.76			
3	Stone Maspnary in CM 1:4					49.07	122.68	16.68		49.07		
4	MS Bar for reinforcing											1.25
5	Boulder for pitching					15.40					15.40	
6	Cement pointing to stone masonary in CM 1:3 (sqm)					24.49	1.52	0.15				
7	Black clay soil (gravel free)					5.00						
8	Requirement of sand to nullify the impact of cracks							1.63				
					Total		**138.70**	**20.16**		**49.07**	**15.40**	**1.25**

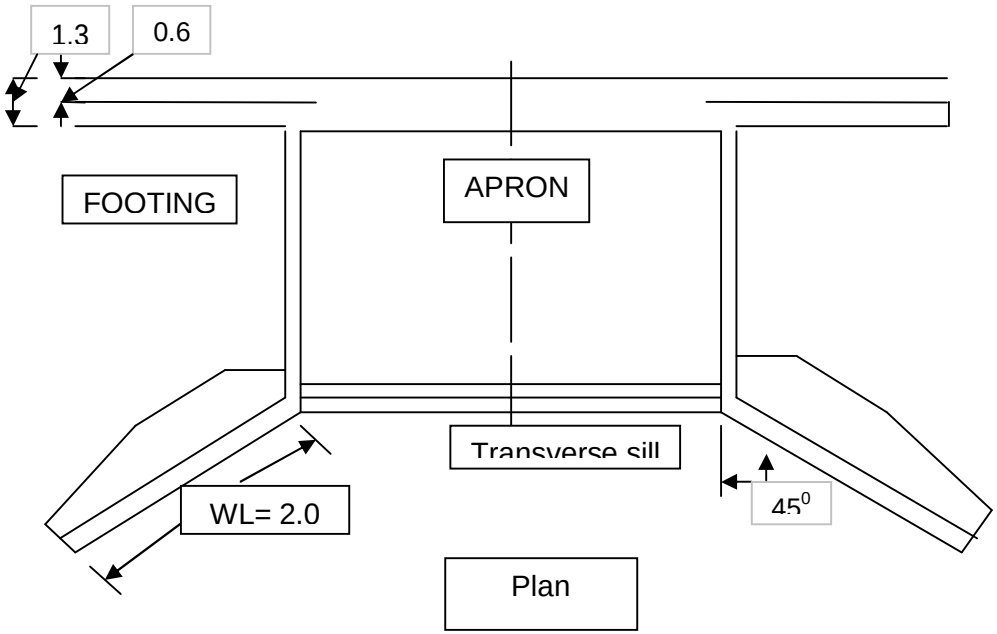
COST ABSTRACT

	Sl. No.	Item	Quantity	Unit	Rate (Rs./Unit)	Amount (Rs.)
A	1	Cement	139	Bag	300.00	41610.84
	2	Sand (good quality)	20.16	m^3	900.00	18146.10
	3	Concrete-12 mm	0.63	m^3	1300.00	824.85
	4	Concrete-20 mm	2.76	m^3	1200.00	3316.32
	5	Khanda (8"x8"x8")	49.07	m^3	1000.00	49070.63
	6	M S Bar (10 mm Saria)	1.25	q	4500.00	5625.00
	7	Boulder	15.40	m^3	700.00	10780.00
	8	Filling of black clay soil in the up stream (free from any kind of gravel)	5.00	Trolly	700.00	3500.00
					Total	**132873.73**
B	9	Water supply through tanker @ 3 % of material cost				3986.21
C	10	Labour Charges @ 35%				46505.81
					Total (A+B+C)	**183365.75**
	11	Misc. @ 3%				5500.97
					G. Total	**188866.72**
		Rs.1,88,867/- (Rs. One lakh eighty eight thousand eight hundred sixty seven only)				

Note: The cost of materials is inclusive of all taxes and transportation to the site. It is based on the prevailing market rates. It may vary with respect to time







L = Length of weir
h = Depth of weir
F = Drop through spillway from crest of weir to top of transverse sill
S = Height of transverse sill
L_B = Length of Apron
T = Depth of toewall below top of apron
C = Depth of cutoff wall below top of apron
E = Length of headwall extension
J = Height of wingwall & sidewall at junction

DESIGNED BY:-
DR. R.C. SACHAN
EX. SPECIAL SCIENTIST, (LAND &WATER MANAGEMENT)
ICRISAT, PATANCHERU, A.P.

Note: Figure not to scale, All dimensions are in Metre

Technical Details of Outlet No. 2 to be constructed along with WHB

Design of surplusing arrangement No. 3 to be constructed along with WHB										
HYDROLOGIC DESIGN										
Area (ha)	15									
slope	0.002									
K	7.47									
a	0.17									
b	0.75									
n	0.96									
Time of Concentration										
		Le.77	Se-0.385							
L (m)	500	**119.73**								
S	0.002		**10.942**							
		hour	Tc + b		(tc+b) power n					
Tc	**25.508**	0.4251	1.1751		1.168					
Intensity										
		Tr power a								
Tr	10	1.4791								
I		9.4632								
Discharge										
			Taken							
	c	0.4	Coeff							
	I	94.632	mm/hr							
	A	15	ha							
	Q	1.5772			Cumec					

HYDRAULIC DESIGN										
	Length of crest weir (m)			**1.25**						
	Weir height (m)			h						
		Q = 1.71*L*h power (3/2)								
		h power 3/2		0.7379						
					Taken					
		h		0.8167	**0.7**	h1				
		h + free board		0.8576	**0.75**					
	Height of WHB			1.75						
	Height of water drop (H)			1.00		Say	**1**			
STABILITY ANALYSIS										
	Let			**Top width (m)**		t	**0.5**			
				Bottom width (m)		T	**1.1**			
	Weight of dam per unit length (kg)					W	1760		W square	**3097600**
	Horizontzl water pressure (Kg)					P	500		P square	**250000**
	Uplift pressure (kg)					U	(T*w*H)/ 2	**550**		
	Net downword force (kg)					Wn	W-U	**1210**	Wn Square	**1464100**
	Resultant (kg)					R				**1309.236419**
						H	1			
						Xbar		**0.41875**		
						Z		**0.161415**		
	Point of Resultant (xbar+Z)							**0.580165**		
						EA		0.68125		
						P*H/3		166.6667		

						W*EA		1199		
						b/6		0.183333		
						b/2		0.55		
		e = xbar+Z-b/2				e (OF)		0.030165		
		fmax = Wn/b(1+6*e/b)				fmax		1280.992		
A Safety against sliding										
					(mu*W)/P			**1.21**		
B Safety against overturning					(W*EA)/(P*H/3)			**2.104998**		
C Safety against Tension					e<b/6 or b/6-e should be +ive			**0.153168**		
D Safety against Crushing				Permiss comp Stress kg/sqm			say	**10000**		
				PCS-fmax should be +ive				**8719.008**		
Depth of Foundation										
			Normal scour depth, dn			0.473[Q/f]power1/3				
				Q (cumec)	1.577					
				Q (Cusec)	55.66					
				f is silt factor, take=		1				
				[q/f]		55.6554				
				[q/f] power1/3		3.818				
				dn (ft)		1.80591				
				dn (m)		0.55058				

			Maximum scour depth, dm			1.5*dn	**0.82587**			
									Technical Specification	
			Foundation depth, D			1.33 dm	**1.09841**		**1.10**	
Minimum length of headwall extension (m)				E=3h+0.6 or 1.5F whichever is greater						
				F is net drop from top of transverse sill to crest						
				St= height of transverse sill= h/3				0.25	**0.25**	
				F (m)	0.75					
				E (m)	2.85	or	1.125	say	**2.50**	
Length of Basin Lb										
			Lb (m)= F(2.28*h/F+0.52)			2.1		say	**2.00**	
Height of the sidewall at end sill is taken to be minimum 1.5h1,but more than H/2										
				J (m)	1.5h1	1.05	more than H/2	0.5	**1.00**	
Height of the sidewall at the weir end										
				Equal to gully depth	1.75				**1.75**	
				M (m)	2(F+1.33h-J)			1.495	**1.50**	
				K (m)	Lb+.1-M			0.605	**1.00**	
Length of Wing wall (WL)										
				WL = 2.25h				1.6875	**1.75**	
Depth of Toe Wall										
				h1+0.1				0.8	**0.80**	

WORK ABSTRACT

Sl. No.	Item	Specification (m)			Quantity (cum)			
		Length	Breadth	Depth				
1	**Clearing of site (Removal of trees, shrubs and bushes)**	8.00	10.00					
2	**Earth work**							
	a) in hard soil Headwall Foundation	1.25	2.10	1.00	2.63	Effective depth will be 0.7 m		
	b) in hard soil RHS of Headwall extension	2.50	2.10	1.20	6.30	"		
	c) in hard soil LHS of Headwall extension	2.50	2.10	1.20	6.30	"		
	d) in hard soil cutoff wall	6.25	1.60	0.40	4.00			
	e)in hard soil side wall on both side	5.00	2.00	1.50	15.00	Effective depth will be 1 m		
	f) in hard soil Toe wall	1.50	1.60	1.00	2.40	Effective depth will be 1.00 m		
	g) in hard soil Wing wall on both side	3.50	1.80	1.50	9.45	"		
	h) Apron	2.00	1.50	0.50	1.50			
				Total	**47.58**			
3	**Cement concrete**							
	Cement Concrete (1:2:4)							
	a) Head wall coping	1.25	0.50	0.10	0.06			
	b) Apron	2.00	1.50	0.10	0.30			

	c) End sill coping	1.50	0.50	0.10	0.08			
				Total	**0.44**			
	Cement Concrete (1:4:8)							
	d) Toe wall	1.50	0.70	0.10	0.11			
	e) Apron	2.00	1.50	0.10	0.30			
	f) Side wall on both side	5.00	1.10	0.10	0.55			
	g) Wing wall on both side	3.50	1.00	0.10	0.35			
	h)Headwall and Headwall Extension	6.25	1.60	0.10	1.00			
				Total	**2.31**			
4	**Requirement of sand to nullify the impact of cracks**							
	a) Below cutoff wall	6.25	0.70	0.05	0.22			
	b)Below Headwall and headwall extension	6.25	1.20	0.05	0.38			
	c) Below side wall on both sides	5.00	1.10	0.05	0.28			
	d) Below wing wall on both side	3.50	1.00	0.05	0.18			
	e) Below apron	2.00	1.50	0.05	0.15			
	f) Below Toe wall	1.50	0.70	0.05	0.05			
				Total	**1.25**			
5	**Stone Masonary in CM 1:4**							
	a) Corewall	6.25	0.60	0.40	1.50			
	b) Headwall and Headwall Extension on both side-Foundation	6.25	1.10	0.70	4.81			
	c) Headwall+ Headwall Extension on both side above gully bed-super structure	6.25	0.80	1.00	5.00	Width=(0.5+1.1)/2= 0.8 m		
	d) Headwall Extension on both the side above crest	5.00	0.50	0.75	1.88			
	e) Foundation for side wall on both side	5.00	0.90	1.00	4.50			

	f) Side wall on both side -super structure (K Part)-I	2.00	0.80	0.50	0.80			
	g) Side wall on both side-above part-I mentioned in (e): (K Part)-II	2.00	0.70	0.50	0.70			
	h) Side wall on both side above part-II mentioned in (f): (K Part)-III	2.00	0.60	0.50	0.60			
	i) Side wall on both side above part-II mentioned in (f): (K Part)-IV	2.00	0.50	0.25	0.25			
	j) Side wall on both side-Super structure (M Part)-I	3.00	0.90	0.50	1.35			
	k) Side wall on both side-Super structure (M Part)-II	3.00	0.80	0.50	1.20			
	l) Side wall on both side above Part-II mentioned in (i): (M Part)-III	3.00	0.70	0.375	0.79	Avg. ht. of triangle portion=	0.375	
	m) Foundation for wing wall on both side	3.50	0.70	1.00	2.45			
	n) Wing wall on both side-Super structure-Part- I	3.50	0.60	0.55	1.16			
	o) Wing wall on both side-Above Part-I mentioned in (l): Part -II	3.50	0.50	0.23	0.39	Avg. ht. of triangle portion=	0.23	
	p) Toe wall: Part I	1.50	0.70	0.50	0.53			
	q) Toe wall: Part II	1.50	0.60	0.30	0.27			
	r) End Sill	1.50	0.50	0.25	0.19			
	s) Apron	2.00	1.50	0.25	0.75			
					29.11			
6	**M S Bar (10 mm, q)**				**1.00**			

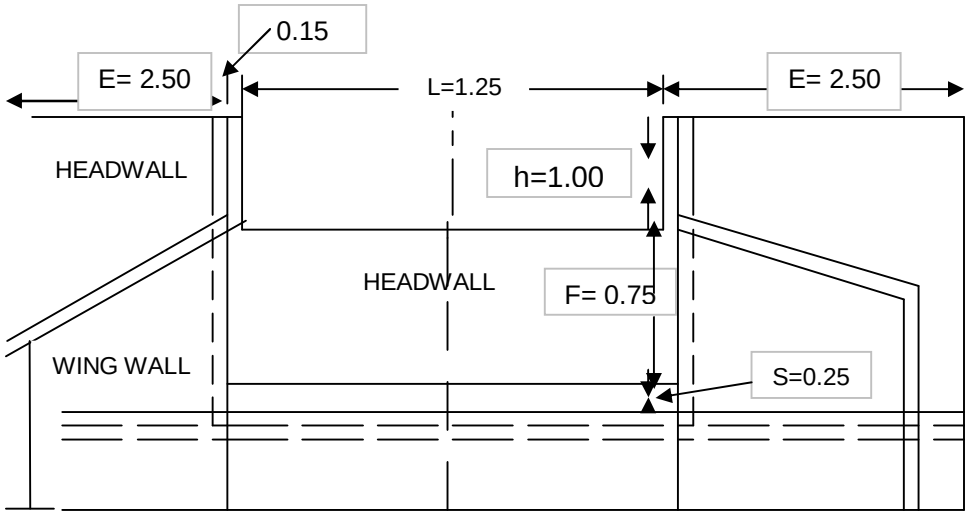
7	**Providing rough stone pitching in u/s (both side)**	35.00	1.75	0.20	**12.25**			
8	**Cement pointing to stone masonary in CM 1:3 (sqm)**							
	a) Headwall both side + Extension u/s only	6.25		1.00	6.25			
	b) Side wall both side (RHS and LHS)-Part I	5.00		1.00	5.00			
	c) Side wall both side (RHS and LHS)-Part II	2.00		0.75	1.50			
	d) Side wall both side (RHS and LHS)-Part-III	3.00		0.375	1.13	Avg. ht. of triangle portion=	0.375	
	e) Wing wall both side-Part I	3.50		0.55	1.93			
	f) Wing wall both side-Part I	4.00		0.23	0.90	Avg. ht. of triangle portion=	0.23	
				Total	**16.70**			
9	**Filling of black clay soil in the up stream (free from any kind of gravel)**				**4.00**	trolly		

MATERIAL ABSTRACT												
						Required Quantiy						
						Quantiy,cum	Cement,bags	Sand,cum	Conc ,cum	Khanda (cum)	Boulder(cum)	MS Bar (q)
1	Cement Concrete mix (1:2:4): 12 mm conc.					0.44	2.80	0.20	0.39			
2	Cement Concrete mix (1:4:8); 20 mm conc.					2.31	7.84	1.08	2.17			
3	Stone Maspnary in CM 1:4					29.11	72.77	9.90		29.11		
4	MS Bar for reinforcing											1.00
5	Boulder for pitching					12.25					12.25	
6	Cement pointing to stone masonary in CM 1:3 (sqm)					16.70	1.04	0.11				
7	Black clay soil (gravel free)					4.00						
8	Requirement of sand to nullify the impact of cracks							1.25				
					Total		**84.44**	**12.53**		**29.11**	**12.25**	**1.00**

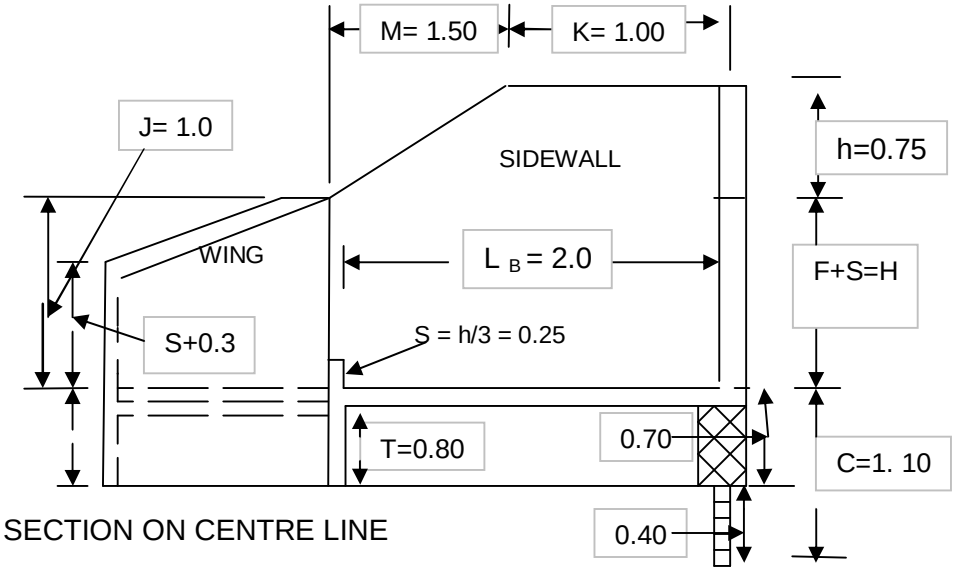
COST ABSTRACT

	Sl. No.	Item	Quantity	Unit	Rate (Rs./Unit)	Amount (Rs.)
A	1	Cement	84	Bag	300.00	25331.41
	2	Sand (good quality)	12.53	m^3	900.00	11275.03
	3	Concrete-12 mm	0.39	m^3	1300.00	511.88
	4	Concrete-20 mm	2.17	m^3	1200.00	2600.04
	5	Khanda (8"x8"x8")	29.11	m^3	1000.00	29106.25
	6	M S Bar (10 mm Saria)	1.00	q	4500.00	4500.00
	7	Boulder	12.25	m^3	700.00	8575.00
	8	Filling of black clay soil in the up stream (free from any kind of gravel)	4.00	Trolly	700.00	2800.00
					Total	**84699.60**
B	9	Water supply through tanker @ 3 % of material cost				2540.99
C	10	Labour Charges @ 35%				29644.86
					Total (A+B+C)	**116885.45**
	11	Misc. @ 3%				3506.56
					G. Total	**120392.01**
		Rs. 1,20,392/- (Rs. One lakh twenty thousand three hundred ninety two only)				

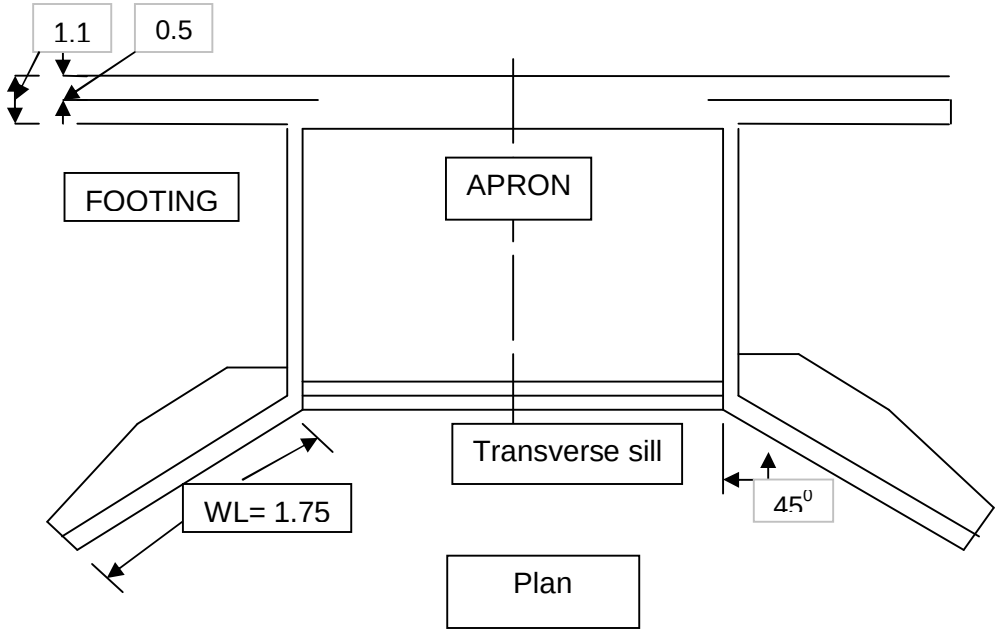
Note: The cost of materials is inclusive of all taxes and transportation to the site. It is based on the prevailing market rates. It may vary with respect to time



DOWN STREAM ELEVATION



SECTION ON CENTRE LINE



Note: Figure not to scale, All dimensions are in Metre

L = Length of weir
h = Depth of weir
F = Drop through spillway from crest of weir to top of transverse sill
S = Height of transverse sill
L_B = Length of Apron
T = Depth of toewall below top of apron
C = Depth of cutoff wall below top of apron
E = Length of headwall extension
J = Height of wingwall & sidewall at junction

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Technical Details of Outlet No. 3 to be constructed along with WHB

CHAPTER - 6

CAPACITY BUILDING PLAN

The capacity building of various stake holders will be given very high priority as the watershed is to be developed in participatory mode. Capacity building initiative plays very important role in human resource development of model watershed to replicate and train other watershed resource persons. The capacity building initiatives include training to government officials, CBOs, farmers and PIAs through field days, hands-on trainings, exposure visits to successful watersheds, training materials and etc. Need-based specialized training courses will be conducted. The details of the training institutes for capacity building and training to stake holders on participatory watershed management are summarized in Table 6.1 and 6.2, respectively.

Table 6.1: List of identified training institutes for capacity building*

Sr. No.	Name of the Training Institute	Full Address with contact no, website & e-mail	Designation of the Head of Institute	Type of Institute	Area(s) of specialization	No. of training assigned	No. of persons to be trained	Allocation to be made to the institute
1.	Krishi Vigyan Kendra	Kamasin, Banda	Programme Coordinator	Agriculture University	Extension Agronomy Home Science Soil Science	16	800	Proposal with budget will be received
2.	National Research Center for Agro-Forestry	Gwalior Road, Jhansi	Director	GOI, (ICAR)	Agro-forestry and NRM on watershed basis	16	800	-do-
3	District Gram Vikash Sansthan	Vikash Bhawan, Banda	Coordinator	State Govt.	Small scale	4	100	-do-
4	Indian Institute of Grass Land	Gwalior Road, Jhansi	Director, Jhansi	GoI (ICAR)	Grasses and fodder	4	100	-do-
5	Deptt. Of Horticulture	Banda	Deputy Director	State Govt.	Fruit and Vegetable Production	2	50	-do-

***Number of trainings and persons may be changed as per the budget available.**

Table 6.2: Training to stakeholders on participatory watershed management*

Sl. No.	Client Group	Title of the Programme/Duration/ Time	Objectives	Coverage/Topics	Training Methodology	Training Institutions
1.	Watershed Committee & WDT members	Planning and implementation of IWMP Project (3 day)	To Strengthen WC and WDT for planning and executing the Project	Natural Resource Management Livelihood options for landless and marginal farmers. Improved Agriculture production system	Lectures, videos and visits to successful watershed	National Research Center for Agro-forestry, Gwalior Road, Jhansi
2.	User Group, SHGs members	Agriculture Production system and specialized training for SHGs (3 day)	To increase the Agriculture productivity and livelihood improvement	Integrated crop management in pulses, cereals, oilseeds, vegetables, orchards and small scale projects related to Agriculture.	Lectures, videos and visits	Krishi Vigyan Kendra, Kamasin, Banda
3	Watershed Committee & WDT members	Management of natural resources on watershed basis and agroforestry	Awareness and strengthening of knowledge and skills	NRM, Production system and livelihood	Lectures, videos and visits to successful watershed	National Research Center for Agro-forestry, Gwalior Road, Jhansi
4	Secretaries of WC and WDT/PIA members	Book keeping and record maintenance	Maintenance of record and preparing budget	Cash book and ledger registers, preparing budget, maintenance of accounts	Lectures and practical exercise	National Research Center for Agro-forestry, Gwalior Road, Jhansi

5	PIA/WDT members	Cultivation of fodder in watershed	Awareness and knowledge enhancement	Package of practices of fodder cultivation	Lectures, videos and visits to successful watershed	Indian Grassland and Fodder Research Institute, Jhansi
6.	PIA/WDT/WC members	Knowledge of market and pricing	Awareness and knowledge enhancement	Market intelligence	Lectures, videos and visits	Agriculture Technology Management Agency (ATMA)
7	PIA/WDT members	Design of SWC structures	Strengthening of knowledge	SWC structures	Lectures, practical exercise and visits to successful watershed	NRCAF, Jhansi / CSWCRTI&RS, Datia, MP

*Training programs, duration and topics may be change on course of project as per need

CHAPTER - 7

PHASING OF PROGRAMME AND BUDGETING

7.1 Monitoring and Evaluation

Monitoring of the project will be done at each stage and it will be carried out for both, process and outcome. Some community members will be trained and will be involved in participatory monitoring of various parameters and processes and the crop yields. The interventions, expenditure and other information will be displayed in the micro-watershed through wall writings. Besides trained community members, PIA/DWDC will also monitor the physical and financial progress of watershed development programme. Frontier technologies viz. GIS and Remote Sensing techniques will be used by the PIA/District Watershed Committee Development (DWCD) for monitoring and evaluation. The PIA shall submit quarterly progress reports (countersigned by the Watershed Committee (WC) President) to the DWDC for further submission to the SLNA. Sustainable and unbiased monitoring will be ensured by involving an independent agency to monitor impact assessment subsequently. About 1 per cent of the total budget will be used on this activity.

Plan for Evaluation

Watershed development activities bring about both tangible and intangible benefits. In order to quantify the benefits, impact analysis has been proposed.

Theme

The watershed development activities will being significant and tangible change in socio-economic status of inhabitants, cropping intensity, ground water recharge, crop diversification, fuel, fodder and small timber availability, livestock composition and milk production, etc. Data on indicators baseline in such parametes with base line data would provide the quantitative information on impact.

Observations

The following indicators will be taken into account for quantitative and qualitative assessment. For the purpose, detailed questionnaires will be prepared and field observations will be carried out.

- Duration of availability of drinking water/irrigation and groundwater recharge measure through periodic ground water level in dug well
- Irrigation frequency and area under irrigation
- Changes in cropping pattern and cropping systems in the farmers fields along with productivity and incomes
- Soil health
- Satellite monitoring for vegetation cover and other parameters
- Fuel, fodder and small timber availability
- Livestock composition and productivity

- Periodic pest and disease monitoring will be done in major crops
- Socio-economic aspects including resource inventory
- Following indices will also be worked out as qualitative indicators of the watershed development:
- Land Improvement Index (LII)
- Crop Diversification Index (CDI)
- Cultivated Land Utilization Index (CLUI)
- Crop Fertilization Index (CFI)
- Induced Watershed Eco-Index (IWEI)

The concurrent and post-project monitoring and evaluation would be conducted to assess the status of watershed related interventions. It will be done by an independent agency having similar experiences. About 1 per cent of the total budget will also be used on evaluation.

7.2 Annual Action Plan (AAP)

Physical and financial targets and outlays and their year wise break ups are given Table 7.1. Year wise financial phasing for the budget available (Rs. 580.20 lakh) with IWMP-X, district Banda is given in Table 7.2.

Table 7.1: Physical and financial targets and outlays and their year wise break ups of IWMP-X, Banda, Banda, U.P.

Project - IWMP-X			**PIA-Soil Conservation Unit, Banda-I**						**District-Banda**			
S. No	**Physical and financial targets**	**Unit**	**First Year 2011-12**		**Second Year 2012-13**		**Third Year 2013-14**		**Fourth Year 2014-15**		**Total Project**	
			Physical	**Financial**	**Physical**	**Financial**	**Physical**	**Financial**	**Physical**	**Financial**	**Physical**	**Financial**
1	Administration			2.90		29.01		17.41		8.70	0	58.02
2	Monitoring			0.00		2.90		1.45		1.45	0	5.80
3	Evaluation			0.00		1.16		2.61		2.03	0	5.80
4	**Entry point activities**	No.									0	0.00
	(1) Planned		10	23.21	0	0.00	0	0.00	0	0.00	10	23.21
	(a) No. of Activities	No.	10	0.00	0	0.00	0	0.00	0	0.00	10	0.00
	(b) No. of beneficiaries	No.	11900	0.00	0	0.00	0	0.00	0	0.00	11900	0.00
	(2) Executed		10	0.00	0	0.00	0	0.00	0	0.00	10	0.00

	(c) No. of Activities	No.	10	0.00	0	0.00	0	0.00	0	0.00	10	0.00
	(d) No. of beneficiaries	No.	11900	0.00	0	0.00	0	0.00	0	0.00	11900	0.00
5	**Institutional & Capacity Building**										0	0.00
	(1) No. of Persons to be trained		206	1.45	2082	14.51	1854	13.05			4142	29.01
	(a) SLNA level	No.	30	0.27	270	2.43	270	2.43			570	5.13
	(b) District level	,,	30	0.24	360	2.88	360	2.88			750	6.00
	(c) PIA level (OFFICIAL/WDT/SECARATERY)	,,	60	0.42	480	3.36	360	2.52			900	6.30
	(c) PIA level (FARMERS)	,,	86	0.52	972	5.84	864	5.22			1922	11.58
6	**DPR Preparation**	MWS No.	6	5.80	0	0.00	0	0.00	0	0.00	9	5.80
7	**Watershed Development Works**		-								0	0.00
	(1) SMC	cum	0	0.00	202696	111.26	121618	66.76	81078	44.50	405392	222.52
	(2) Water Resource Development										0	0.00
	(a) Structures	No.	0		33	51.20	20	30.72	13	20.48	66	102.39
	(b) Storage capacity	cum		-	15755	0.00	9453	0.00	6302	-	31510	0.00
	(c) Life saving irrigation area	ha.			26	0.00	16	0.00	11		53	0.00
	(d) User Groups	No.			33		20		13		66	0.00
8	**Production system**										0	0.00
	(1) Agriculture										0	0.00
	(a) Crop demonstration										0	0.00

	(1) No. of dem.	No.	0	0.00	264	11.06	264	11.06	59	2.46	586	24.59
	(2) Area	ha.			105		105		23		234	0.00
	(b) Seed Production		0								0	0.00
	(1) No. of dem.	No.	0	0.00	264	11.06	264	11.06	59	2.46	587	24.59
	(2) Area	ha.	0		106		106		23		235	0.00
	(2) Horticulture/ Agri-Horticulture		0								0	0.00
	(a) Area	ha.	0	0.00	12	2.19	12	2.19	3	0.49	27	4.86
	(b) No. of Plants	No.		0.00							0	0.00
	(4) Animal husbandry										0	0.00
	A. fodder production	No. of Units / Farmers	0	0.00	86	0.52	86	0.52	19	0.12	192	1.15
	B. Vaccination/Medication	No. of Animals			85	0.05	85	0.05	19	0.01	189	0.12
	C. Artificial Insemination	No. of Animals			86	0.03	86	0.03	19	0.01	190	0.08
	D. Natural Service.	He Buffalo			5	1.19	5	1.19	1	0.26	11	2.64
9	**Livelihood activities through SHG's**										0	0.00
	(1) Activity Goatary										0	0.00
	(a) No. of SHG's	No.	0	0.00	12	2.93	12	2.93	3	0.65	26	6.50
	(b) No. of members	No.	0	0.00	117	0.00	117	0.00	26	0.00	260	0.00
	(c) Estimated income per year	Rs.	0	0.00							0	0.00
	(2) Activity- Back Yard Poultry		0	0.00							0	0.00
	(a) No. of SHG's	No.	0	0.00	12	2.93	12	2.93	3	0.65	26	6.50
	(b) No. of members	No.	0	0.00	117	0.00	117	0.00	26	0.00	260	0.00
	(c) Estimated income per year	Rs.	0	0.00							0	0.00
	(3) Activity- Poultry ,		0	0.00							0	0.00

	Broiler											
	(a) No. of SHG's	No.	0	0.00	10	2.48	10	2.48	2	0.55	22	5.50
	(b) No. of members	No.	0	0.00	99	0.00	99	0.00	22	0.00	220	0.00
	(c) Estimated income per year	Rs.	0	0.00							0	0.00
	(4) Black Smithy										0	0.00
	(a) No. of SHG's	No.	0	0.00	10	2.48	10	2.48	2	0.55	22	5.50
	(b) No. of members	No.	0	0.00	99	0.00	99	0.00	22	0.00	220	0.00
	(c) Estimated income per year	Rs.	0	0.00		0.00	0	0.00	0	0.00	0	0.00
	(5) Rope making										0	0.00
	(a) No. of SHG's	No.	0	0.00	10	2.48	10	2.48	2	0.55	22	5.50
	(b) No. of members	No.	0	0.00	99	0.00	99	0.00	22	0.00	220	0.00
	(c) Estimated income per year	Rs.	0	0.00							0	0.00
	(6) Tailoring										0	0.00
	(a) No. of SHG's	No.	0	0.00	10	2.48	10	2.48	2	0.55	22	5.50
	(b) No. of members	No.	0	0.00	99	0.00	99	0.00	22	0.00	220	0.00
	(c) Estimated income per year	Rs.	0	0.00		0.00	0	0.00	0	0.00	0	0.00
	(8) Vermi Composting										0	0.00
	(a) No. of SHG's	No.	0	0.00	9	2.36	9	2.36	2	0.53	21	5.25
	(b) No. of members	No.	0	0.00	95	0.00	95	0.00	21	0.00	210	0.00
	(c) Estimated income per year	Rs.	0	0.00							0	0.00
	(9) Food processing										0	0.00
	(a) No. of SHG's	No.	0	0.00	10	2.59	10	2.59	2	0.58	23	5.75
	(b) No. of members	No.	0	0.00	104	0.00	104	0.00	23	0.00	230	0.00
	(c) Estimated income per year	Rs.	0	0.00							0	0.00
	(13) Seed Bank										0	0.00
	(a) No. of SHG's	No.	0	0.00	11	2.80	11	2.80	2	0.62	24	6.22

	(b) No. of members	No.	0	0.00	108	0.00	108	0.00	24	0.00	240	0.00
	(c) Estimated income per year	Rs.	0	0.00							0	0.00
10	**Consolidation & Withdrawal Phase activities**		0	0.00	0	0.00	0	0.00	0	17.41	0	17.41
Grand Total											**6233 82**	**580.2 0**

Table 7.2: Year wise financial phasing (Rs in Lakh) Project IWMP-X, Banda- I, Banda, U.P.

Particulars	1st Year	2nd Year	3rd Year	4th Year	Total
Administrative Cost-10%	2.90	29.01	17.41	8.70	58.02
Monitering-1%	0.00	2.90	1.45	1.45	5.80
Evalution-1%	0.00	1.16	2.61	2.03	5.80
Entry Point Activity-4%	23.21	0.00	0.00	0.00	23.21
Institution & Capacity Building-5%	1.45	14.51	13.05	0.00	29.01
DPR-1%	5.80	0.00	0.00	0.00	5.80
Watershed Dev. Work-56%	0.00	162.46	97.47	64.98	324.91
Livelihood Activity-9%	0.00	23.50	23.50	5.22	52.22
Production System & Micro enterprises-10%	0.00	26.11	26.11	5.80	58.02
Consolidation-3%	0.00	0.00	0.00	17.41	17.41
Total	**33.36**	**259.64**	**181.60**	**105.60**	**580.20**

7.3 Details of Convergence

The details of convergence of different developmental schemes are given Chapter 5.

7.4 Benefit Cost Analysis

Benefit cost analysis for all micro-watershed and for the project were given in Table 7.3 and 7.4, respectively. The overall B:C ratio for pre and post project is 157 and 1.90, respectively,

Table 7.3: Micro-watershed wise benefit cost analysis of IWMP-X, Banda
Present Outcome (Crops)

S. No.	Name of Crop (Season wise)	Area (ha)	Production (quintal)	Productivity q/ha	Cost/ ha	Rate Rs/q	Gross Return Rs	Gross Return/ha	Total Cost Rs	Net Return	Net Return /ha	B:C Ratio
1	Urd	451.93	1310.59	2.9	10000	4800	6290813	13920	2169246	4121567	9120	1.39
2	Moong	181.13	470.93	2.6	9100	3300	1554060	8580	597715	956345	5280	0.94
3	Arhar	584.96	2807.81	4.8	13000	9000	25270307	43200	5264647	20005659	34200	3.32
4	Bajra	136.90	670.80	4.9	4000	1300	872044	6370	177968	694076	5070	1.59
5	Sorghum	760.02	4408.11	5.8	5600	2700	11901907	15660	2052053	9849854	12960	2.80
6	Til	85.22	153.39	1.8	7000	5000	766951	9000	426084	340867	4000	1.29
7	Paddy	214.06	2397.47	11.2	10000	2000	4794944	22400	428120	4366824	20400	2.24
	Total	**2414.21**	**12219.10**				**51451026**		**11115834**	**40335192**		
1	Wheat	868.44	14155.61	16.3	12400	1300	18402296	21190	1128975	17273321	19890	1.71
2	Barley	406.67	4148.03	10.2	8000	1600	6636854	16320	650672	5986182	14720	2.04
3	Masoor	1389.92	6671.62	4.8	10000	3400	22683494	16320	4725728	17957766	12920	1.63
4	Gram	311.38	1805.99	5.8	9000	3600	6501569	20880	1120960	5380609	17280	2.32
5	Field Pea	669.57	4620.02	6.9	8800	2400	11088056	16560	1606965	9481091	14160	1.88
	Total	**3645.98**	**31401.28**				**65312270**		**9233300**	**56078970**		1.58
	Cropping Intensity	106.87			Over All B:C	1.58						
	Cultivable Area (ha)	5670.60										
	Total Number of Farm Families in MWS	**4710**										
	Net Return per Household	11906.4										

Expected Outcome (Crops)

Name of Crop (Season wise)	Area (ha)	Production (quintal)	Productivity q/ha	Cost/ ha	Rate Rs/q	Gross Return Rs	Gross Return/ha	Total Cost Rs	Net Return	Net Return /ha	B:C Ratio
Urd	637.22	2039.09	3.2	10000	4800	9787637	15360	3058637	6729000	10560	1.54
Moong	255.39	740.62	2.9	9100	3300	2444058	9570	842779	1601280	6270	1.05
Arhar	824.79	4371.41	5.3	13000	9000	39342709	47700	7423153	31919556	38700	3.67
Bajra	193.03	1042.35	5.4	4000	1300	1355050	7020	250935	1104115	5720	1.76
Sorghum	1071.63	6858.42	6.4	5600	2700	18517726	17280	2893395	15624331	14580	3.09
Til	120.16	240.31	2	7000	5000	1201557	10000	600779	600779	5000	1.43
Paddy	301.82	3712.44	12.3	10000	2000	7424885	24600	603649	6821236	22600	2.46
Total	**3404.03**	**19004.64**				**80073621.28**		**15673325.34**	**64400295.94**		
Wheat	885.81	15856.02	17.9	12400	1300	20612829	23270	1151555	19461274	21970	1.88
Barley	414.80	4645.80	11.2	8000	1600	7433277	17920	663685	6769591	16320	2.24
Masoor	1417.72	7513.91	5.3	10000	3400	25547286	18020	4820243	20727043	14620	1.80
Gram	317.61	2032.67	6.4	9000	3600	7317628	23040	1143379	6174249	19440	2.56
Field Pea	682.96	5190.50	7.6	8800	2400	12457190	18240	1639104	10818086	15840	2.07
Total	**3718.90**	**35238.90**				**73368210**		**9417966**	**63950244**		1.80
Cropping Intensity	125.61			Over All B:C	1.80						
Cultivable Area (ha)	5670.60										
Total Number of Farm Families in MWS	**4710**										
Net Return per Household	13577.55										

Present Outcome (Livestock)

Particulars	Cows	Buffaloes	Goat	Bullocks
Total Animals in Micro watershed Area	2117	1209	4449	236
Milking Animals	800	500	1600	
Average Milk Production Lit. / day	1264	1930	512	
Average Milk Production /Animal/ day	1.58	3.86	0.32	
Sale of Milk per day (Rs) @ Rs 15/Lit	18960	28950	7680	
Average 150 day milking days & Goat 90 days in a year (Total Rs)	**2844000**	**4342500**	**691200**	
Meat Animals			2500	
Average rate of one kids Rs			2500	
Total Sale in a year Rs			**6250000**	
Working Animals (Bullocks)				236
One year work one agriculture fields 200 days @ 220/ day (One pair)				36000
Total Work value of all Draft animals				**4248000**
Total monetary worth (Rs.)	**2844000**	**4342500**	**6941200**	**4248000**
				18375700
Total Family				4710
Total Income/Family				3901.42
Total Expenditure / family				2500
B:C Ratio				1.6

Projected Outcome (Livestock)

Particulars	Cows	Buffaloes	Goat	Bullocks
Total Animals in Micro watershed Area	3000	1600	6000	350
Milking Animals	1300	700	2200	
Average Milk Production Lit. / day	2860	3780	1320	
Average Milk Production /Animal/ day	2.2	5.4	0.6	
Sale of Milk per day (Rs) @ Rs 15/Lit	42900	56700	19800	
Average 150 day milking days & Goat 90 days in a year (Total Rs)	**6435000**	**8505000**	**1782000**	
Meat Animals			3100	
Average rate of one kids Rs			2800	
Total Sale in a year Rs			**8680000**	
Working Animals (Bullocks)				350
One year work one agriculture fields 200 days @ 220/ day (One pair)				44000
Total Work value of all Draft animals				**7700000**
Total monetary worth (Rs.)	**6435000**	**8505000**	**10462000**	**7700000**
				33102000
Total Family				4710
Total Income/Family				7028.03
Total Expenditure / family				3500
B:C Ratio				2.01

Table 7.4 : Outcomes & Benefit cost analysis of IWMP-X, Banda

Net Income / Family	**Present**	**Projected**
Agriculture	11906	13578
Animal Husbandry	3901	7028
Total (Ag+AH)	**15808**	**20606**
Over All B:C of MWS		
Agriculture	1.58	1.80
Animal Husbandry	1.56	2.01
Over All B: C MWS	**1.57**	**1.90**

CHAPTER - 8

CONSOLIDATION AND WITHDRAWAL STRATEGY

8. Consolidation and Withdrawal Strategy

Success of any program depends on sustainability of the various watershed interventions and sustainability can only be achieved through active Success of any program depends on sustainability of the various watershed interventions and sustainability can only be achieved through active participation of community. Active participation and cooperation of community can be ensured by building their capacities through exposures and trainings. From the beginning emphasis will be on capacity building and empowerment of stakeholders. The Watershed Committee, SHGs, Area Groups, Users Group and other CBOs will be established, trained, and strengthened to continue development after withdrawal of PIA. By building economic activities through CBOs community participation will be sustained. The PR&D approach along with demand driven interventions will reduce dependency on subsidies. Contributions from the community will be ensured for the entire activities to develop sense of ownership and these contributions will be deposited to the account of Watershed Development Fund. Watershed Development Fund will also be strengthening through donations from the individual and institutions and the CBOs will be trained to run watershed as business model on sustainable basis. The tangible economic benefits along with empowerment and hand holding by PIA will empower the CBOs to develop and sustain the watershed activities after withdrawal of the PIA. Community organizations will withdraw the money from the WDF to maintain the asset created during the implementation phase. The consolidation phase will also include

- Writing of project completion report
- Documentation of success stories
- Making films, leaflets, bulletins and the lessons learnt.

  The expenditure will be done as per the Common Guidelines for Watershed Development Projects 2008.

  The completion report will reflect the development on following aspects:
- Productivity enhancement (increase in total productivity, seed replacement, farm mechanization, resources use and operational efficiency.
- Nutritional security (Production of diverse food commodities)
- Risk minimization (Integrated farming system, including diversification, water harvesting and protected cultivation, value addition and improved marketing)
- State of environment (Improvement in vegetative cover, hydrology and adoption of IPNM)
- Profitability (Loss preventing and cost reducing measures, value addition and agro-processing.)
- Livelihood security (skill enhancement capacity building, increased employment in agriculture and allied enterprises. Reduction in drudgery of farm women and out migration)

CHAPTER - 9

EXPECTED PROJECT OUTCOME

9.1 Employment Generation and Checking Migration

There had been very heavy migration from Bundelkhand region. During drought years, it is as high as 39% against an average migration rate of 11%, in other regions of Uttar Pradesh towards northern part of the country, specially the states of Delhi, Punjab and Haryana, as agriculture labors, factory workers, rickshaw pullers etc. The major reason attributed to high rate of migration is continuous drought in the region and absence of any other alternate livelihood opportunity, in spite of several anti-poverty programmes.

Due to watershed management the cropping intensity will be increased by around 18.5 per cent, in turn acreage in agricultural activities will be increased by about 900 ha. Therefore, an additional employment of about 90000 human-days will be generated annually. Therefore, no migration in search of livelihoods is expected after implementation of watershed programme.

9.2 Other Expected Outcome*

The following tangible benefits are expected after implementation of the project:

- Runoff will be reduced by about 30 per cent, however soil and nutrient loss may be reduced up to 40 per cent from the watershed.
- Irrigation intensity may be increased to 40 per cent from present 3 per cent life saving irrigation.
- Surface water in nallah may be available for more than 8 months against 4-5 months at present.
- Average ground water recharge of about 2-4 m may be easily obtained after implementation of the programme
- Productivity of crops may be increased by about 15-25 per cent
- Significant saving of seeds may be obtained through crop demonstration with improved package of practices
- During implementation phase about 2,70,000 human-days will be created through the soil and water conservation measures and crop/agroforestry interventions.
- The overall B C ratio of the project is estimated to be 1.90 as compared to the 1.57 in pre project scenario (detailed analysis is given in Chapter 7)

***Above mentioned outcomes are based on the meta analysis of 636 watershed projects across India support by various govt. deptt. and development agencies throughout the country done by ICRISAT, Hyderabad and practical experience of watershed management in Bundelkhand region.**

9.3 Questions to be answered

This project will answer the following questions :

1. Will the measures taken for water harvesting sufficient enough to recharge the perched water table?
2. Will the soil and water conservation practices be helpful in combating drought?
3. Will alternate land use such as agroforestry land use system result in self reliance/prosperity in drought prone areas?
4. Can the strategies based on watershed basis yield fruitful results?
5. Response of the villagers towards the project and their participation in sustaining developed resources after withdrawal of the project?
6. Will the formation of SHGs will help in savings and generation of self employment?
7. Will the watershed programmes improve the socio-economic conditions of the stake holders?
8. Will the watershed programme helps in capacity building of the stake holders for dissemination of various activities of watershed programme?
9. Will it sustain after project withdrawal?

9.4 Problems that could be solved as a results of this project/study

Following problems can be tackled in the proposed watershed :

1. Solving the problems of shortage of fuel, fodder, fruit and small timber requirement of villagers.
2. Creating water resources for ground water recharge availability of surface water for animal drinking and nistar purposes.
3. Increasing fertilizer consumption and improving NPK consumption ratio.
4. Optimizing crop productivity by putting more area under HYV and irrigation.
5. Increasing cropping intensity.
6. Promoting dairying through increased fodder availability.
7. Improving basic amenities and facilities like health, education, drinking water etc.
8. Increasing per capita income and thereby standard of living of farming community.
9. Increasing co-operative membership.
10. Increasing self employment.
11. Improving living standard of society.

ANNEXURE-I

BENEFICIARIES WISE DETAILS OF DEVELOPMENTAL ACTIVITIES

Village- Bachheura Block- Tindvaari Tehsil- Banda, Distt. Banda (2C1A7c2a)

Name of Work	Benefited area (ha)	Field No. / Khasara No.	Area of work		C.S. (Area)	Work Measurement	Rate	Total Cost (Rs.)	Manday Rs. 120/Labour	Name of Farmers
			Length	Width * Height						
SB1	1130	701	480	4.90+1.00*1.30/2	3.83	1838.4	41.23	75797.23	631.6436	Binda Prasad
SB2	16.4	1244	700	4.90+1.00*1.30/2	3.83	2681	41.23	110537.6	921.1469167	Indrpal
SB3	12.9	1250	730	4.90+1.00*1.30/2	2.88	2102.4	41.23	86681.95	722.3496	Deshraj, Ashok
SB4	8.69	1258	370	4.90+1.00*1.30/2	3.83	1417.1	41.23	58427.03	486.8919417	Ramakant
SB5	5.30	1273	300	4.90+1.00*1.30/2	2.88	864	41.23	35622.72	296.856	Dinesh Singh
SB6	8.22	1280	350	4.90+1.00*1.30/2	3.83	1340.5	41.23	55268.82	460.5734583	Rajkumar
SB7	8.93	1409	380	4.90+1.00*1.30/2	3.83	1455.4	41.23	60006.14	500.0511833	Rampyari
SB8	16.45	1407	700	4.90+1.00*1.30/2	3.83	2681	41.23	110537.6	921.1469167	Ramsajeevan
SB9	8.22	1392	350	4.90+1.00*1.30/2	3.83	1340.5	41.23	55268.82	460.5734583	Rajju Singh
SB10	17.15	1368	730	4.90+1.00*1.30/2	3.83	2795.9	41.23	115275	960.6246417	Sukhdev
SB14	10.57	1469	450	4.90+1.00*1.30/2	3.83	1723.5	41.23	71059.91	592.165875	Sukhdev
SB15	9.72	1471	550	4.90+1.00*1.30/2	2.88	1584	41.23	65308.32	544.236	Dayashankar
SB16	1.88	1444	80	4.90+1.00*1.30/2	3.83	306.4	41.23	12632.87	105.2739333	Chunbad
SB17	15.74	1450	670	4.90+1.00*1.30/2	3.83	2566.1	41.23	105800.3	881.6691917	Kalideen
SB18	18.80	1420	800	4.90+1.00*1.30/2	3.83	3064	41.23	126328.7	1052.739333	Deepak Singh
SB19	8.93	1423	380	4.90+1.00*1.30/2	3.83	1455.4	41.23	60006.14	500.0511833	Ramraj
SB20	19.97	1498	850	4.90+1.00*1.30/2	3.83	3255.5	41.23	134224.3	1118.535542	Ram Prasad
SB21	18.33	1482	780	4.90+1.00*1.30/2	3.83	2987.4	41.23	123170.5	1026.42085	Babu Prasad
SB22	15.74	1508	670	4.90+1.00*1.30/2	3.83	2566.1	41.23	105800.3	881.6691917	Ram Avtar
Total			**10320**			**38024.6**		**1567754**	**13064.61882**	

Village- Bachaura Block- Tindvaari Tehsil- Banda Distt. Banda

SB11	15.27	12	650	4.90+1.00*1.30/2	3.83	2489.5	41.23	102642.1	855.3507083	Natthu
SB12	19.97	60	850	4.90+1.00*1.30/2	3.83	3255.5	41.23	134224.3	1118.535542	Sitaram
SB13	7.05	33	300	4.90+1.00*1.30/2	3.83	1149	41.23	47373.27	394.77725	Gaurishankar
SB28	12.45	230	530	4.90+1.00*1.30/2	3.83	2029.9	41.23	83692.78	697.4398083	Mariya
SB29	8.22	39	350	4.90+1.00*1.30/2	3.83	1340.5	41.23	55268.82	460.5734583	Chandrpal
CD2	9.20	161	120		12.5	1500	41.23	61845	515.375	Nandu
CD3	9.20	168	120		12.5	1500	41.23	61845	515.375	Binda

Village- Pipri Block- Tindvaari Tehsil- Banda, Distt. Banda

SB23	10.60	25	600	4.90+1.00*1.30/2	2.88	1728	41.23	71245.44	593.712	Binda Prasad
SB24	7.95	83	450	4.90+1.00*1.30/2	2.88	1296	41.23	53434.08	445.284	Badri
SB25	7.95	94	450	4.90+1.00*1.30/2	2.88	1296	41.23	53434.08	445.284	Anil Kumar
SB26	7.95	46	450	4.90+1.00*1.30/2	2.88	1296	41.23	53434.08	445.284	Kamata Prasad
SB27	14.14	46	800	4.90+1.00*1.30/2	2.88	2304	41.23	94993.92	791.616	Kamata Prasad
CD5	9.63	2	100		13.5	1350	47.96	64746	539.55	Avdesh Kumar

Village- Barethi Askaran Block- Tindvaari Tehsil- Banda, Distt. Banda

SB30	7.07	83	400	4.90+1.00*1.30/2	2.88	1152	41.23	47496.96	395.808	Raghuveer
SB31	7.07	101	400	4.90+1.00*1.30/2	2.88	1152	41.23	47496.96	395.808	Shivnarayan
SB32	6.18	129	350	4.90+1.00*1.30/2	2.88	1008	41.23	41559.84	346.332	Krishn Bihari
CD1	14.99	145	150		14	2100	47.96	100716	839.3	Ramdas
CD2	16.79	168	168		14	2352	47.96	112801.9	940.016	Indrpal

Village- Khapihan Kalan Block- Tindvaari, Tehsil- Banda, Distt. Banda (2C1A7c2c)

Name of Work	Benefited area (ha)	Field No. / Khasara No.	Area of work		C.S. (Area)	Work Measurement	Rate	Total Cost (Rs.)	Manday Rs. 120/Labour
			Length	Width * Height					
SB1	11.41	3956 to 3960	500	4.60+2.50*1.05/2	3.72	1860	41.23	76687.8	639.065
SB2	8.83	4000 to 4006, 3993, 3989, 88	500	4.20+0.60*1.20/2	2.88	1440	41.23	59371.2	494.76
SB3	37.7	4011, 12, 13, 15, 24, 4026	1000	4.60+2.50*1.05/2	3.72	3720	41.23	153375.6	1278.13
SB4A	18.26	4154, 55, 57, 58, 4161, 60, 4034	800	4.60+2.50*1.05/2	3.72	2976	41.23	122700.48	1022.504
SB4B	15.9	4033, 4467, 4472, 4473, 4478	900	4.20+0.50*1.25/2	2.88	2592	41.23	106868.16	890.568
SB5A	37.58	4424, 4426, 4421, 4436, 4437, 4439, 4456, 4457	1300	4.20+0.50*1.25/2	2.88	3744	41.23	154365.12	1286.376
SB5B	12.36	4489, 4487, 4482	700	4.20+0.50*1.25/2	2.88	2016	41.23	83119.68	692.664
SB6	47.96	4450, 51, 46, 45, 44, 4443, 62, 60, 53, 64	2100	4.60+2.50*1.05/2	3.72	7812	41.23	322088.76	2684.073

Village- Niwaich Block- Tindvaari Tehsil- Banda, Distt. Banda

SB7	13	1086, 1122, 1121	960	2.70+0.60*1.05/2	1.73	1660.8	41.23	68474.784	570.6232

Village- Paprenda Block- Tindvaari Tehsil- Banda, Distt. Banda

SB8A	4.25	193	400	2.70+0.60*1.05/2	1.73	692	41.23	28531.16	237.7596667
SB8B	10.4	172, 168, 175, 238, 244	980	2.70+0.60*1.05/2	1.73	1695.4	41.23	69901.342	582.5111833
SB9A	4.07	126, 125, 97, 96	510	2.70+0.60*1.05/2	1.73	882.3	41.23	36377.229	303.143575
SB9B	13.37	104, 103, 298, 297, 288, 281, 270	1260	2.70+0.60*1.05/2	1.73	2179.8	41.23	89873.154	748.94295
SB10A	38.14	451, 456, 455, 462, 63, 35, 40, 41, 442	1420	4.60+50*1.05/2	2.67	3791.4	41.23	156319.422	1302.66185
SB10B	33.88	399, 402, 420, 2627, 429, 33, 32	1160	4.60+50*1.05/2	2.67	3097.2	41.23	127697.556	1064.1463
SB10C	28.64	393, 380, 381, 83	840	4.60+50*1.05/2	2.67	2242.8	41.23	92470.644	770.5887
SB11	29.56	25, 23, 21	560		4.27	2391.2	41.23	98589.176	821.5764667
SB12	23.79	31, 1310, 1311, 1309	340		4.27	1451.8	41.23	59857.714	498.8142833

SB13	35.31	461, 489, 482, 484	780		4.27	3330.6	41.23	137320.638	1144.33865
SB14	46.84	406, 635, 634, 632	1220		4.27	5209.4	41.23	214783.562	1789.863017
SB15	83	956, 908, 905, 1958, 1051, 1972	2600		4.27	11102	41.23	457735.46	3814.462167
SB16	80.75	2556, 2554, 2551, 2449, 2502	1600		4.27	6832	41.23	281683.36	2347.361333
PB1	36.56	2445, 44, 28, 29, 30, 2436, 2044, 41, 33, 2034	1860		2	3720	39.16	145675.2	1213.96
PB2	38.96	2059, 35, 63, 2116, 2117, 2105, 2098	1840		2	3680	39.16	144108.8	1200.906667
PB3	10.37	357, 859, 854, 851, 858	890		2	1780	39.16	69704.8	580.8733333
PB4	7	684, , 707, 708, 709, 12, 13	600		2	1200	39.16	46992	391.6
PB5	9.32	2178, 2164, 2185, 2198	800		2	1600	39.16	62656	522.1333333
PB6	11.17	2249, 50, 2326, 2321	960		2	1920	39.16	75187.2	626.56
CD1	26.11	751, 745, 741, 732	260	6.25+1.30*1.65/2	6.22	1617.2	43.19	69846.868	582.0572333
					Dugg Welling	1300	69.75	90675	755.625
					Cleaning	1625	3.4	5525	46.04166667
CD2	28.34	2153, 2162, 2169	240	6.70+1.30*1.80/2	7.2	1728	44.34	76619.52	638.496
					Dugg Welling	1200	69.75	83700	697.5
					Cleaning	1608	3.4	5467.2	45.56
CD3	29.32	2363, 2345, 41, 2331, 2330	240	8.04+1.40*1.80/2	8.5	2040	44.34	90453.6	753.78
					Dugg Welling	1200	69.75	83700	697.5
					Cleaning	1920	3.4	6528	54.4
WHB	54.11	2404, 2409, 2421, 22	280	9.30+2.10*2.10/2	11.99	3357.2	46.06	154632.632	1288.605267
						1400	69.75	97650	813.75
						2604	3.4	8853.6	73.78

Village- Atarhat Block- Tindvaari Tehsil- Banda, Distt. Banda (2C1A7c2b)

Name of Work	Benefited area (ha)	Field No. / Khasara No.	Area of work		C.S. (Area)	Work Measurement	Rate	Total Cost (Rs.)	Manday Rs. 120/Labour	Name of Farmers
			Length	Width * Height						
SB1	13.25	415	750		2.88	2160	41.23	89056.8	742.14	Gajva
SB2	15.02	696	850		2.88	2448	41.23	100931	841.092	Kamta
SB3	15.27	345	650		3.83	2489.5	41.23	102642	855.351	Ramasre
SB4	15.27	358	650		3.83	2489.5	41.23	102642	855.351	Surja
SB5	11.75	363	500		3.83	1915	41.23	78955.5	657.962	Rammilan
SB6	11.28	379	480		3.83	1838.4	41.23	75797.2	631.644	Ram Snehi
SB7	9.40	436	400		3.83	1532	41.23	63164.4	526.37	Padma
SB8	9.40	635	400		3.83	1532	41.23	63164.4	526.37	Dinesh
SB9	8.22	441	350		3.83	1340.5	41.23	55268.8	460.573	Rmanarayan
SB10	8.22	670	350		3.83	1340.5	41.23	55268.8	460.573	Shiv Prasad
SB11	6.54	640	370		2.88	1065.6	41.23	43934.7	366.122	Ramnarayan
SB12	4.95	669	280		2.88	806.4	41.23	33247.9	277.066	Shiv Charan
SB13	15.02	1284	850		2.88	2448	41.23	100931	841.092	Amarjeet
SB14	5.30	276	300		2.88	864	41.23	35622.7	296.856	Rajaram
SB15	8.22	1321	350		3.83	1340.5	41.23	55268.8	460.573	Ramakant
SB16	11.28	1309	480		3.83	1838.4	41.23	75797.2	631.644	Dayashnkar
SB17	8.22	1309	350		3.83	1340.5	41.23	55268.8	460.573	Muluva
SB18	11.28	1332	480		3.83	1838.4	41.23	75797.2	631.644	Rajaram
SB19	13.08	3288	740		2.88	2131.2	41.23	87869.4	732.245	Rajaram
SB20	9.72	3188	550		2.88	1584	41.23	65308.3	544.236	Ramakant
SB21	6.71	3289	380		2.88	1094.4	41.23	45122.1	376.018	Amarjeet

Village- Paprenda Block- Tindvaari Tehsil- Banda, Distt. Banda

CD1	10.79	2894	90		16.83	1514.7	47.89	72539	604.492	Bacchu
CD2	9.98	2914	100		14	1400	47.89	67046	558.717	Ramsakhi
CD3	8.25	3022	100		12.5	1250	44.33	55412.5	461.771	Ram Singh
CD4	5.28	3017	80		10	800	44.33	35464	295.533	Ram Bihari
CD5	10.79	2996	90		16.83	1514.7	47.89	72539	604.492	Deepak
CD6	12.12	3006	100		17	1700	47.89	81413	678.442	Amar Singh
CD7	10.79	3489	90		16.83	1514.7	47.89	72539	604.492	Parsuva
CD8	12.12	3499	100		17	1700	47.89	81413	678.442	Ram Kumar
CD9	8.25	2258	100		12.5	1250	44.33	55412.5	461.771	Ramsajeevan
CD10	8.25	2245	100		12.5	1250	44.33	55412.5	461.771	Subedar
CD11	12.12	2234	100		17	1700	47.89	81413	678.442	Shiv Prasad
CD12	11.17	3021	95		16.5	1567.5	47.89	75067.6	625.563	Shri Ram
CD13	10.79	3046	90		16.83	1514.7	47.89	72539	604.492	Nathuva
WHB1	1.56	3645	100		2.55	255	41.23	10513.7	87.6138	Shivram
WHB2	1.75	3124	110		2.6	286	41.23	11791.8	98.2648	Bacchu
WHB3	1.75	3137	110		2.6	286	41.23	11791.8	98.2648	Shri Krishn
WHB4	2.07	3134	130		2.6	338	41.23	13935.7	116.131	Ramasre

Village- Karahiya Block- Tindvaari Tehsil- Banda, Distt. Banda (2C1A7c2e)

Name of Work	Benefited area (ha)	Field No. / Khasara No.	Area of work Length	Width * Height	C.S. (Area)	Work Measurement	Rate	Total Cost (Rs.)	Manday Rs. 120/Labour
SB1	51.33	1 TO 11, 14, 15	1460	4.80+260/2*1.10	4.07	5942.2	41.23	244996.906	2041.640883
SB2	28.9	103 TO 109, 113	860	4.80+260/2*1.10	4.07	3500.2	41.23	144313.246	1202.610383
SB3	39.85	120 TO 122, 137	1000	4.80+260/2*1.10	4.07	4070	41.23	167806.1	1398.384167
SB4	29.92	128, 130, 122	700	4.80+260/2*1.10	4.07	2849	41.23	117464.27	978.8689167
Pucca work								**333420**	
Total	**150**		**4020**			**16361.4**		**1008000.522**	

Village- Karihiya

SB5	42.76	182, 185, 228, 229	1420	3.50+2.60/2*1.05	3.2	4544	41.23	187349.12	1561.242667
SB6	62	127, 128, 255, 257	2400	3.50+2.60/2*1.05	3.2	7680	41.23	316646.4	2638.72
SB7	45.24	81 TO 83, 99, 101, 103	1600	3.50+2.60/2*1.05	3.2	5120	41.23	211097.6	1759.146667
Pucca work								**715092**	
Total	**150**		**5420**			**17344**		**1430185.12**	

Village- Luktra

SB8	25		980	3.50+2.60/2*1.05	3.2	3136	41.23	129297.28	1077.477333	
Pucca work								**38703**		
Total	**25**		**980**			**3136**		**168000.28**		

Village- Khaptiha Kala

SB9	39.85	5800 TO 5804, 5787, 5788	1000	4.80+2.60/2*1.10	4.07	4070	41.23	167806.1	1398.384167	
SB10	67.32	5752 TO 5764, 5722 TO 5724	2100	4.80+2.60/2*1.10	4.07	8547	41.23	352392.81	2936.60675	
SB11	39.35	5514, 5516, 5485, 5486	980	4.80+2.60/2*1.10	4.07	3988.6	41.23	164449.978	1370.416483	
SB12	64.92	5686, 5687, 5492, 5493	2600	4.80+2.60/2*1.10	4.07	10582	41.23	436295.86	3635.798833	
SB13	87.93	5667, 5671, 5225, 5227	1980	4.80+2.60/2*1.10	4.07	8058.6	41.23	332256.078	2768.80065	
Pucca work								**558634**		
Total	**299.4**		**8660**			**35246.2**		**2011834.826**		
WHB1	61.5	5601, 5697, 5588	275		15.06	4141.5	49.37	204465.855	1703.882125	
belling				275*5		1375	0.07	95.90625		
cleaning				275*9.21		2532.75	3.4	8611.35		
Pucca work								**200000**		
Total	**61.5**		**275**			**4141.5**		**413173.1113**		

Village- Paprenda

PB1	27.73	1785, 1774, 1773, 1640, 1636, 1650	2380		2	4760	39.16	186401.6	1553.346667	
PB2	29.36	1801, 2523, 1802, 1803, 1633, 32, 31	2520		2	5040	39.16	197366.4	1644.72	
PB3	26.57	1846, 1842, 43, 1916, 15, 27	2280		2	4560	39.16	178569.6	1488.08	
PB4	8.76	1541, 1519, 1518, 1539	750		2	1500	39.16	58740	489.5	
Total	92.42		7930			15860		621077.6		
CD1	13.88	1529, 1530, 1539	275		7.5	2062.5	41.96	86542.5	721.1875	
belling				275*5		1375	0.07	95.90625		
cleaning				275*7.60		2090	3.4	7106		
Total	13.88		275			2062.5		93744.40625		
CD2	9.43	1152, 1169, 1172	135		9.86	1331.1	44.34	59020.974	491.84145	
belling				135*5		675	0.07	47.08125		
cleaning				135*9.50		1282.5	3.4	4360.5		
Total	9.43		135			1331.1		63428.55525		
CD3	11.88	1513, 1550, 1512	170		9.86	1676.2	44.34	74322.708	619.3559	
belling				170*5		850	0.07	59.2875		
cleaning				170*9.50		1615	3.4	5491		
Total	11.88		170			1676.2		79872.9955		
CD4	30.99	1475, 1476	125		11.76	1470	44.34	65179.8	543.165	
belling				125*5		625	0.07	43.59375		
cleaning				125*9		1125	3.4	3825		
Total	30.99		125			1470		69048.39375		

Pucca work								139094		
G. Total	66.18		705			6539.8		445188.3508		
WHB2	61.48	1219, 1220, 1261, 1262, 1255, 1256	275		15.06	4141.5	49.37	204465.855	1703.882125	
				275*5		1375	0.07	95.90625		
				275*9.21		2532.75	3.4	8611.35		
Pucca work								213168		
Total	61.48		275			4141.5		426341.1113		

Village- Gajani Block- Tindvaari Tehsil- Banda, Distt. Banda (2C1A7c1a)

Name of Work	Benefited area (ha)	Field No. / Khasara No.	Area of work Length	Width * Height	C.S. (Area)	Work Measurement	Rate	Total Cost (Rs.)	Manday Rs. 120/Labour	Name of Farmers
SB21		62	500		2.88	1440	41.23	59371.2	494.76	Brajbihari
SB22		227	750		2.88	2160	41.23	89056.8	742.14	Mahraj
SB23		135	1050		2.88	3024	41.23	124679.52	1038.996	Jayram
SB24		349	600		2.88	1728	41.23	71245.44	593.712	Vedprakash
SB25		589	700		2.88	2016	41.23	83119.68	692.664	Vedprakash
SB26		696	1000		2.88	2880	41.23	118742.4	989.52	Rohit
SB27		815	800		2.88	2304	41.23	94993.92	791.616	Ramvahori
SB28		820	700		2.88	2016	41.23	83119.68	692.664	Kedarnath
Total			**6100**			**17568**		**724328.64**		

PB3			900		2.5	2250	39.16	88110	734.25	Arun kumar
PB4			800		2.5	2000	39.16	78320	652.666667	Vidasagar
Total			**1700**			**4250**		**166430**		

Village- Gajni

SB2		3	700		2.88	2016	41.23	83119.68	692.664	Darvari
SB14		23	520		2.88	1497.6	41.23	61746.048	514.5504	Vintu
SB15		119	900		2.88	2592	41.23	106868.16	890.568	Kedar prasad
SB16		391	800		2.88	2304	41.23	94993.92	791.616	Shiv sahay
SB17		379	400		2.88	1152	41.23	47496.96	395.808	Saty narayan
SB18		315	1120		2.88	3225.6	41.23	132991.488	1108.2624	Kalika
SB19		334	600		2.88	1728	41.23	71245.44	593.712	Laldiman
SB20		200	650		2.88	1872	41.23	77182.56	643.188	Nathuva
Total			**5690**			**16387.2**		**675644.256**		
PB1			1500		2.5	3750	39.16	146850	1223.75	Sakoniya
PB2			750		2.5	1875	39.16	73425	611.875	Shri Krashna
Total			**2250**			**5625**		**220275**		
CD2			120		23.67	2840.4	49.37	140230.548	1168.5879	Basnta
Total			**120**			**2840.4**		**140230.548**		
WHB1		237	150		25.13	3769.5	49.37	186100.215	1550.83513	Devicharan

Village- Atrahat

SB1		906	600		2.88	1728	41.23	71245.44	593.712	Desraj
Total			**600**			**1728**		**71245.44**		

Village- Amraiya

SB23		128	1250		2.88	3600	41.23	148428	1236.9	Bhau prasad
Total			**1250**			**3600**		**148428**		

Village- Bichhavahi

SB3		653	400		2.88	1152	41.23	47496.96	395.808	Mithlesh
SB4		651	500		2.88	1440	41.23	59371.2	494.76	Sudarshan
SB5		658	400		2.88	1152	41.23	47496.96	395.808	Ramsanehi
SB6		620	1500		2.88	4320	41.23	178113.6	1484.28	Rammurti
SB7		762	700		2.88	2016	41.23	83119.68	692.664	
Total			**3500**			**10080**		**415598.4**		
CD1			130		23.67	3077.1	49.37	151916.427	1265.97023	Jagdish
Total			**130**			**3077.1**		**151916.427**		

Village- Kumhaoli

SB8			1000		2.88	2880	41.23	118742.4	989.52	Rakesh
SB9			300		2.88	864	41.23	35622.72	296.856	Visheshar
SB10			700		2.88	2016	41.23	83119.68	692.664	Chandan Singh
SB11			850		2.88	2448	41.23	100931.04	841.092	Kamta
SB12			600		2.88	1728	41.23	71245.44	593.712	Girdhari
SB13			650		2.88	1872	41.23	77182.56	643.188	Ramkrapal
Total			**4100**			**11808**		**486843.84**		
CD3		381	120		19.33	2319.6	49.37	114518.652	954.3221	Shyamlal
CD4		392	120		25	3000	49.37	148110	1234.25	Devendra
CD5		395	100		18	1800	49.37	88866	740.55	Devendra
Total			**340**			**7119.6**		**351494.652**		

Village- Khaptiha Kalan Block- Tindvaari Tehsil- Banda, Distt. Banda (2C1B5a2f)

Name of Work	Benefited area (ha)	Field No. / Khasara No.	Area of work	Width * Height	C.S. (Area)	Work Measurement	Rate	Total Cost (Rs.)	Manday Rs. 120/Labour
SB1	20.47	4181 to 4185, 4187, 4188	820		4.07	3337.4	41.23	137601	1146.675
SB2	50.58	4185, 4179, 4178, 4164, 4168	1510		4.07	6145.7	41.23	253387.21	2111.56
SB3	46.34	4130, 4138, 4139	1260		4.07	5128.2	41.23	211435.69	1761.964
SB4	8.3	4001, 4002, 4003, 4006	470		2.88	1353.6	41.23	55808.928	465.0744
SB5	34.91	4082, 4079, 4070, 4069	1260		2.88	3628.8	41.23	149615.42	1246.795
SB6	17.2	4112, 4113, 4117	540		4.07	2197.8	41.23	90615.294	755.1275
SB7	12.95	4106, 4100	370		4.07	1505.9	41.23	62088.257	517.4021
SB8	23.47	4098, 4087, 4096	940		4.07	3825.8	41.23	157737.73	1314.481
SB9	46	4054, 4056, 4065, 4066	1570		4.07	6389.9	41.23	263455.58	2195.463
SB10	19.79	4037, 4039, 4040 to 4047	1120		2.88	3225.6	41.23	132991.49	1108.262

SB11	11.48	3942 to 3945, 3951, 3950	460		4.07	1872.2	41.23	77190.806	643.2567
SB12	9.18	2680, 2681, 2606, 2685	520		2.88	1497.6	41.23	61746.048	514.5504
SB13	20.75	2628, 2656, 2689, 2607	720		4.07	2930.4	41.23	120820.39	1006.837
SB14	20.22	2695, 2628, 388	810		4.07	3296.7	41.23	135922.94	1132.691
SB15	2.12	2168, 2164, 2173	110		2.88	316.8	41.23	13061.664	108.8472
Pucca work								**385341**	
Total	**343.76**		**12480**			**46652.4**		**2308819.5**	
CD1	13.3	2562	110		17.73	1950.3	49.37	96286.311	802.3859
				110*5		550	0.07	38.5	
				110*11.81		1299.1	3.4	4416.94	
Total	**13.3**		**110**			**1950.3**		**100741.75**	
CD2	28.42	2558	125		16.03	2003.75	49.37	98925.138	824.3761
				125*5		625	0.07	43.75	
				125*9.88		1235	3.4	4199	
Total	**28.42**		**125**			**2003.75**		**103167.89**	
CD3	6.01	2780	60		17.06	1023.6	47.96	49091.856	409.0988
				60*5		300	0.07	21	
				60*13.06		783.6	3.4	2664.24	
Total	**6.01**		**60**			**1023.6**		**51777.096**	
CD4	13.56	2805, 2545, 2788	155		14.76	2287.8	47.96	109722.89	914.3574
				155*5		775	0.07	54.25	
				155*10.29		1594.95	3.4	5422.83	
Total	**13.56**		**155**			**2287.8**		**115199.97**	
CD5	14.9	2482	120		15.52	1862.4	49.37	91946.688	766.2224
				120*5		600	0.07	42	
				120*9.46		1135.2	3.4	3859.68	
Total	**14.9**		**120**			**1862.4**		**95848.368**	
CD6	20.99	2446, 2441, 2439	120		15.64	1876.8	49.37	92657.616	772.1468
				120*5		600	0.07	42	
				120*9.56		1147.2	3.4	3900.48	

Total	**20.99**		**120**			**1876.8**		**96600.096**	
CD7	46.6		275		15.06	4141.5	49.37	204465.86	1703.882
				275*5		1375	0.07	96.25	
				275*9.21		2532.75	3.4	8611.35	
Total	**46.6**		**275**			**4141.5**		**213173.46**	
CD8	15.31		175		14.56	2548	47.96	122202.08	1018.351
				175*5		875	0.07	61.25	
				175*10.36		1813	3.4	6164.2	
Total	**15.31**		**175**			**2548**		**128427.53**	
CD9	13.54	2180, 2384	125		16.03	2003.75	49.37	98925.138	824.3761
				125*5		625	0.07	43.75	
				125*9.88		1235	3.4	4199	
Total	**13.54**		**125**			**2003.75**		**103167.89**	
CD10	34.48	2178, 2220	130		19.6	2548	49.37	125794.76	1048.29
				130*5		650	0.07	45.5	
				130*13.30		1729	3.4	5878.6	
Total	**34.48**		**130**			**2548**		**131718.86**	
CD11	22.3	1996, 2131	90		31.5	2835	49.37	139963.95	1166.366
				90*5		450	0.07	31.5	
				90*16.38		1474.2	3.4	5012.28	
Total	**22.3**		**90**			**2835**		**145007.73**	
CD12	5.94	2132	50		16.36	818	49.37	40384.66	336.5388
				50*5		250	0.07	17.5	
				50*13.09		654.5	3.4	2225.3	
Total	**5.94**		**50**			**818**		**42627.46**	
CD13	14.07	2018, 2049	50		32.73	1636.5	49.37	80794.005	673.2834
				50*5		250	0.07	17.5	
				50*15.35		767.5	3.4	2609.5	
Total	**14.07**		**50**			**1636.5**		**83421.005**	
CD14	24.08	2118, 2121, 2123	130		16.96	2204.8	49.37	108850.98	907.0915

				130*5		650	0.07	45.5	
				130*11.87		1543.1	3.4	5246.54	
Total	**24.08**		**130**			**2204.8**		**114143.02**	
CD15	19	2068, 2153, 2154	90		28.79	2591.1	49.37	127922.61	1066.022
				90*5		450	0.07	31.5	
				90*18.21		1638.9	3.4	5572.26	
Total	**19**		**90**			**2591.1**		**133526.37**	
CD16	20.86	2036, 1248	95		27.72	2633.4	49.37	130010.96	1083.425
				95*5		475	0.07	33.25	
				95*13.80		1311	3.4	4457.4	
Total	**20.86**		**95**			**2633.4**		**134501.61**	
CD17	35.33	1242	90		27.72	2494.8	49.37	123168.28	1026.402
				90*5		450	0.07	31.5	
				90*13.80		1242	3.4	4222.8	
Total	**35.33**		**90**			**2494.8**		**127422.58**	
CD18	13.99	2907, 2880, 2873	90		17.95	1615.5	49.37	79757.235	664.6436
				90*5		450	0.07	31.5	
				90*11.53		1037.7	3.4	3528.18	
Total	**13.99**		**90**			**1615.5**		**83316.915**	
CD19	8.49	2890, 2891, 2930	70		20.06	1404.2	49.37	69325.354	577.7113
				70*5		350	0.07	24.5	
				70*14.32		1002.4	3.4	3408.16	
Total	**8.49**		**70**			**1404.2**		**72758.014**	

CD20	28.28	2611	65		27.29	1773.85	49.37	87574.975	729.7915
				65*5		325	0.07	22.75	
				65*17.20		1118	3.4	3801.2	
Total	**28.28**		**65**			**1773.85**		**91398.925**	
CD21	10.26	2606, 2607	100		17.56	1756	49.37	86693.72	722.4477
				100*5		500	0.07	35	
				100*13.3		1330	3.4	4522	
Total	**10.26**		**100**			**1756**		**91250.72**	
CD22	43.84	2578	225		21.99	4947.75	49.37	244270.42	2035.587
				225*5		1125	0.07	78.75	
				255*17.29		4408.95	3.4	14990.43	
Total	**43.84**		**225**			**4947.75**		**259339.6**	
CD23	14.74	2609, 2610	115		18.88	2171.2	49.37	107192.14	893.2679
				115*5		575	0.07	40.25	
				115*13.42		1543.3	3.4	5247.22	
Total	**14.74**		**115**			**2171.2**		**112479.61**	
CD24	6.68	2622, 2696	80		11.88	950.4	49.37	46921.248	391.0104
				80*5		400	0.07	28	
				80*11.33		906.4	3.4	3081.76	
Total	**6.68**		**80**			**950.4**		**50031.008**	
Pucca work								**772000**	
G. Total	**474.97**		**2640**			**52078.4**		**3337847.5**	
WHB1	12.87	2818, 2820	110		15.06	1656.6	49.37	81786.342	681.5529
				110*5		550	0.07	38.5	
				110*9.21		1013.1	3.4	3444.54	
Total	**12.87**		**110**			**1656.6**		**85269.382**	
WHB2	78.08	1201, 1204, 1198, 2066, 2064	230		29.72	6835.6	49.37	337473.57	2812.28
				230*5		1150	0.07	80.5	
				230*14.80		3404	3.4	11573.6	

Total	**78.08**		**230**			**6835.6**		**349127.67**	
Pucca work								**175606**	
G. Total	**90.95**		**340**			**8492.2**		**610003.05**	

ANNEXURE-II
LIVELIHOOD ACTION PLAN

Annaual Action Plan for Livelihood (Physical & Financial)

Project - IWMP-X			**PIA-Soil Conservation Unit, Banda-I**						**District-Banda**			
S. No	**Physical and financial targets**	**Unit**	**First Year 2011-12**		**Second Year 2012-13**		**Third Year 2013-14**		**Fourth Year 2014-15**		**Total Project**	
			Physical	**Financial**	**Physical**	**Financial**	**Physical**	**Financial**	**Physical**	**Financial**	**Physical**	**Financial**
	Livelihood activities through SHG's										0	0.00
	(1) Activity Goatary										0	0.00
	(a) No. of SHG's	No.	0	0.00	12	2.93	12	2.93	3	0.65	26	6.50
	(b) No. of members	No.	0	0.00	117	0.00	117	0.00	26	0.00	260	0.00
	(c) Estimated income per year	Rs.	0	0.00							0	0.00
	(2) Activity- Back Yard Poultry		0	0.00							0	0.00
	(a) No. of SHG's	No.	0	0.00	12	2.93	12	2.93	3	0.65	26	6.50
	(b) No. of members	No.	0	0.00	117	0.00	117	0.00	26	0.00	260	0.00
	(c) Estimated income per year	Rs.	0	0.00							0	0.00
	(3) Activity- Poultry , Broiler		0	0.00							0	0.00
	(a) No. of SHG's	No.	0	0.00	10	2.48	10	2.48	2	0.55	22	5.50
	(b) No. of members	No.	0	0.00	99	0.00	99	0.00	22	0.00	220	0.00
	(c) Estimated income per year	Rs.	0	0.00							0	0.00

	(4) Black Smithy										0	0.00
	(a) No. of SHG's	No.	0	0.00	10	2.48	10	2.48	2	0.55	22	5.50
	(b) No. of members	No.	0	0.00	99	0.00	99	0.00	22	0.00	220	0.00
	(c) Estimated income per year	Rs.	0	0.00		0.00	0	0.00	0	0.00	0	0.00
	(5) Rope making										0	0.00
	(a) No. of SHG's	No.	0	0.00	10	2.48	10	2.48	2	0.55	22	5.50
	(b) No. of members	No.	0	0.00	99	0.00	99	0.00	22	0.00	220	0.00
	(c) Estimated income per year	Rs.	0	0.00							0	0.00
	(6) Tailoring										0	0.00
	(a) No. of SHG's	No.	0	0.00	10	2.48	10	2.48	2	0.55	22	5.50
	(b) No. of members	No.	0	0.00	99	0.00	99	0.00	22	0.00	220	0.00
	(c) Estimated income per year	Rs.	0	0.00		0.00	0	0.00	0	0.00	0	0.00
	(8) Vermi Composting										0	0.00
	(a) No. of SHG's	No.	0	0.00	9	2.36	9	2.36	2	0.53	21	5.25
	(b) No. of members	No.	0	0.00	95	0.00	95	0.00	21	0.00	210	0.00
	(c) Estimated income per year	Rs.	0	0.00							0	0.00
	(9) Food processing										0	0.00
	(a) No. of SHG's	No.	0	0.00	10	2.59	10	2.59	2	0.58	23	5.75
	(b) No. of members	No.	0	0.00	104	0.00	104	0.00	23	0.00	230	0.00
	(c) Estimated income per year	Rs.	0	0.00							0	0.00
	(13) Seed Bank										0	0.00
	(a) No. of SHG's	No.	0	0.00	11	2.80	11	2.80	2	0.62	24	6.22
	(b) No. of members	No.	0	0.00	108	0.00	108	0.00	24	0.00	240	0.00
	(c) Estimated income per year	Rs.	0	0.00							0	0.00

Livelihood Option for Village Groups / Community
Input supplied to Interested Groups/ SHGs

Sr. No.	Name of Activity *	Name of input	Quantity/	Rate	No of IG / SHGs	Total Amount (Rs)
1	Organic complex	Red worms *(Eisinia fetida)* *NADEP*	2 q 10 Nos	25000 5000	4 (40 FF)	100000.00
2	Goat kids	Kids	40 Nos	1200	2 (20 FF)	48000.00
		Adult	02	2500		5000.00
3	Goat rearing	Female	10 Nos	3000	1 (10 FF)	30000.00
		Adult	01	3000		3000.00
4	Motor / Diesel repairing	Tool Kit	All tools	25000	1	25000.00
5	Masala Grinding	Pulvelizer	02	37000	2 (20 FF)	74000.00
6	Oil Expeller	Oil Expeller	01	84000	1 (10 FF)	84000.00
7	Poultry (Broiler)	Chicks	1000	25 per chicks	1 (10 FF)	25000.00
8	Wooden furniture	Instruments	01	61000	1 (10 FF)	61000.00
9	Mini Dal Mill	Machine	01	42000	1 (10 FF)	42000.00
10	Dairy	Buffaloes / Cows	10	25000	1 (10 FF)	250000.00
11	Back yard Poultry	Chicks	2000	18	2 (20 FF)	36000.00
12	Linseed rope making	Rope making machine	01	35000	1 (10 FF)	35000.00
13	Organic production	Registration	100 ha	6000	5	120000.00
14	Tailoring	Sieving Machine	5 in 01 SHG	25000	2	25000.00

Note: Maximum Seed Money will be Rs 25000/- for one SHG / Individual. Repayment limit up to 18 months.

ANNEXURE-III

1. Annual Action Plan for Agriculture Production System & Micro Enterprises (Physical & Financial)

Project - IWMP-X		**PIA-Soil Conservation Unit, Banda-I**						**District-Banda**			
Physical and financial targets	**Unit**	**First Year 2011-12**		**Second Year 2012-13**		**Third Year 2013-14**		**Fourth Year 2014-15**		**Total Project**	
		Physical	**Financial**	**Physical**	**Financial**	**Physical**	**Financial**	**Physical**	**Financial**	**Physical**	**Financial**
Production system										0	0.00
(1) Agriculture										0	0.00
(a) Crop demonstration										0	0.00
(1) No. of dem.	No.	0	0.00	264	11.06	264	11.06	59	2.46	586	24.59
(2) Area	ha.			105		105		23		234	0.00
(b) Seed Production		0								0	0.00
(1) No. of dem.	No.	0	0.00	264	11.06	264	11.06	59	2.46	587	24.59
(2) Area	ha.	0		106		106		23		235	0.00
(2) Horticulture/ Agri-Horticulture		0								0	0.00
(a) Area	ha.	0	0.00	12	2.19	12	2.19	3	0.49	27	4.86
(b) No. of Plants	No.		0.00							0	0.00
(4) Animal husbandry										0	0.00
A. fodder production	No. of Units / Farmers	0	0.00	86	0.52	86	0.52	19	0.12	192	1.15
B. Vaccination/Medication	No. of Animals			85	0.05	85	0.05	19	0.01	189	0.12
C. Artificial Insemination	No. of Animals			86	0.03	86	0.03	19	0.01	190	0.08
D. Natural Service.	He Buffalo			5	1.19	5	1.19	1	0.26	11	2.64

2. Estimates of Different Participatory Crop Trials

Pulses	**Rabi**			
Integrated Crop Management	**Lentil**			
Area of Demonstration - 0.40 ha				
Detail of Demonstration	**Intervention / Technology Adopted**	**Organizations for obtaining Seed**		
1. Name of Varieties	Narendra Masoor-1, DPL-15, L-4076, Pusa Vaibhav	C. S. A. University of Ag. & Technology, Kanpur, Indian Institute of Pulse Research, Kalyanpur Kanpur. IARI, Pusa New Delhi		
	Late- IPL-81, K-75			
2. Sowing Time	IInd week of October			
		Rate(Rs/kg/ Pkt)	**Cost per ha (Rs)**	**Demonstration Cost (Rs)**
3. Required Seed	50 kg / ha (F1,F2, Certified)	80	5000	2000.00
7. Use Weedicide	Pendimethalin 3.3 li/ha	465	1918	767.25
	(Pre emergence)			
11. Bio Fertilizers/Bio-agents				
i) Azatobactor + PSB	-			
ii) Rhizobium + PSB	5 Pkt + 5 Pkt = 10 Pkt @ Rs	7.5	94	37.50
iii) Trichoderma	1.50 kg /ha (Soil treatment)	136	255	102.00
12. Recommended dose of fertilizers				
25:60:30 NPK				
i) DAP*	130 kg	15	2438	975.00
ii) SSP*	375 kg	8	3750	1500.00
iii) Urea	In case of SSP 54 kg Urea applied	6	405	162.00
iv) MOP	50 kg	7	438	175.00
* Either one	40 kg /ha Sulphur added if SSP used			
13. IPM				

Spray of Neem Seed Kernal	10	30	375	150.00
Mataka Khad	15 lit/kg Gobar+Neemleaf+water+Desi cow urine+2 kg Molasis mix & Deco	2	155	62.00
Insecticides/Fungicides	If required One Dusting of Methyle Paratheon powder			
	25 kg / ha	25	781	312.50
	Total (Less SSP)			**4743.25**
Integrated Crop Management	**Chickpea**			
Area of Demonstration - 0.40 ha				
Detail of Demonstration	**Intervention / Technology Adopted**	**Organizations for obtaining Seed**		
1. Name of Varieties	KGD-1168, KWR-108, Pusa-256, Pusa-367	C. S. A. University of Ag. & Technology, Kanpur, Indian Institute of Pulse Research, Kalyanpur Kanpur. IARI, Pusa New Delhi		
	Late- Udai			
2. Sowing Time	1st week of October			
		Rate(Rs/kg/ Pkt)	**Cost per ha (Rs)**	**Demonstration Cost (Rs)**
3. Required Seed	80 kg / ha (F1,F2, Certified)	65	6500	2600.00
7. Use Weedicide	Pendimethalin 3.3 li/ha	465	1918	767.25
	(Pre emergence)			
11. Bio Fertilizers/Bio-agents				
i) Azatobactor + PSB	-			
ii) Rhizobium + PSB	5 Pkt + 5 Pkt = 10 Pkt @ Rs	7.5	94	37.50
iii) Trichoderma	1.50 kg /ha (Soil treatment)	136	255	102.00
12. Recommended dose of fertilizers				
25:60:30 NPK				
i) DAP*	130 kg	15	2438	975.00
ii) SSP*	375 kg	8	3750	1500.00

iii) Urea	In case of SSP 54 kg Urea applied	6	405	162.00
iv) MOP	50 kg	7	438	175.00
* Either one	40 kg /ha Sulphur added if SSP used			
13. IPM				
Spray of Neem Seed Kernal	10	30	375	150.00
Mataka Khad	15 lit/kg Gobar+Neemleaf+water+Desi cow urine+2 kg Molasis mix & Deco	2	155	62.00
NPV	250 LE /ha at the time pod formation	200	250	100.00
Insecticides/Fungicides	If required One Dusting of Methyle Paratheon powder			
	25 kg / ha	25	781	312.50
	Total (Less SSP)			**5443.25**
Integrated Crop Management	**Field Pea**			
Area of Demonstration - 0.40 ha				
Detail of Demonstration	**Intervention / Technology Adopted**	**Organizations for obtaining Seed**		
1. Name of Varieties	KMPR-400, KPMR-522, Rachna, Shikha	C. S. A. University of Ag. & Technology, Kanpur, Indian Institute of Pulse Research, Kalyanpur Kanpur. IARI, Pusa New Delhi		
2. Sowing Time	IInd week of October			
		Rate(Rs/kg/ Pkt)	**Cost per ha (Rs)**	**Demonstration Cost (Rs)**
3. Required Seed	100 kg / ha (F1,F2, Certified)	60	7500	3000.00
7. Use Weedicide	Pendimethalin 3.3 li/ha	465	1918	767.25
	(Pre emergence)			
11. Bio Fertilizers/Bio-agents				
i) Azatobactor + PSB	-			
ii) Rhizobium + PSB	5 Pkt + 5 Pkt = 10 Pkt @ Rs	7.5	94	37.50

iii) Trichoderma	1.50 kg /ha (Soil treatment)	136	255	102.00
12. Recommended dose of fertilizers				
25:60:30 NPK				
i) DAP*	130 kg	15	2438	975.00
ii) SSP*	375 kg	8	3750	1500.00
iii) Urea	In case of SSP 54 kg Urea applied	6	405	162.00
iv) MOP	50 kg	7	438	175.00
* Either one	40 kg /ha Sulphur added if SSP used			
13. IPM				
Spray of Neem Seed Kernal	10	30	375	150.00
Mataka Khad	15 lit/kg Gobar+Neemleaf+water+Desi cow urine+2 kg Molasis mix & Deco	2	155	62.00
Insecticides/Fungicides	If required One Dusting of Methyle Paratheon powder			
	25 kg / ha	25	781	312.50
	Total (Less SSP)			**5743.25**
Integrated Crop Management	**Urd**			
Area of Demonstration - 0.40 ha				
Detail of Demonstration	**Intervention / Technology Adopted**	**Organizations for obtaining Seed**		
1. Name of Varieties	Shekhar-2, Azad-1, PU-35, Narendra Urd-1	C. S. A. University of Ag. & Technology, Kanpur, Indian Institute of Pulse Research, Kalyanpur Kanpur. IARI, Pusa New Delhi		
2. Sowing Time	Last week of July			
		Rate(Rs/kg/ Pkt)	**Cost per ha (Rs)**	**Demonstration Cost (Rs)**
3. Required Seed	16 kg / ha (F1,F2, Certified)	100	2000	800.00
7. Use Weedicide	Pendimethalin 3.3 li/ha	465	1918	767.25

	(Pre emergence)			
11. Bio Fertilizers/Bio-agents				
i) Azatobactor + PSB	-			
ii) Rhizobium + PSB	5 Pkt + 5 Pkt = 10 Pkt @ Rs	7.5	94	37.50
iii) Trichoderma	1.50 kg /ha (Soil treatment)	136	255	102.00
12. Recommended dose of fertilizers				
25:60:30 NPK				
i) DAP*	130 kg	15	2438	975.00
ii) SSP*	375 kg	8	3750	1500.00
iii) Urea	In case of SSP 54 kg Urea applied	6	405	162.00
iv) MOP	50 kg	7	438	175.00
* Either one	40 kg /ha Sulphur added if SSP used			
13. IPM				
Spray of Neem Seed Kernal	10	30	375	150.00
Mataka Khad	15 lit/kg Gobar+Neemleaf+water+Desi cow urine+2 kg Molasis mix & Deco	2	155	62.00
Insecticides/Fungicides	If required One Dusting of Methyle Paratheon powder			
	25 kg / ha	25	781	312.50
	Total (Less SSP)			**3543.25**
Integrated Crop Management	**Moong**			
Area of Demonstration - 0.40 ha				
Detail of Demonstration	**Intervention / Technology Adopted**	**Organizations for obtaining Seed**		
1. Name of Varieties	T.M-9937, Meha, Pant Moong-1,2 Late- Type-44, Samrat	C. S. A. University of Ag. & Technology, Kanpur, Indian Institute of Pulse Research, Kalyanpur Kanpur. IARI, Pusa New Delhi		
2. Sowing Time	Last week of June			

		Rate(Rs/kg/ Pkt)	Cost per ha (Rs)	Demonstration Cost (Rs)
3. Required Seed	16 kg / ha (F1,F2, Certified)	100	2000	800.00
7. Use Weedicide	Pendimethalin 3.3 li/ha (Pre emergence)	465	1918	767.25
11. Bio Fertilizers/Bio-agents				
i) Azatobactor + PSB	-			
ii) Rhizobium + PSB	5 Pkt + 5 Pkt = 10 Pkt @ Rs	7.5	94	37.50
iii) Trichoderma	1.50 kg /ha (Soil treatment)	136	255	102.00
12. Recommended dose of fertilizers				
25:60:30 NPK				
i) DAP*	130 kg	15	2438	975.00
ii) SSP*	375 kg	8	3750	1500.00
iii) Urea	In case of SSP 54 kg Urea applied	6	405	162.00
iv) MOP	50 kg	7	438	175.00
* Either one	40 kg /ha Sulphur added if SSP used			
13. IPM				
Spray of Neem Seed Kernal	10	30	375	150.00
Mataka Khad	15 lit/kg Gobar+Neemleaf+water+Desi cow urine+2 kg Molasis mix & Deco	2	155	62.00
NPV	250 LE /ha at the time pod formation	200	250	100.00
Insecticides/Fungicides	If required One Dusting of Methyle Paratheon powder			
	25 kg / ha	25	781	312.50
	Total (Less SSP)			**3643.25**
Integrated Crop Management	**Arhar**			
Area of Demonstration - 0.40				

ha				
Detail of Demonstration	**Intervention / Technology Adopted**	**Organizations for obtaining Seed**		
1. Name of Varieties	Paras, UPAS-120, Type-21, Pusa-992 (Wilt rest.) Late- Bahar, Narendra Arhar-1, Azad	C. S. A. University of Ag. & Technology, Kanpur, Indian Institute of Pulse Research, Kalyanpur Kanpur. IARI, Pusa New Delhi		
2. Sowing Time	Late- Month July			
	Early Last Week of June	**Rate(Rs/kg/ Pkt)**	**Cost per ha (Rs)**	**Demonstration Cost (Rs)**
3. Required Seed	20 kg / ha (F1,F2, Certified)	120	3000	1200.00
7. Use Weedicide	-	-	-	-
11. Bio Fertilizers/Bio-agents				
i) Azatobactor + PSB	-			
ii) Rhizobium + PSB	5 Pkt + 5 Pkt = 10 Pkt @ Rs	7.5	94	37.50
iii) Trichoderma	1.50 kg /ha (Soil treatment)	136	255	102.00
12. Recommended dose of fertilizers				
15:45:20 NPK				
i) DAP*	100 kg	15	2438	750.00
ii) SSP*	250 kg	8	3750	1000.00
iii) Urea	In case of SSP 54 kg Urea applied	6	405	162.00
iv) MOP	50 kg	7	438	175.00
* Either one	30 kg /ha Sulphur added if SSP used			
13. IPM				
Spray of Neem Seed Kernal	10	30	375	150.00
Mataka Khad	15 lit/kg Gobar+Neemleaf+water+Desi cow urine+2 kg Molasis mix & Deco	2	155	62.00

Insecticides/Fungicides	If required One Dusting of Methyle Paratheon powder		0	
	25 kg / ha	25	781	312.50
	Total			**2951.00**
Integrated Crop Management	**Linseed**			
Area of Demonstration - 0.40 ha				
Detail of Demonstration	**Intervention / Technology Adopted**	**Organizations for obtaining Seed**		
1. Name of Varieties	Sweta, Subhra, Garima, Shekhar, Parwati	C. S. A. University of Ag. & Technology, Kanpur, Indian Institute of Pulse Research, Kalyanpur Kanpur. IARI, Pusa New Delhi		
	Late- Laxmi-27, Padmini			
2. Sowing Time				
	Mid October	**Rate(Rs/kg/ Pkt)**	**Cost per ha (Rs)**	**Demonstration Cost (Rs)**
3. Required Seed	30 kg / ha (F1,F2, Certified)	75	2813	1125.00
7. Use Weedicide	-	-	-	-
11. Bio Fertilizers/Bio-agents				
i) Azatobactor + PSB	5 Pkt + 5 Pkt = 10 Pkt @ Rs	7.5	94	37.50
ii) Rhizobium + PSB	-	-	-	-
iii) Trichoderma	-	-	-	-
12. Recommended dose of fertilizers				
50:40:40 NPK				
i) DAP*	125 kg	15	2344	937.50
ii) SSP*	275 kg	8	2750	1100.00
iii) Urea	50 kg	6	375	150.00
iv) MOP	50 kg	7	438	175.00
* Either one	30 kg /ha Sulphur added if SSP used			

13. IPM				
Spray of Neem Seed Kernal	10	30	375	150.00
Mataka Khad	15 lit/kg Gobar+Neemleaf+water+Desi cow urine+2 kg Molasis mix & Deco	2	155	62.00
Insecticides/Fungicides	If required One Dusting of Methyle Paratheon powder		0	
	25 kg / ha	25	781	312.50
	Total (Less SSP)			**2949.50**
Integrated Crop Management	**Mustard**			
Area of Demonstration - 0.40 ha				
Detail of Demonstration	**Intervention / Technology Adopted**	**Organizations for obtaining Seed**		
1. Name of Varieties	Varuna, Kranti, Rohini, Vaibhav, Pusa Bold	C. S. A. University of Ag. & Technology, Kanpur, Indian Institute of Pulse Research, Kalyanpur Kanpur. IARI, Pusa New Delhi		
	Late-Ashirvad, Vardan			
2. Sowing Time				
	October first week	**Rate(Rs/kg/ Pkt)**	**Cost per ha (Rs)**	**Demonstration Cost (Rs)**
3. Required Seed	6 kg / ha (F1,F2, Certified)	150	1125	450.00
7. Use Weedicide	-	-	-	-
11. Bio Fertilizers/Bio-agents				
i) Azatobactor + PSB	5 Pkt + 5 Pkt = 10 Pkt @ Rs	7.5	94	37.50
ii) Rhizobium + PSB	-	-	-	-
iii) Trichoderma	-	-	-	-
12. Recommended dose of fertilizers				
60:50:30 NPK				
i) DAP*	180 kg	15	3375	1350.00

ii) SSP*	275 kg	8	2750	1100.00
iii) Urea	75 kg	6	563	225.00
iv) MOP	50 kg	7	438	175.00
* Either one	30 kg /ha Sulphur added if SSP used			
13. IPM				
Spray of Neem Seed Kernal	10	30	375	150.00
Mataka Khad	15 lit/kg Gobar+Neemleaf+water+Desi cow urine+2 kg Molasis mix & Deco	2	155	62.00
Insecticides/Fungicides	If required One Dusting of Methyle Paratheon powder			
	25 kg / ha	25	781	312.50
	Total (Less SSP)			**2762.00**
Integrated Crop Management	**Toriya**			
Area of Demonstration - 0.40 ha				
Detail of Demonstration	**Intervention / Technology Adopted**	**Organizations for obtaining Seed**		
1. Name of Varieties	Type-9, PT-303, PT-30	C. S. A. University of Ag. & Technology, Kanpur, Indian Institute of Pulse Research, Kalyanpur Kanpur. IARI, Pusa New Delhi		
	Late-Bhawani			
2. Sowing Time				
	First Fortnight of September	**Rate(Rs/kg/ Pkt)**	**Cost per ha (Rs)**	**Demonstration Cost (Rs)**
3. Required Seed	4 kg / ha (F1,F2, Certified)	200	1000	400.00
7. Use Weedicide	-	-	-	-
11. Bio Fertilizers/Bio-agents				
i) Azatobactor + PSB	5 Pkt + 5 Pkt = 10 Pkt @ Rs	7.5	94	37.50
ii) Rhizobium + PSB	-	-	-	-
iii) Trichoderma	-	-	-	-
12. Recommended dose of fertilizers				

50:30:30 NPK				
i) DAP*	125 kg	15	2344	937.50
ii) SSP*	275 kg	8	2750	1100.00
iii) Urea	50 kg	6	375	150.00
iv) MOP	50 kg	7	438	175.00
* Either one	30 kg /ha Sulphur added if SSP used			
13. IPM				
Spray of Neem Seed Kernal	10	30	375	150.00
Mataka Khad	15 lit/kg Gobar+Neemleaf+water+Desi cow urine+2 kg Molasis mix & Deco	2	155	62.00
Insecticides/Fungicides	If required One Dusting of Methyle Paratheon powder		0	
	25 kg / ha	25	781	312.50
	Total (Less SSP)			**2224.50**
Integrated Crop Management	**Til (Sesamum)**			
Area of Demonstration - 0.40 ha				
Detail of Demonstration	**Intervention / Technology Adopted**	**Organizations for obtaining Seed**		
1. Name of Varieties	Type-4,12,13,78, Shekhar	C. S. A. University of Ag. & Technology, Kanpur, Indian Institute of Pulse Research, Kalyanpur Kanpur. IARI, Pusa New Delhi		
	Late- Pragati, Tarun			
2. Sowing Time				
	June last week to July 15	**Rate(Rs/kg/ Pkt)**	**Cost per ha (Rs)**	**Demonstration Cost (Rs)**
3. Required Seed	4 kg / ha (F1,F2, Certified)	150	750	300.00
7. Use Weedicide	-	-	-	-
11. Bio Fertilizers/Bio-agents				
i) Azatobactor + PSB	5 Pkt + 5 Pkt = 10 Pkt @ Rs	7.5	94	37.50

ii) Rhizobium + PSB	-	-	-	-
iii) Trichoderma	-	-	-	-
12. Recommended dose of fertilizers				
30:15:25 NPK				
i) DAP*	80 kg	15	1500	600.00
ii) SSP*	225 kg	8	2250	900.00
iii) Urea	30 kg	6	225	90.00
iv) MOP	40 kg	7	350	140.00
* Either one	30 kg /ha Sulphur added if SSP used			
13. IPM				
Spray of Neem Seed Kernal	10	30	375	150.00
Mataka Khad	15 lit/kg Gobar+Neemleaf+water+Desi cow urine+2 kg Molasis mix & Deco	2	155	62.00
Insecticides/Fungicides	If required One Dusting of Methyle Paratheon powder			
	25 kg / ha	25	781	312.50
	Total (Less SSP)			**1692.00**
Integrated Crop Management	**Wheat**			
Area of Demonstration - 0.40 ha				
Detail of Demonstration	**Intervention / Technology Adopted**	**Organizations for obtaining Seed**		
1. Name of Varieties	UP-2338,WH-542,PBW-343,502,550,K-9006,307	C. S. A. University of Ag. & Technology, Kanpur, Indian Institute of Pulse Research, Kalyanpur Kanpur. IARI, Pusa New Delhi		
2. Sowing Time				
	Mid October to first week of Nov	**Rate(Rs/kg/ Pkt)**	**Cost per ha (Rs)**	**Demonstration Cost (Rs)**
3. Required Seed	100 kg / ha (F1,F2, Certified)	25	3125	1250.00

7. Use Weedicide	Total - at 28 to 32 at after sowing	950	1188	475.00
11. Bio Fertilizers/Bio-agents				
i) Azatobactor + PSB	5 Pkt + 5 Pkt = 10 Pkt @ Rs	7.5	94	37.50
ii) Rhizobium + PSB	-	-	-	-
iii) Trichoderma	1.50 kg /ha (Soil treatment)	136	255	102.00
12. Recommended dose of fertilizers				
120:60:40 NPK				
i) DAP*	325 kg	15	6094	2437.50
ii) SSP*	-	-	0	0.00
iii) Urea	100 kg	6	750	300.00
iv) MOP	80 kg	7	700	280.00
v) Zinc	30 kg /ha	25	938	375.00
13. IPM				
Spray of Neem Seed Kernal	10	30	375	150.00
Mataka Khad	15 lit/kg Gobar+Neemleaf+water+Desi cow urine+2 kg Molasis mix & Deco	2	155	62.00
Insecticides/Fungicides	If required One Dusting of Methyle Paratheon powder		0	
	25 kg / ha	25	781	312.50
	Total (Less SSP)			**5781.50**
Integrated Crop Management	**Maize**			
Area of Demonstration - 0.40 ha				
Detail of Demonstration	**Intervention / Technology Adopted**	**Organizations for obtaining Seed**		
1. Name of Varieties	Hyb. Duccan-103, 105, Sankul-Dhawal, Shakti-1, Popcorn- Amber, V.L. Amber, Perl popcorn	C. S. A. University of Ag. & Technology, Kanpur, Indian Institute of Pulse Research, Kalyanpur Kanpur. IARI, Pusa New Delhi		

2. Sowing Time				
	15 Oct. to 15 Nov.	**Rate(Rs/kg/ Pkt)**	**Cost per ha (Rs)**	**Demonstration Cost (Rs)**
3. Required Seed	22 kg / ha (F1,F2, Certified)	60	1650	660.00
4. Seed Treatement	Thirum & 25 ml Chloropiryphose	60	75	30.00
11. Bio Fertilizers/Bio-agents				
i) Azatobactor + PSB	5 Pkt + 5 Pkt = 10 Pkt @ Rs	7.5	94	37.50
ii) Rhizobium + PSB	-	-	-	-
iii) Trichoderma	1.50 kg /ha (Soil treatment)	136	255	102.00
12. Recommended dose of fertilizers				
100:60:40 NPK				
i) DAP*	265 kg	15	4969	1987.50
ii) SSP*	-	-	0	0.00
iii) Urea	80 kg	6	600	240.00
iv) MOP	50 kg	7	438	175.00
v) Zinc	-	-	0	0.00
13. IPM				
Spray of Neem Seed Kernal	10	30	375	150.00
Mataka Khad	15 lit/kg Gobar+Neemleaf+water+Desi cow urine+2 kg Molasis mix & Deco	2	155	62.00
Insecticides/Fungicides	If required One Dusting of Methyle Paratheon powder		0	
	25 kg / ha	25	781	312.50
	Total (Less SSP)			**3756.50**
Integrated Crop Management	**Maize**			
Area of Demonstration - 0.40 ha				

Detail of Demonstration	**Intervention / Technology Adopted**	**Organizations for obtaining Seed**		
1. Name of Varieties	Hybrid- Ganga-11, Sartaj, Prakash, Pusa Hybrid Maize5, Composite-Prabhat, Navjyoti, Pusa Composite-2, Naveen	C. S. A. University of Ag. & Technology, Kanpur, Indian Institute of Pulse Research, Kalyanpur Kanpur. IARI, Pusa New Delhi		
2. Sowing Time				
	Mid June	**Rate(Rs/kg/ Pkt)**	**Cost per ha (Rs)**	**Demonstration Cost (Rs)**
3. Required Seed	20 kg / ha (F1,F2, Certified)	40	1000	400.00
4. Seed Treatement	Thirum & 25 ml Chloropiryphose	60	75	30.00
11. Bio Fertilizers/Bio-agents				
i) Azatobactor + PSB	5 Pkt + 5 Pkt = 10 Pkt @ Rs	7.5	94	37.50
ii) Rhizobium + PSB	-	-	-	-
iii) Trichoderma	1.50 kg /ha (Soil treatment)	136	255	102.00
12. Recommended dose of fertilizers				
100:60:40 NPK				
i) DAP*	265 kg	15	4969	1987.50
ii) SSP*	-	-	0	0.00
iii) Urea	80 kg	6	600	240.00
iv) MOP	50 kg	7	438	175.00
v) Zinc	-	-	0	0.00
13. IPM				
Spray of Neem Seed Kernal	10	30	375	150.00
Mataka Khad	15 lit/kg Gobar+Neemleaf+water+Desi cow urine+2 kg Molasis mix & Deco	2	155	62.00
Insecticides/Fungicides	If required One Dusting of Methyle Paratheon powder		0	

	25 kg / ha	25	781	312.50
	Total (Less SSP)			**3496.50**
Integrated Crop Management	**Sorghum**			
Area of Demonstration - 0.40 ha				
Detail of Demonstration	**Intervention / Technology Adopted**	**Organizations for obtaining Seed**		
1. Name of Varieties	CSV-13, 15, 1616, Bundela. CSH-16	C. S. A. University of Ag. & Technology, Kanpur, Indian Institute of Pulse Research, Kalyanpur Kanpur. IARI, Pusa New Delhi		
2. Sowing Time	June last to July first week	**Rate(Rs/kg/ Pkt)**	**Cost per ha (Rs)**	**Demonstration Cost (Rs)**
3. Required Seed	12 kg / ha (F1,F2, Certified)	40	600	240.00
4. Seed Treatement	Thirum & 25 ml Chloropiryphose	60	75	30.00
11. Bio Fertilizers/Bio-agents				
i) Azatobactor + PSB	5 Pkt + 5 Pkt = 10 Pkt @ Rs	7.5	94	37.50
ii) Rhizobium + PSB	-	-	-	-
iii) Trichoderma	1.50 kg /ha (Soil treatment)	136	255	102.00
12. Recommended dose of fertilizers				
80:40:20 NPK				
i) DAP*	280 kg	15	5250	2100.00
ii) SSP*	-	-	0	0.00
iii) Urea	100 kg	6	750	300.00
iv) MOP	80 kg	7	700	280.00
v) Zinc	-	-	0	0.00
13. IPM				
Spray of Neem Seed Kernal	10	30	375	150.00

Mataka Khad	15 lit/kg Gobar+Neemleaf+water+Desi cow urine+2 kg Molasis mix & Deco	2	155	62.00
Insecticides/Fungicides	If required One Dusting of Methyle Paratheon powder			
	25 kg / ha	25	781	312.50
	Total (Less SSP)			**3614.00**

Details of Demonstration under Agriculture Production System

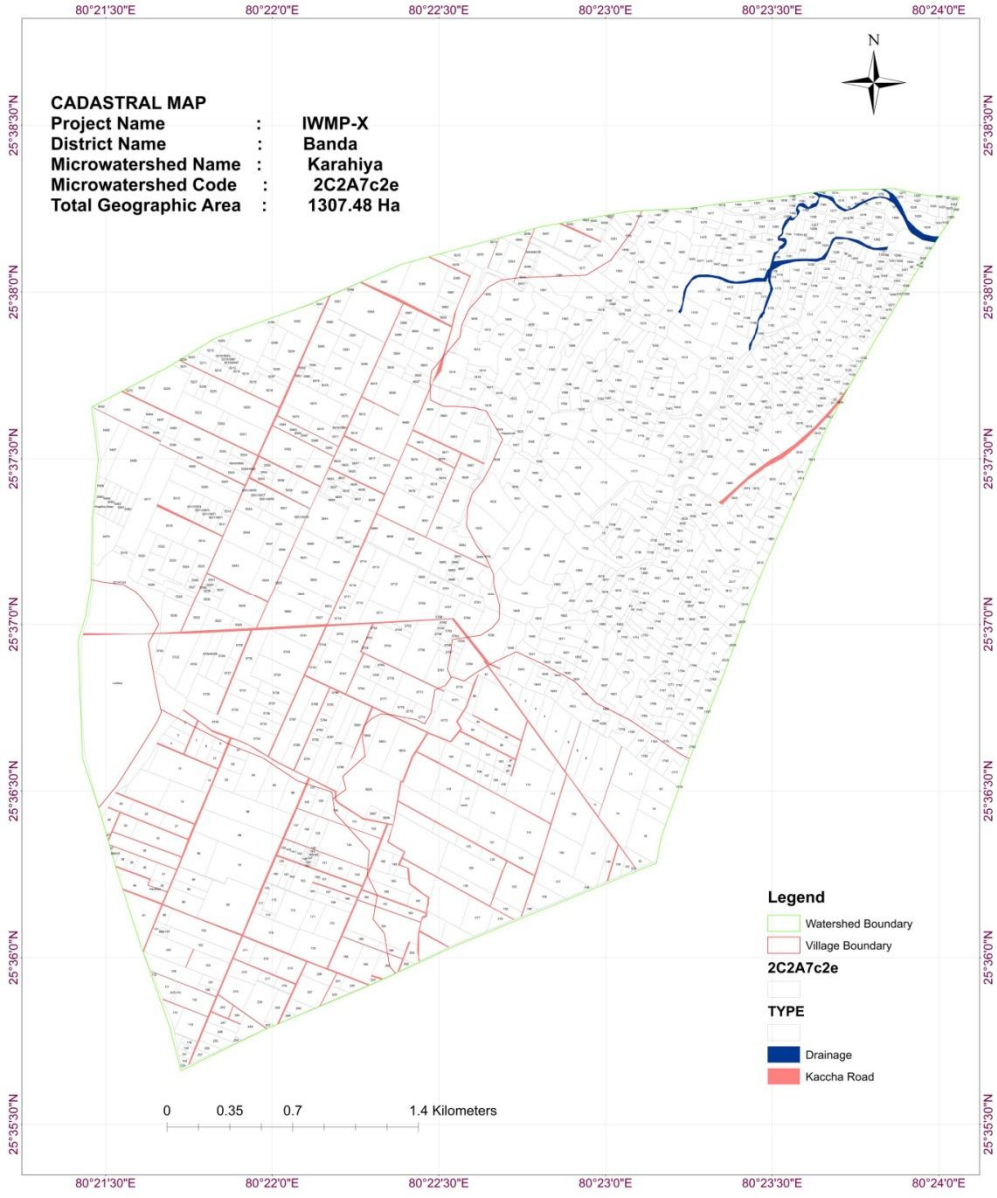
Project- IWMP-X															
S. No.	***No. of Farmers***	***Crop***	***Variety***	***Area (ha)***	***Total cost of demon. (Rs.)***	***Beneficiary Contribution (Rs.)***	***Share of Project fund (Rs.)***	***Prop. date of sowing***	***Exp. Crop maturity date***	***Prop. Crop cutting Date***	***Productivity (Q/ha)***		***Total Seed***	***Expected Seed Exchange***		***Remarks***
											Existing	**Expected**	**Production (Qtl.)**	**No of Farmers**	**Quantity (Qtl.)**	
	Kharif															
1	240	Urd	Shekhar-2, Azad-1/ PU-35/19	48.00	1.701	0.060	1.641	Last June to Mid July	Mid September	25-Sep	3.48	5.6	268.8	1792	107.52	
						0.221	1.480									
2	200	Sorghum	Bundela, CSV-15, 13	40.00	1.446	0.051	1.395	Last June to Mid July	Mid September	25-Sep	4.2	6.2	248	2067	206.67	
						0.188	1.258									
3	240	Arhar	Paras, UPAS-120	48.00	1.416	0.050	1.367	Last June-July	Oct (UPAS)	30-Sep	5.34	7.6	364.8	1459	291.84	

						0.184	1.232		March (Paras)	25-Mar						
4	200	Til	Pragati, Shekhar	40.00	0.677	0.024	0.653	15-Jul	Septe mber	30-Sep	1.8	3.6	144	3600	108.00	
	Rabi					0.088	0.589									
1	400	Lentil	DPL-15, K-75	80.00	3.795	0.133	3.662	15-Oct	Feb	5-Feb	4.9	6.5	520	867	433.33	
						0.493	3.301									
2	320	Chick pea	KDG-1168, KWR-108	64.00	3.484	0.122	3.362	15-30 October	Las Feb to Mid March	2-10 March	5.62	8.5	544	680	476.00	
						0.453	3.031									
3	320	Field Pea	KPMR-400, 522	64.00	3.676	0.129	3.547	October	March	5-Mar	6.2	9.5	608	760	570.00	
						0.478	3.198									
4	240	Linseed	Parwati, Padmini	48.00	1.416	0.050	1.366	October	Feb-March	27 Feb to 5 March	Mixed	5.6	268.8	1075	215.04	
						0.184	1.232									
5	200	Mustard	Maya, Kranti	40.00	1.1048	0.039	1.066	October	Feb	15-120 Feb	Mixed	4.8	192	3840	153.60	
						0.144	0.961									
	Total					**3.088**	**34.340**									

NOTE: List of beneficiaries for crop demonstration trials is kept in project file and it is located on the the map of Participatory Crop Demonstration Trials (Crop Action Plan)

MAPS

3.


CADASTRAL MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Karahiya
Microwatershed Code : 2C2A7c2e
Total Geographic Area : 1307.48 Ha
N
80°21'30"E
80°22'0"E
80°22'30"E
80°23'0"E
80°23'30"E
80°24'0"E
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
25°36'30"N
25°36'0"N
25°35'30"N
Legend
Watershed Boundary
Village Boundary
2C2A7c2e
TYPE
Drainage
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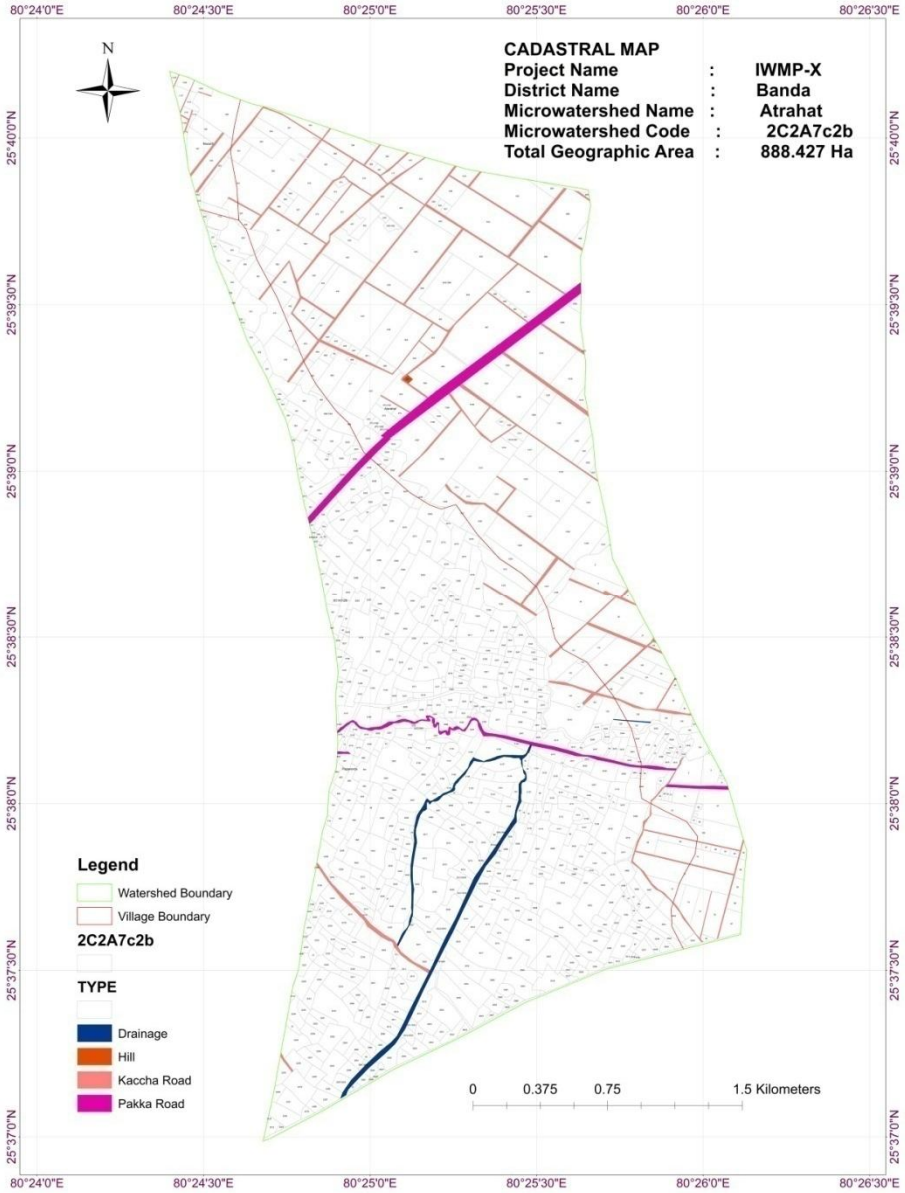
0.7
1.4 Kilometers


CADASTRAL MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Atrahat
Microwatershed Code : 2C2A7c2b
Total Geographic Area : 888.427 Ha
N
80°24'0"E
80°24'30"E
80°25'0"E
80°25'30"E
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25°39'30"N
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
Legend
Watershed Boundary
Village Boundary
2C2A7c2b
TYPE
Drainage
Hill
Kaccha Road
Pakka Road
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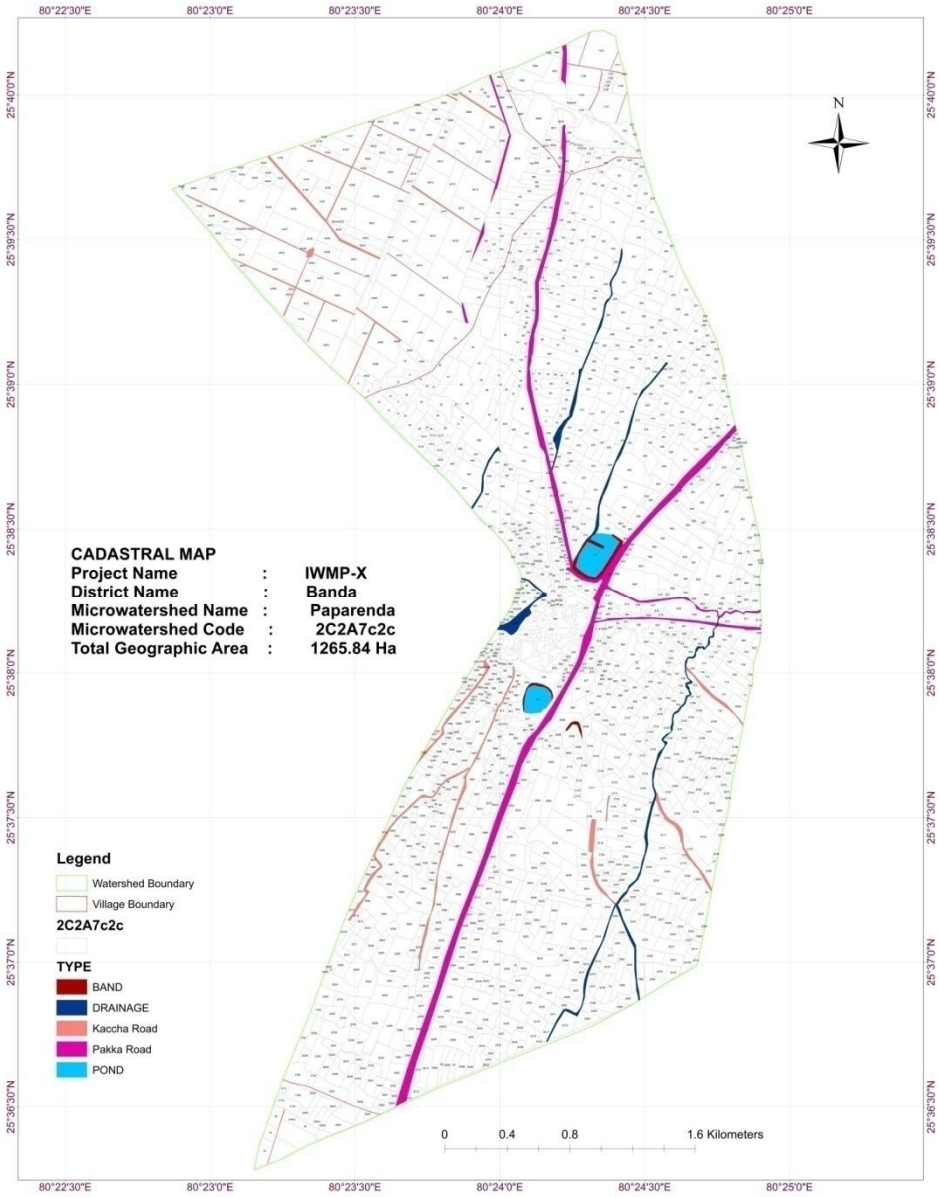
0.75
1.5 Kilometers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80°23'30"E
80°24'0"E
80°24'30"E
80°25'0"E
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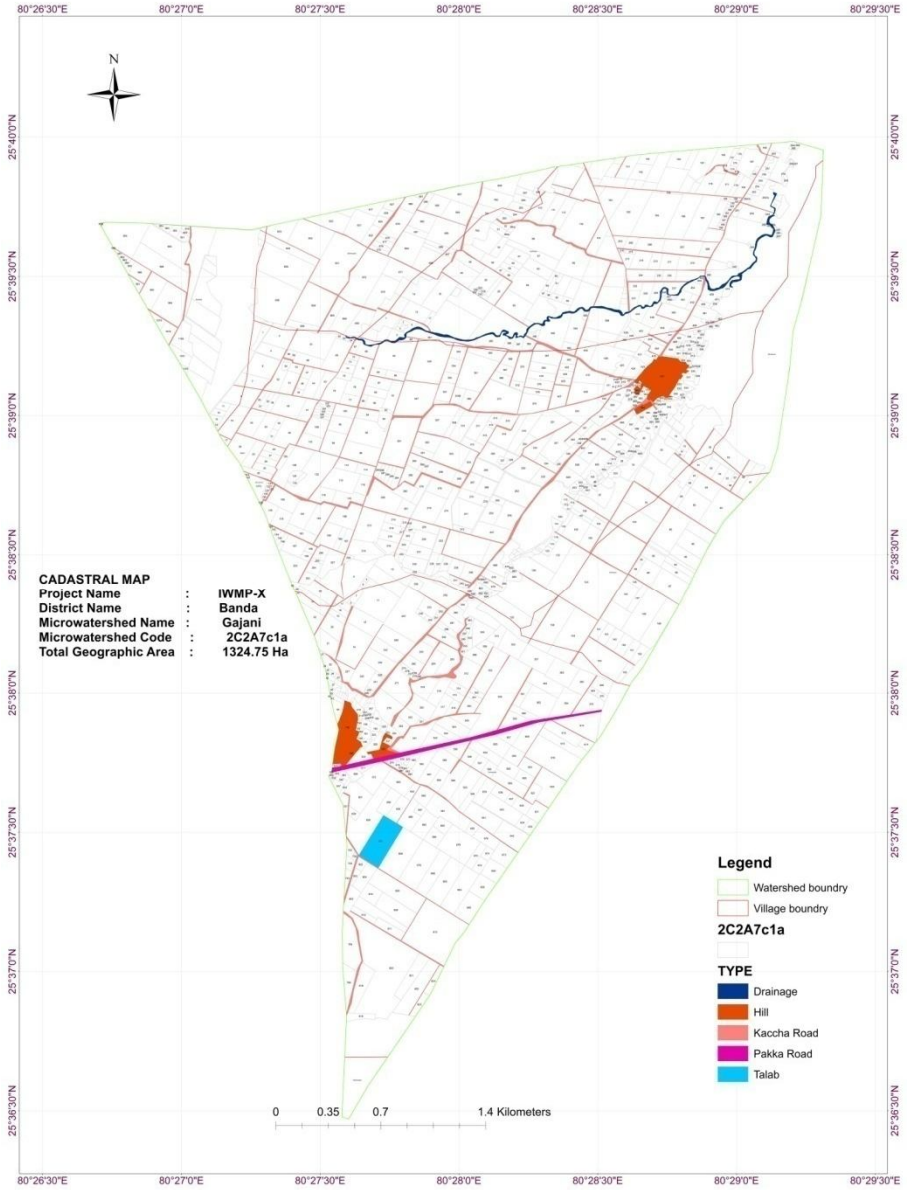
25°39'30"N
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
25°36'30"N
N
CADASTRAL MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Paparenda
Microwatershed Code : 2C2A7c2c
Total Geographic Area : 1265.84 Ha
Legend
Watershed Boundary
Village Boundary
2C2A7c2c
TYPE
BAND
DRAINAGE
Kaccha Road
Pakka Road
POND
0
0.4
0.8
1.6 Kilometers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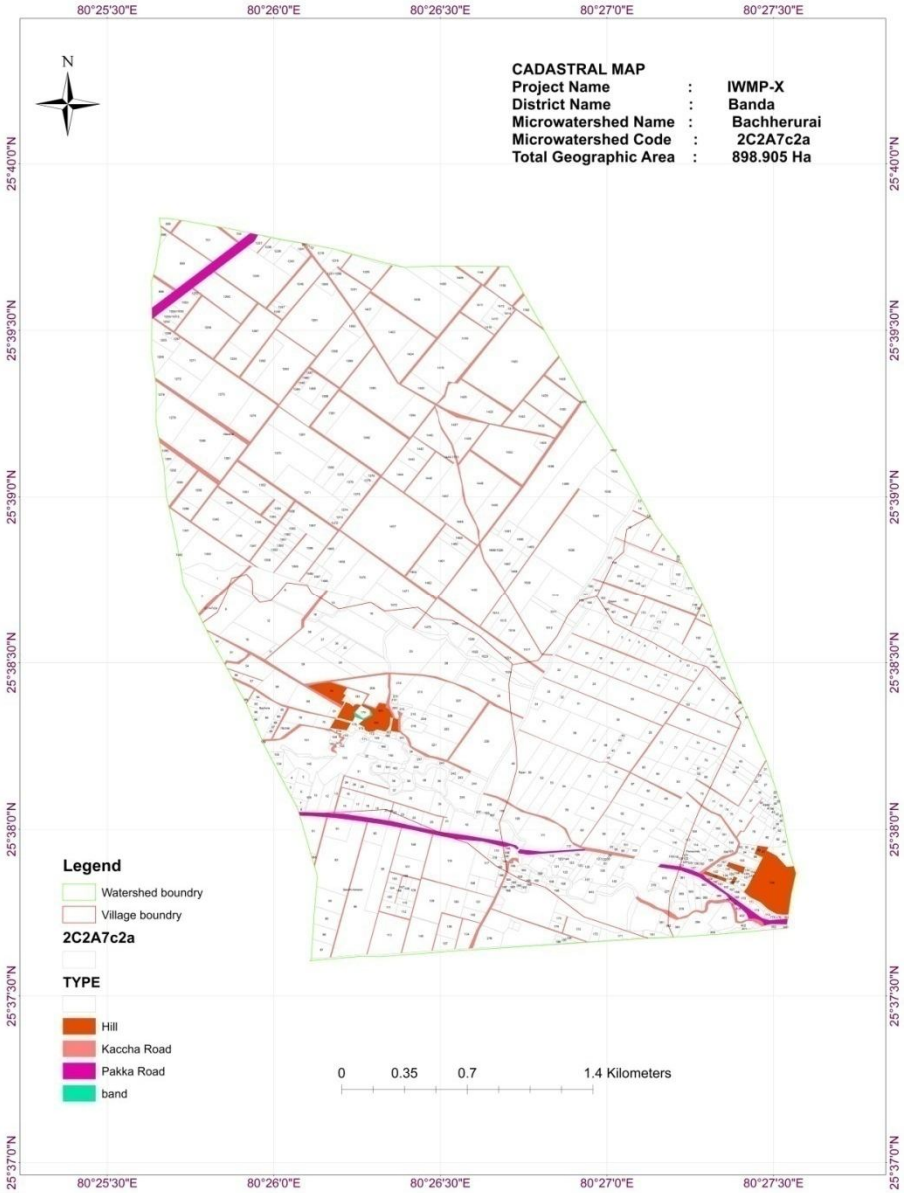
25°40'0"N
25°39'30"N
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
25°36'30"N
CADASTRAL MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Gajani
Microwatershed Code : 2C2A7c1a
Total Geographic Area : 1324.75 Ha
Legend
Watershed boundry
Village boundry
2C2A7c1a
TYPE
Drainage
Hill
Kaccha Road
Pakka Road
Talab
0
0.35
0.7
1.4 Kilometers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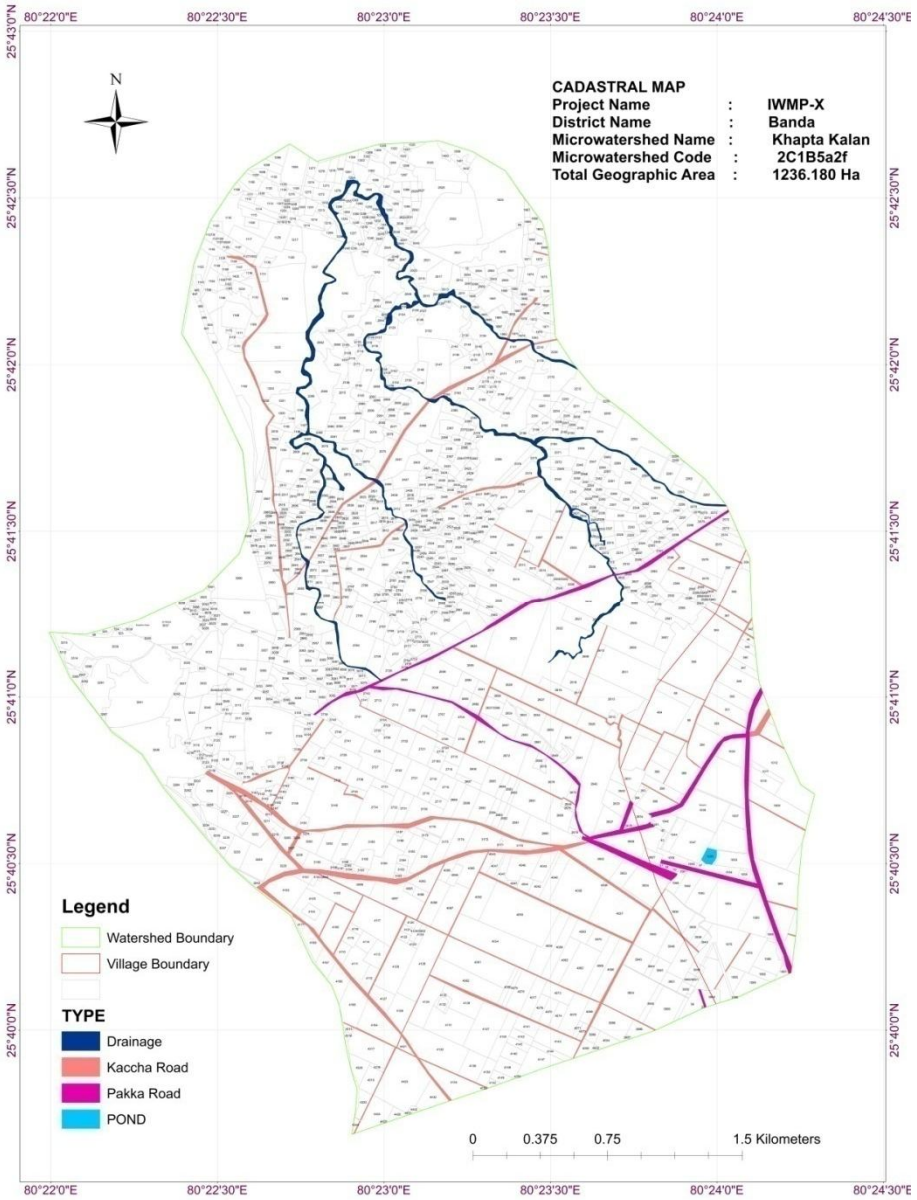
25°39'30"N
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
N
CADASTRAL MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Bachherurai
Microwatershed Code : 2C2A7c2a
Total Geographic Area : 898.905 Ha
Legend
Watershed boundry
Village boundry
2C2A7c2a
TYPE
Hill
Kaccha Road
Pakka Road
band
0 0.35 0.7 1.4 Kilometers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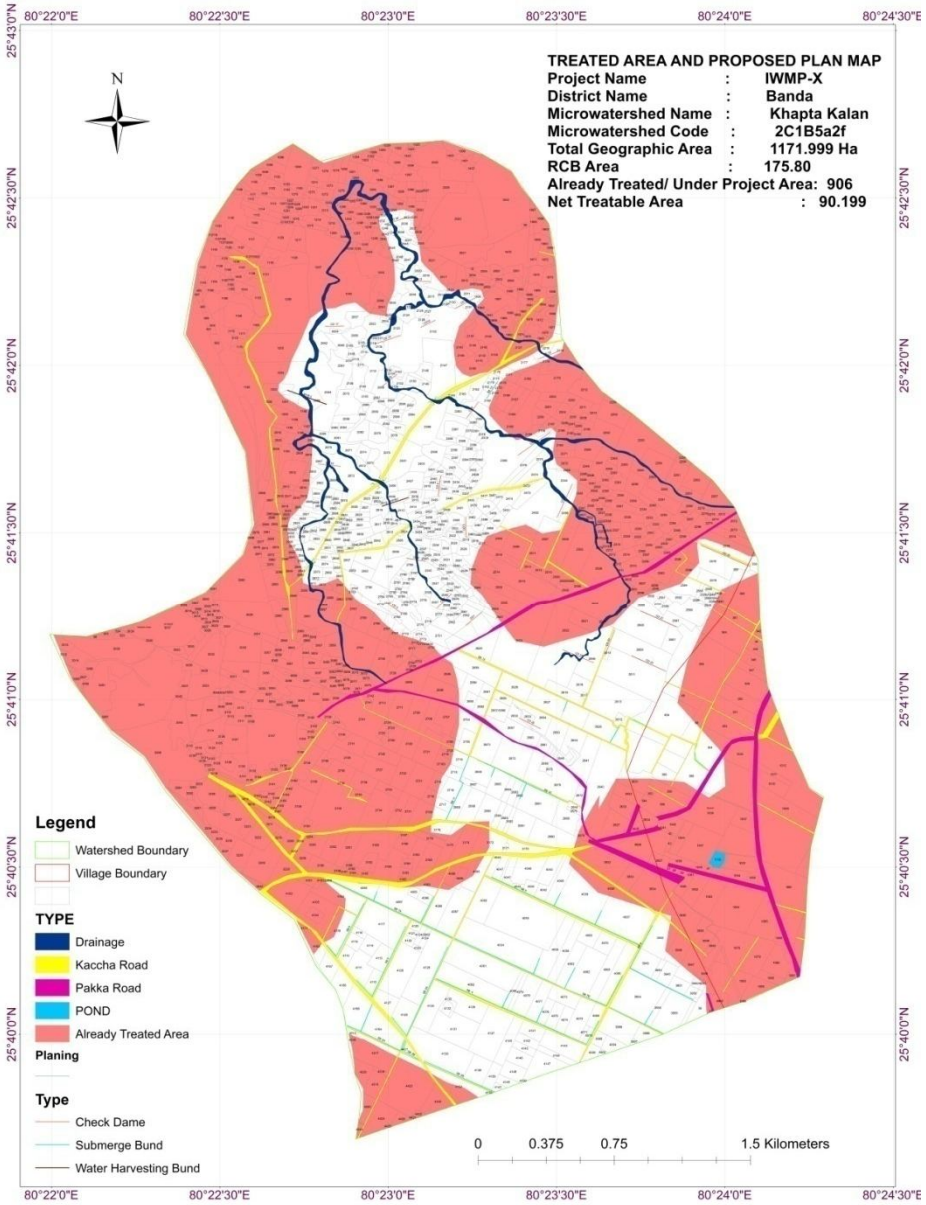
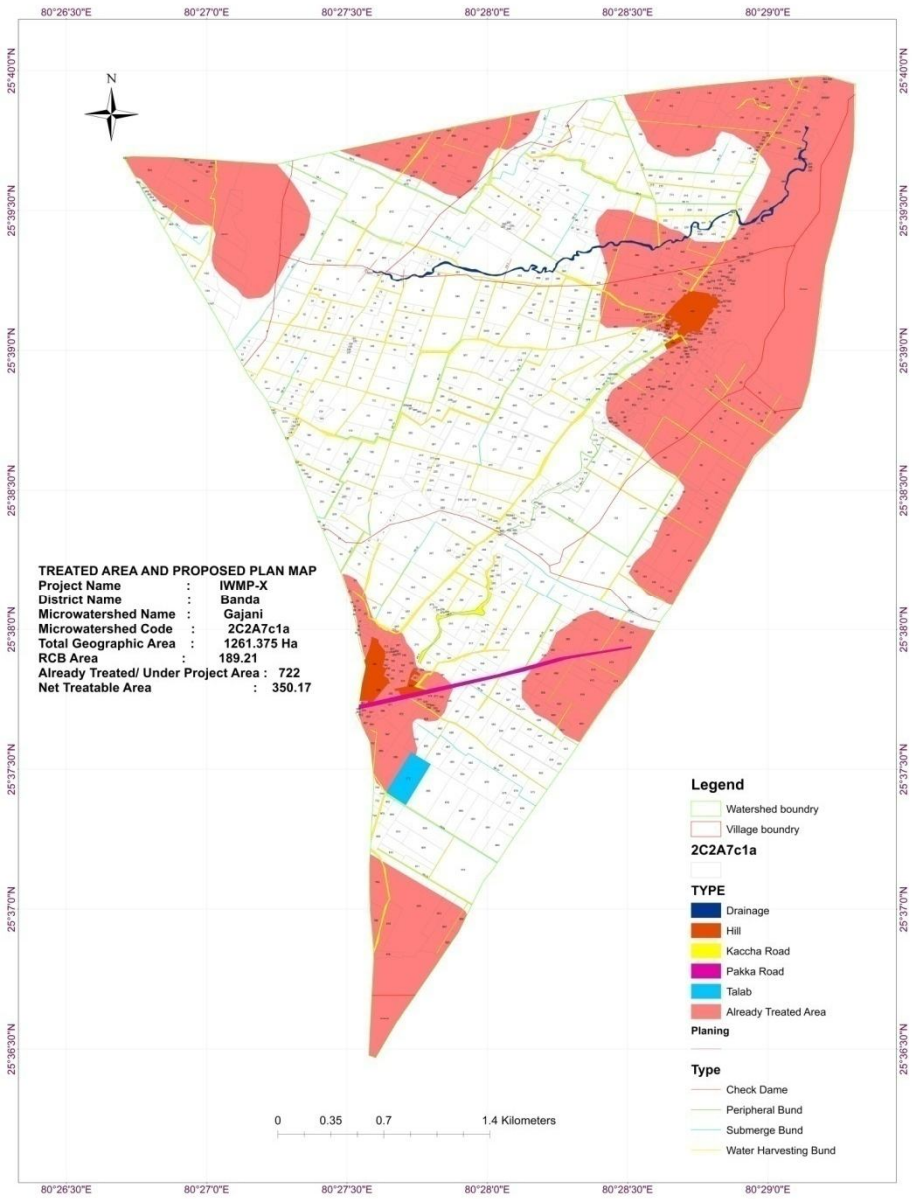
25°42'30"N
25°42'0"N
25°41'30"N
25°41'0"N
25°40'30"N
25°40'0"N
N
CADASTRAL MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Khapta Kalan
Microwatershed Code : 2C1B5a2f
Total Geographic Area : 1236.180 Ha
Legend
Watershed Boundary
Village Boundary
TYPE
Drainage
Kaccha Road
Pakka Road
POND
0 0.375 0.75 1.5 Kilometers


TREATED AREA AND PROPOSED PLAN MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Khapta Kalan
Microwatershed Code : 2C1B5a2f
Total Geographic Area : 1171.999 Ha
RCB Area : 175.80
Already Treated/ Under Project Area: 906
Net Treatable Area : 90.199
N
80°22'0"E
80°22'30"E
80°23'0"E
80°23'30"E
80°24'0"E
80°24'30"E
25°43'0"N
25°42'30"N
25°42'0"N
25°41'30"N
25°41'0"N
25°40'30"N
25°40'0"N
Legend
Watershed Boundary
Village Boundary
TYPE
Drainage
Kaccha Road
Pakka Road
POND
Already Treated Area
Planing
Type
Check Dame
Submerge Bund
Water Harvesting Bund
0 0.375 0.75 1.5 Kilometers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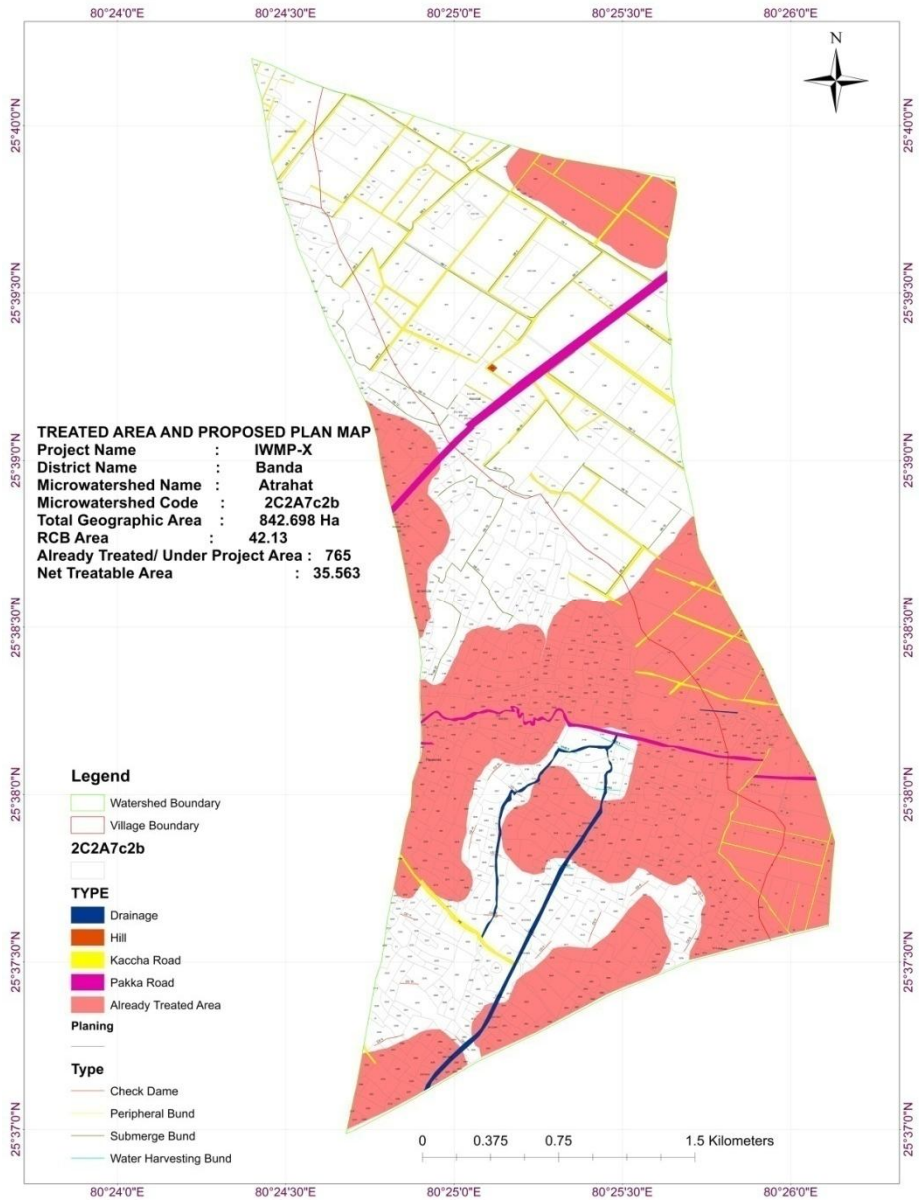
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
25°36'30"N
N
TREATED AREA AND PROPOSED PLAN MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Gajani
Microwatershed Code : 2C2A7c1a
Total Geographic Area : 1261.375 Ha
RCB Area : 189.21
Already Treated/ Under Project Area : 722
Net Treatable Area : 350.17
0 0.35 0.7 1.4 Kilometers
Legend
Watershed boundry
Village boundry
2C2A7c1a
TYPE
Drainage
Hill
Kaccha Road
Pakka Road
Talab
Already Treated Area
Planing
Type
Check Dame
Peripheral Bund
Submerge Bund
Water Harvesting Bund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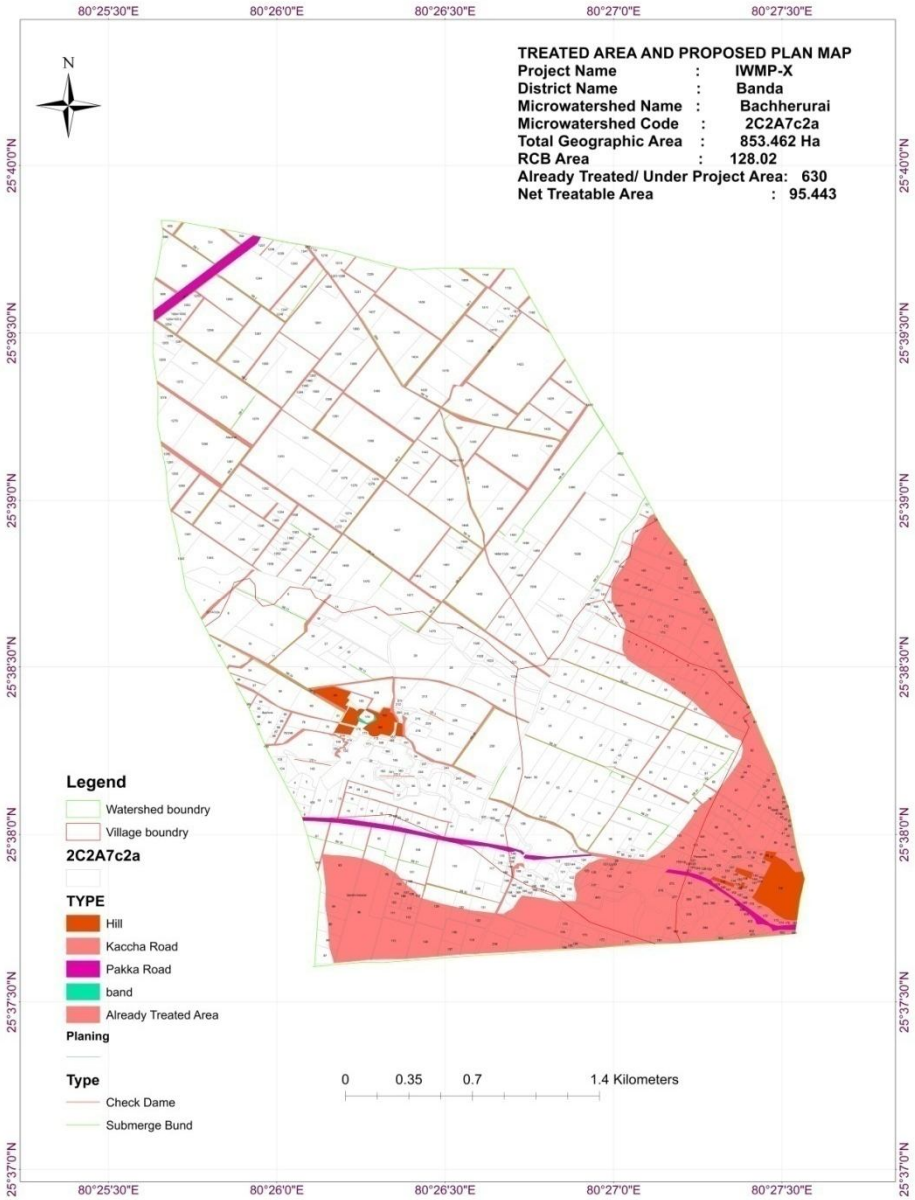
25°39'30"N
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
N
TREATED AREA AND PROPOSED PLAN MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Atrahat
Microwatershed Code : 2C2A7c2b
Total Geographic Area : 842.698 Ha
RCB Area : 42.13
Already Treated/ Under Project Area : 765
Net Treatable Area : 35.563
Legend
Watershed Boundary
Village Boundary
2C2A7c2b
TYPE
Drainage
Hill
Kaccha Road
Pakka Road
Already Treated Area
Planing
Type
Check Dame
Peripheral Bund
Submerge Bund
Water Harvesting Bund
0
0.375
0.75
1.5 Kilometers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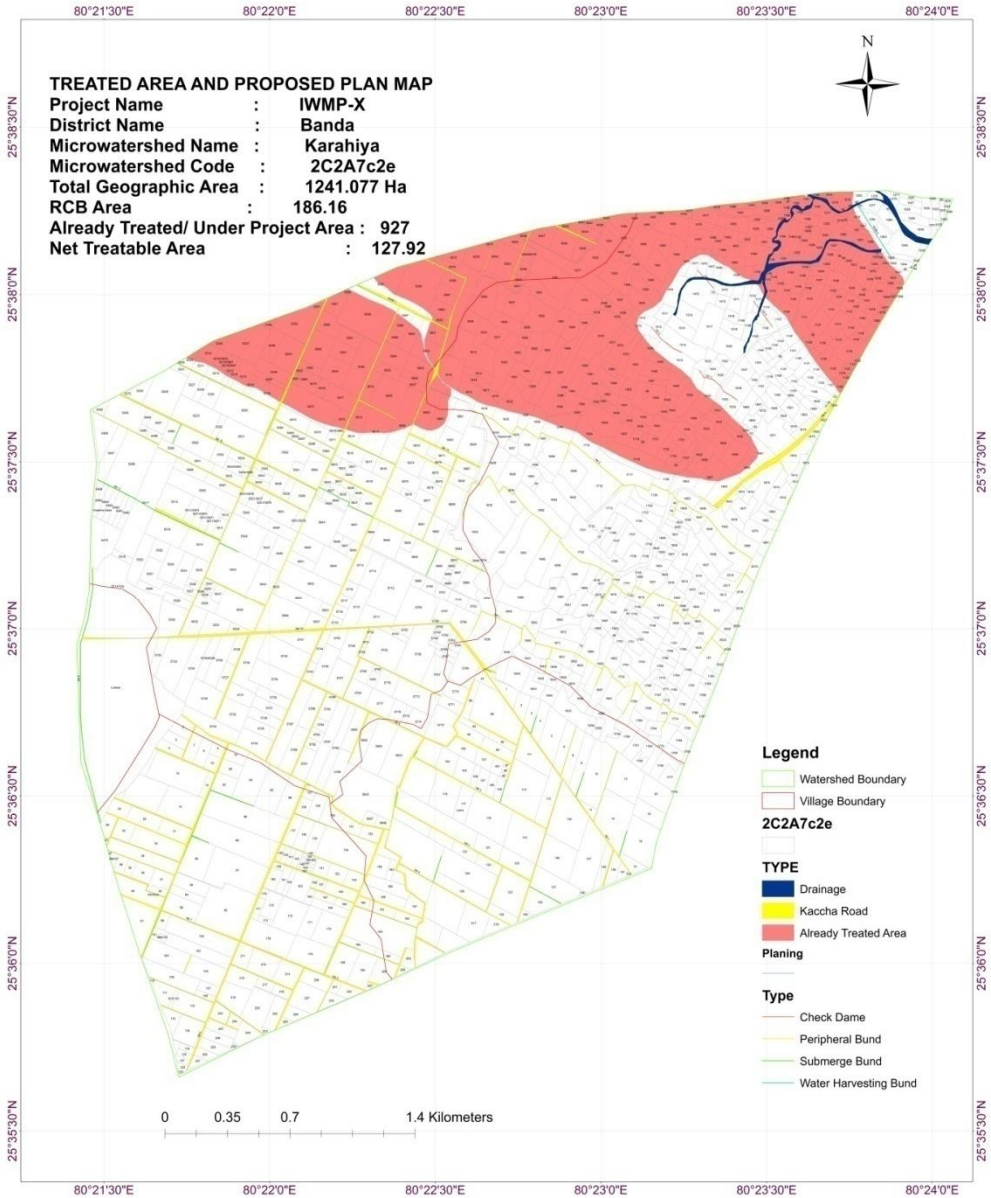
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
N
TREATED AREA AND PROPOSED PLAN MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Bachherurai
Microwatershed Code : 2C2A7c2a
Total Geographic Area : 853.462 Ha
RCB Area : 128.02
Already Treated/ Under Project Area: 630
Net Treatable Area : 95.443
Legend
Watershed boundry
Village boundry
2C2A7c2a
TYPE
Hill
Kaccha Road
Pakka Road
band
Already Treated Area
Planing
Type
Check Dame
Submerge Bund
0 0.35 0.7 1.4 Kilometers


TREATED AREA AND PROPOSED PLAN MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Karahiya
Microwatershed Code : 2C2A7c2e
Total Geographic Area : 1241.077 Ha
RCB Area : 186.16
Already Treated/ Under Project Area : 927
Net Treatable Area : 127.92
N
80°21'30"E
80°22'0"E
80°22'30"E
80°23'0"E
80°23'30"E
80°24'0"E
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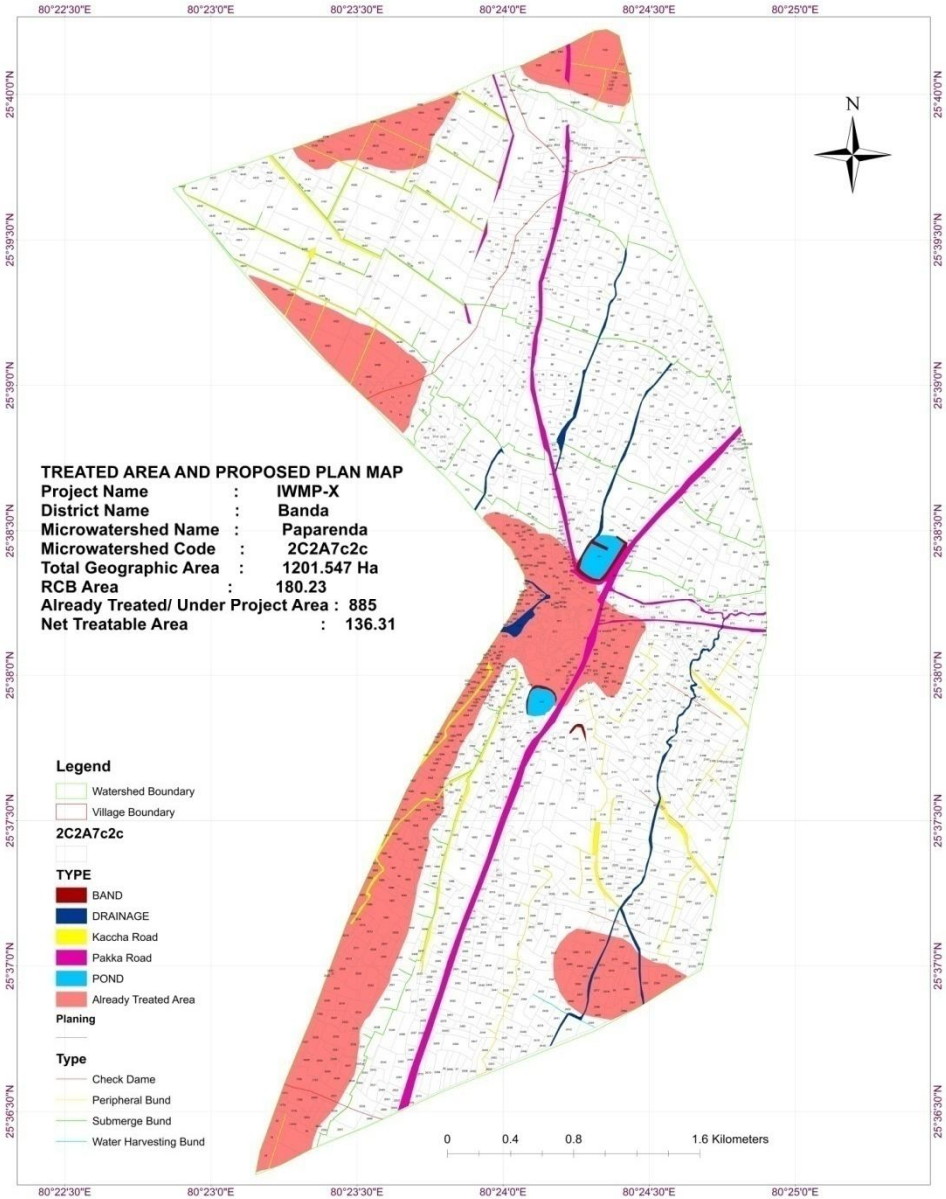
25°38'0"N
25°37'30"N
25°37'0"N
25°36'30"N
25°36'0"N
25°35'30"N
Legend
Watershed Boundary
Village Boundary
2C2A7c2e
TYPE
Drainage
Kaccha Road
Already Treated Area
Planing
Type
Check Dame
Peripheral Bund
Submerge Bund
Water Harvesting Bund
0
0.35
0.7
1.4 Kilometers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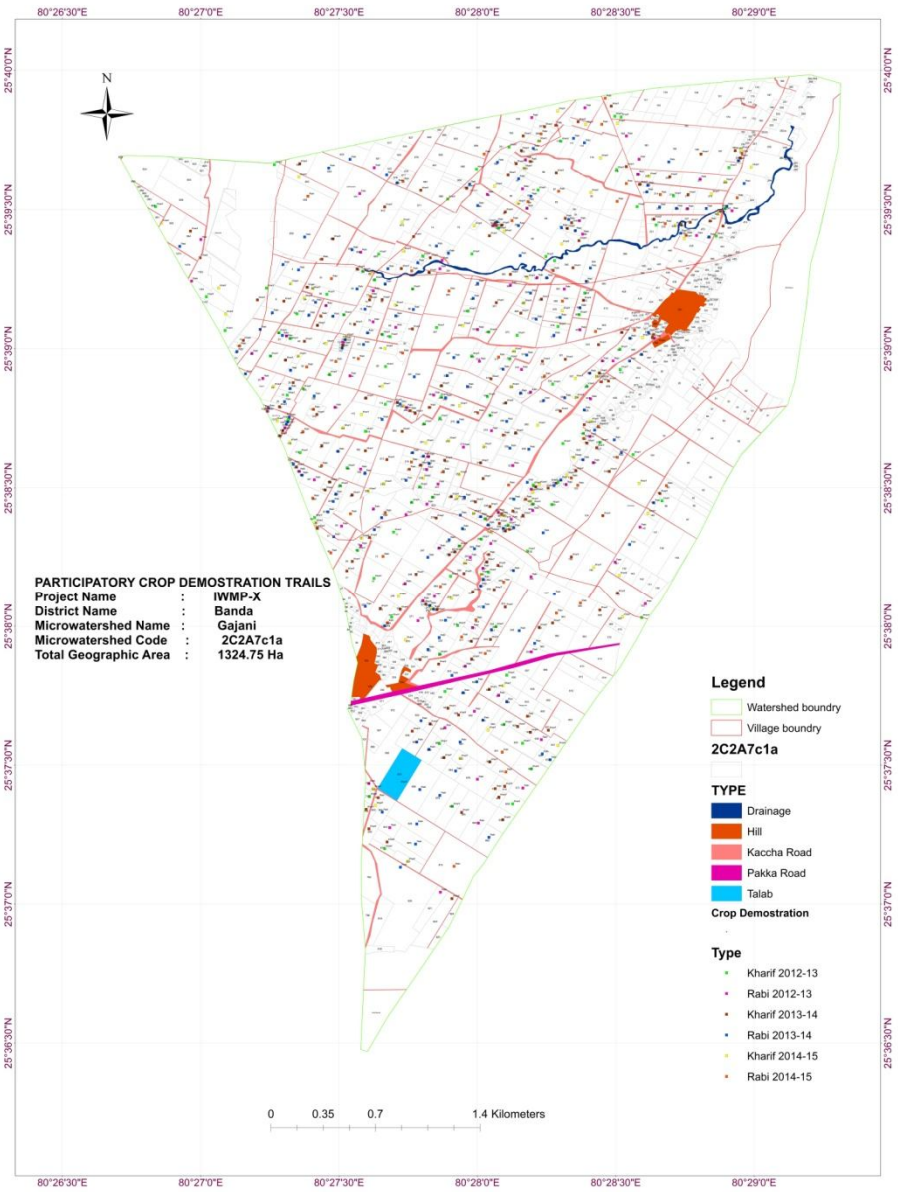
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
25°36'30"N
N
TREATED AREA AND PROPOSED PLAN MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Paparenda
Microwatershed Code : 2C2A7c2c
Total Geographic Area : 1201.547 Ha
RCB Area : 180.23
Already Treated/ Under Project Area : 885
Net Treatable Area : 136.31
Legend
Watershed Boundary
Village Boundary
2C2A7c2c
TYPE
BAND
DRAINAGE
Kaccha Road
Pakka Road
POND
Already Treated Area
Planing
Type
Check Dame
Peripheral Bund
Submerge Bund
Water Harvesting Bund
0
0.4
0.8
1.6 Kilometers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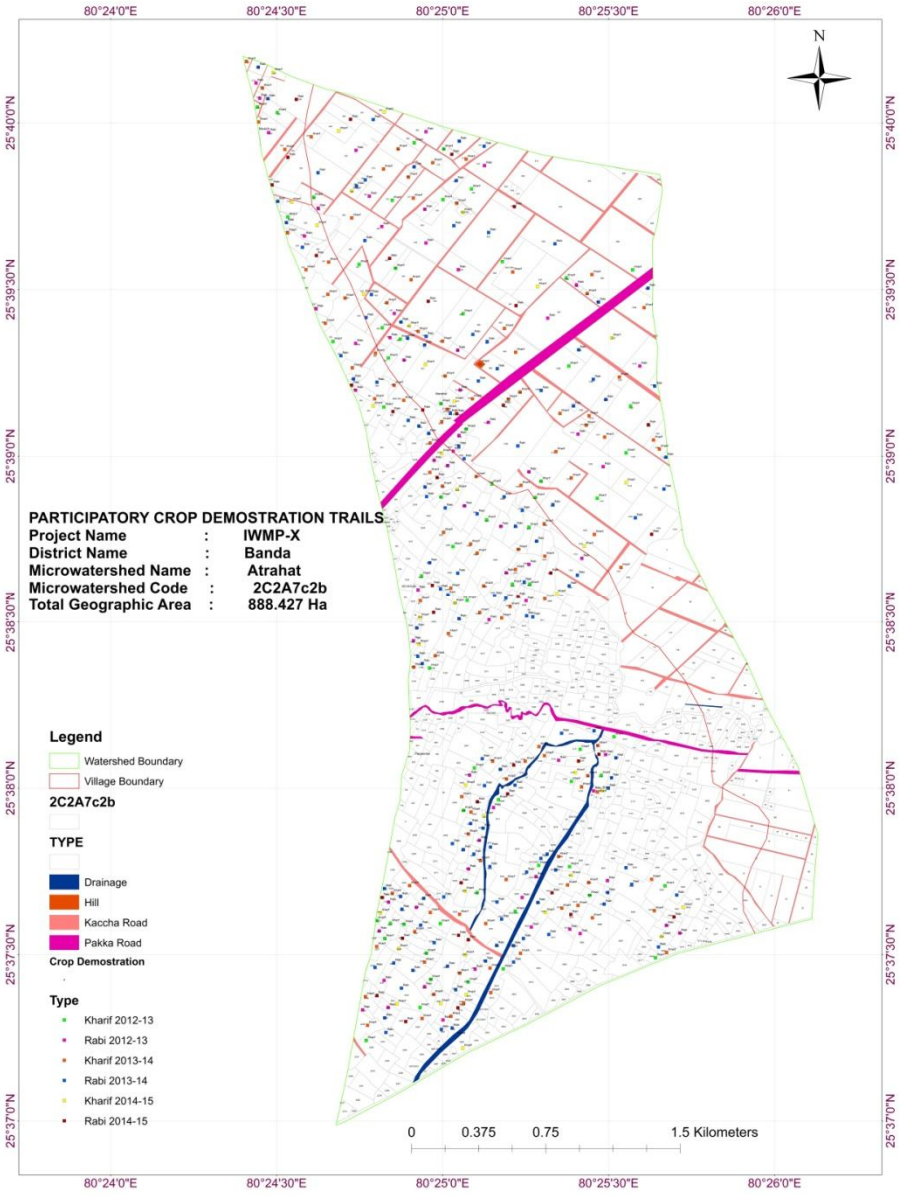
25°39'30"N
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
25°36'30"N
N
PARTICIPATORY CROP DEMOSTRATION TRAILS
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Gajani
Microwatershed Code : 2C2A7c1a
Total Geographic Area : 1324.75 Ha
Legend
Watershed boundry
Village boundry
2C2A7c1a
TYPE
Drainage
Hill
Kaccha Road
Pakka Road
Talab
Crop Demostration
Type
Kharif 2012-13
Rabi 2012-13
Kharif 2013-14
Rabi 2013-14
Kharif 2014-15
Rabi 2014-15
0 0.35 0.7 1.4 Kilometers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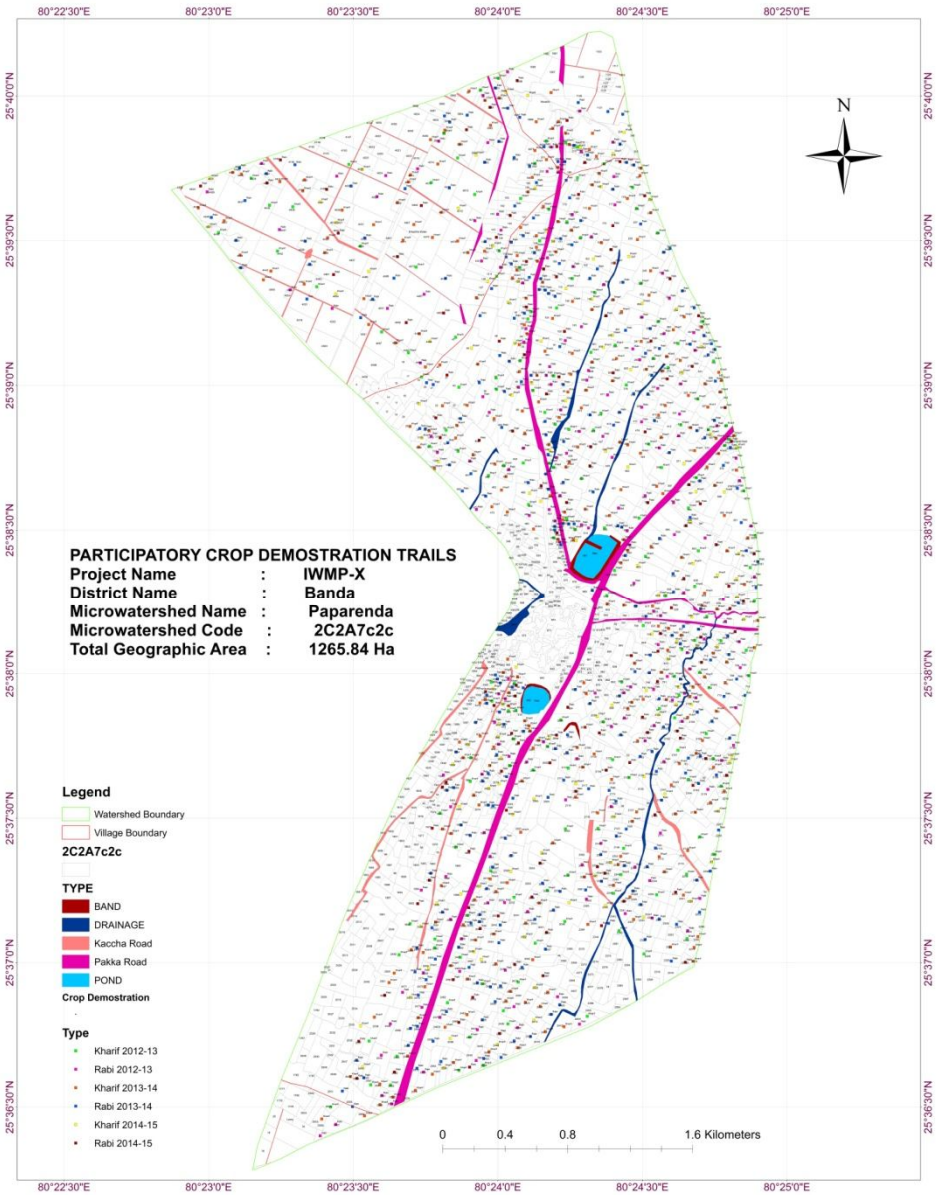
N
25°40'0"N
25°39'30"N
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
PARTICIPATORY CROP DEMOSTRATION TRAILS
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Atrahat
Microwatershed Code : 2C2A7c2b
Total Geographic Area : 888.427 Ha
Legend
Watershed Boundary
Village Boundary
2C2A7c2b
TYPE
Drainage
Hill
Kaccha Road
Pakka Road
Crop Demostration
Type
Kharif 2012-13
Rabi 2012-13
Kharif 2013-14
Rabi 2013-14
Kharif 2014-15
Rabi 2014-15
0
0.375
0.75
1.5 Kilometers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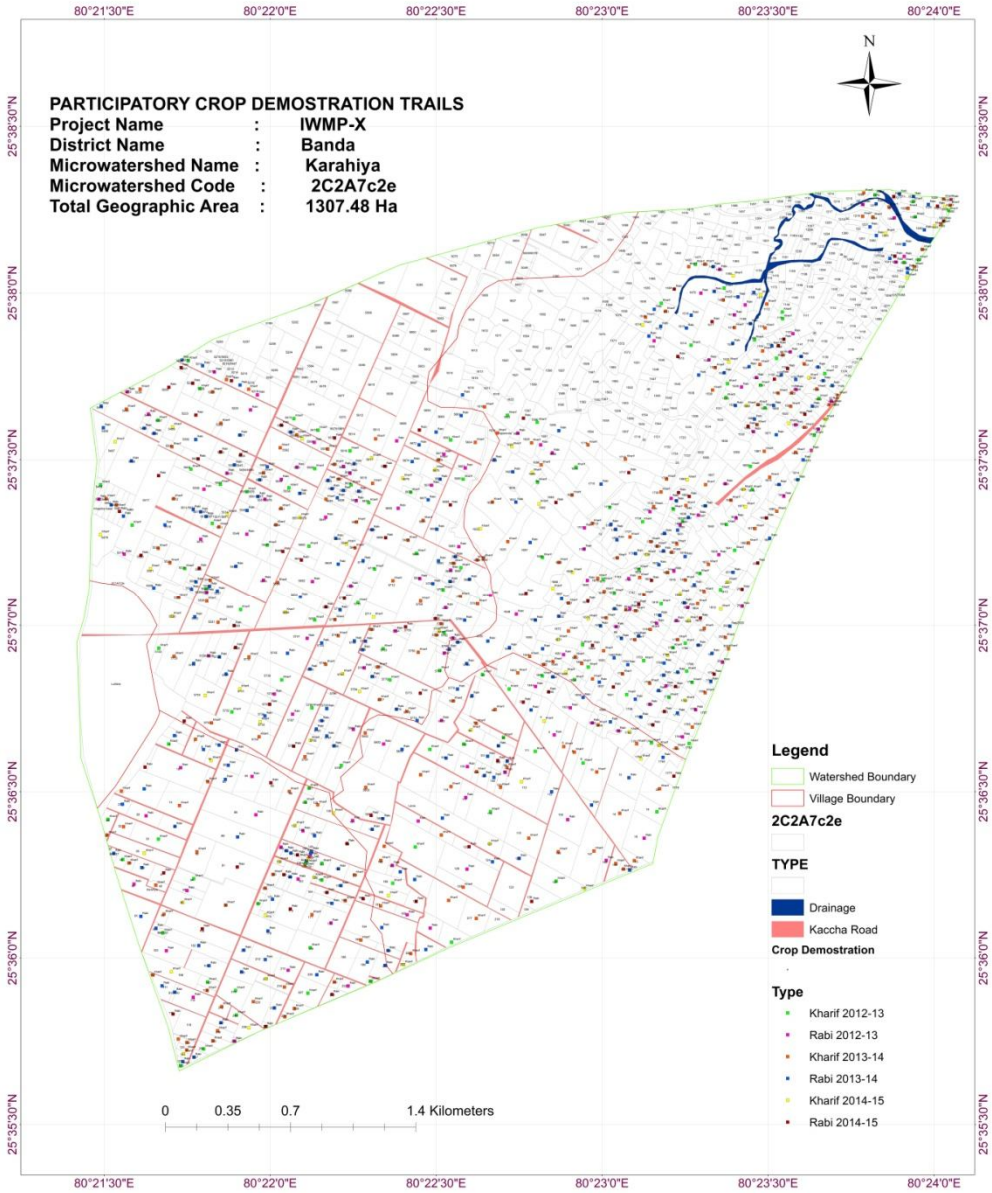
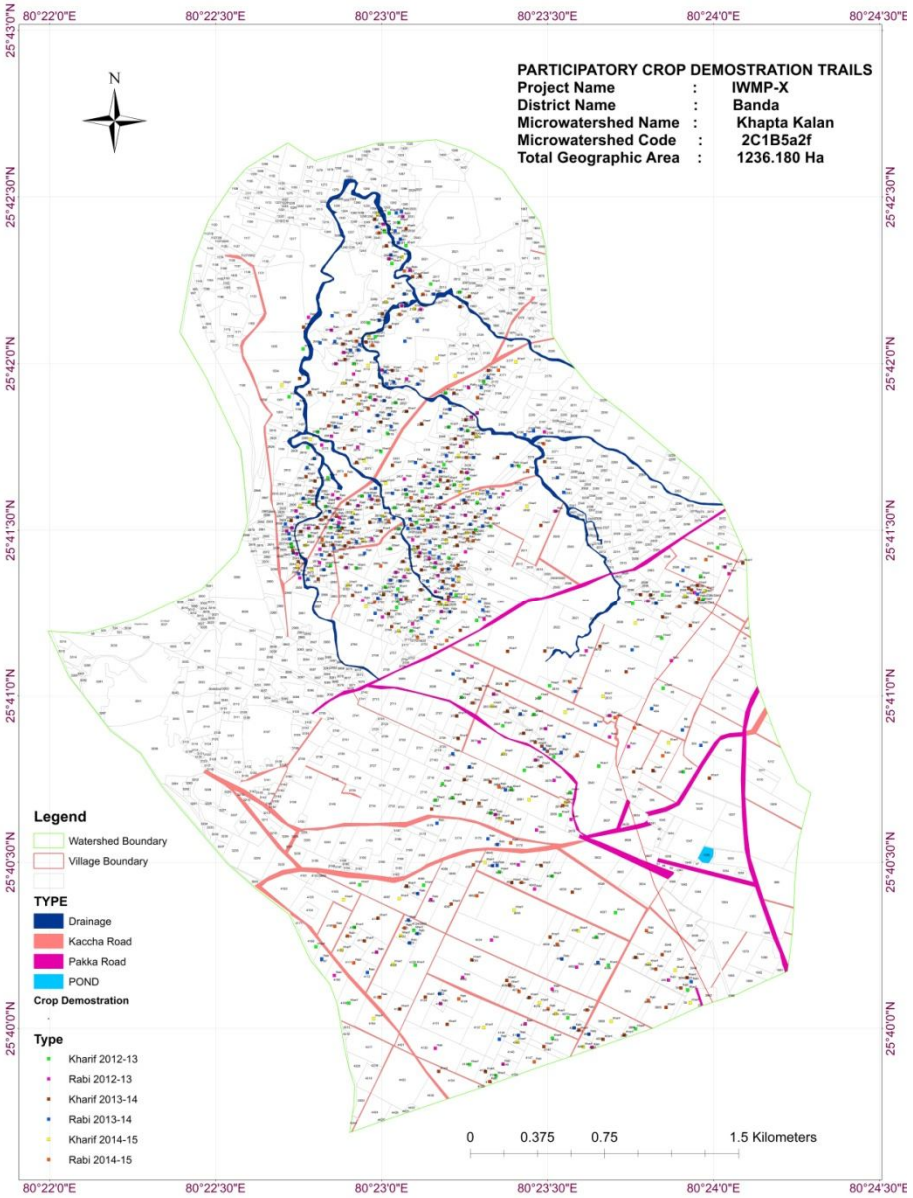
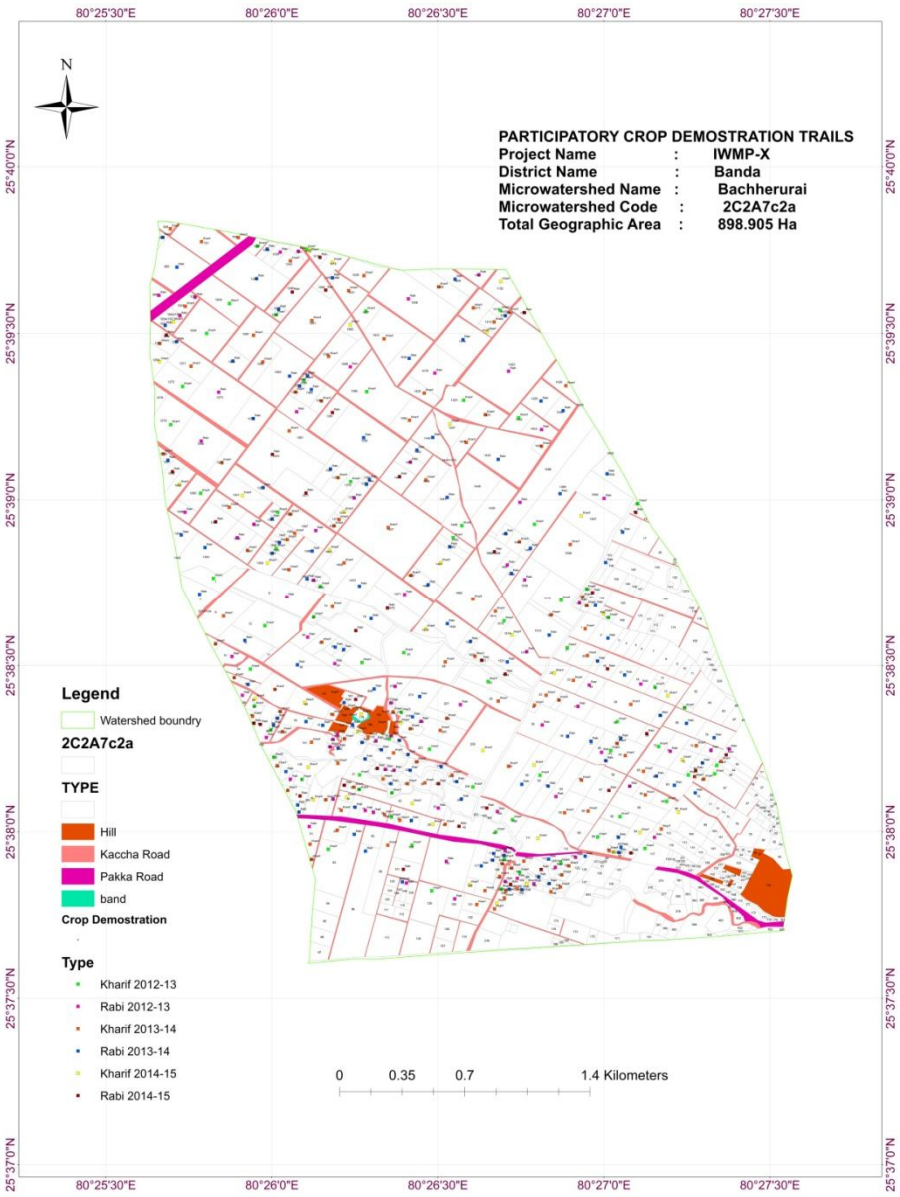
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
25°36'30"N
N
PARTICIPATORY CROP DEMOSTRATION TRAILS
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Paparenda
Microwatershed Code : 2C2A7c2c
Total Geographic Area : 1265.84 Ha
Legend
Watershed Boundary
Village Boundary
2C2A7c2c
TYPE
BAND
DRAINAGE
Kaccha Road
Pakka Road
POND
Crop Demostration
Type
Kharif 2012-13
Rabi 2012-13
Kharif 2013-14
Rabi 2013-14
Kharif 2014-15
Rabi 2014-15
0
0.4
0.8
1.6 Kilometers


PARTICIPATORY CROP DEMOSTRATION TRAILS
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Karahiya
Microwatershed Code : 2C2A7c2e
Total Geographic Area : 1307.48 Ha
N
80°21'30"E
80°22'0"E
80°22'30"E
80°23'0"E
80°23'30"E
80°24'0"E
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
25°36'30"N
25°36'0"N
25°35'30"N
Legend
Watershed Boundary
Village Boundary
2C2A7c2e
TYPE
Drainage
Kaccha Road
Crop Demostration
Type
Kharif 2012-13
Rabi 2012-13
Kharif 2013-14
Rabi 2013-14
Kharif 2014-15
Rabi 2014-15
0
0.35
0.7
1.4 Kilometers


PARTICIPATORY CROP DEMOSTRATION TRAILS
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Khapta Kalan
Microwatershed Code : 2C1B5a2f
Total Geographic Area : 1236.180 Ha
N
80°22'0"E
80°22'30"E
80°23'0"E
80°23'30"E
80°24'0"E
80°24'30"E
25°43'0"N
25°42'30"N
25°42'0"N
25°41'30"N
25°41'0"N
25°40'30"N
25°40'0"N
Legend
Watershed Boundary
Village Boundary
TYPE
Drainage
Kaccha Road
Pakka Road
POND
Crop Demostration
Type
Kharif 2012-13
Rabi 2012-13
Kharif 2013-14
Rabi 2013-14
Kharif 2014-15
Rabi 2014-15
0
0.375
0.75
1.5 Kilometers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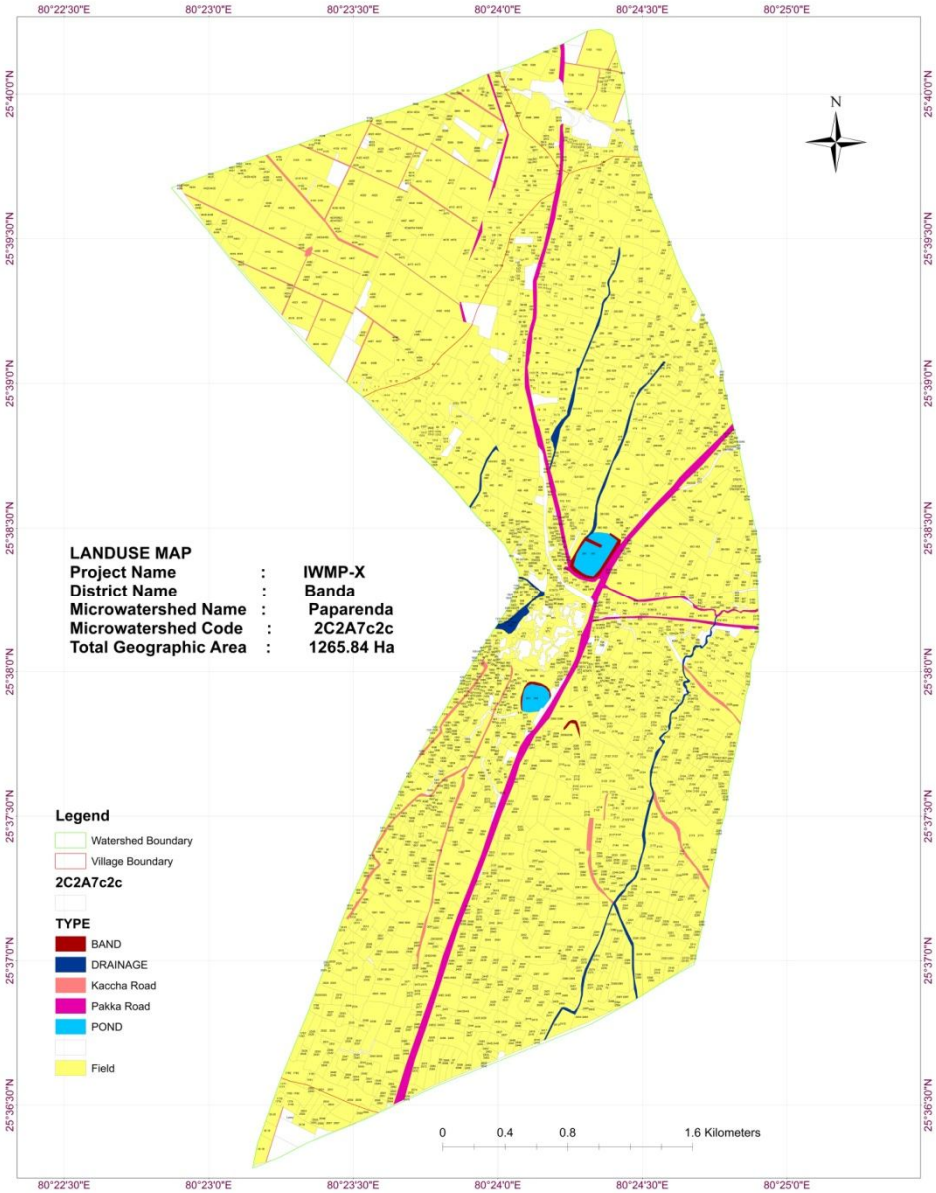
25°39'30"N
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
N
PARTICIPATORY CROP DEMOSTRATION TRAILS
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Bachherurai
Microwatershed Code : 2C2A7c2a
Total Geographic Area : 898.905 Ha
Legend
Watershed boundry
2C2A7c2a
TYPE
Hill
Kaccha Road
Pakka Road
band
Crop Demostration
Type
Kharif 2012-13
Rabi 2012-13
Kharif 2013-14
Rabi 2013-14
Kharif 2014-15
Rabi 2014-15
0 0.35 0.7 1.4 Kilometers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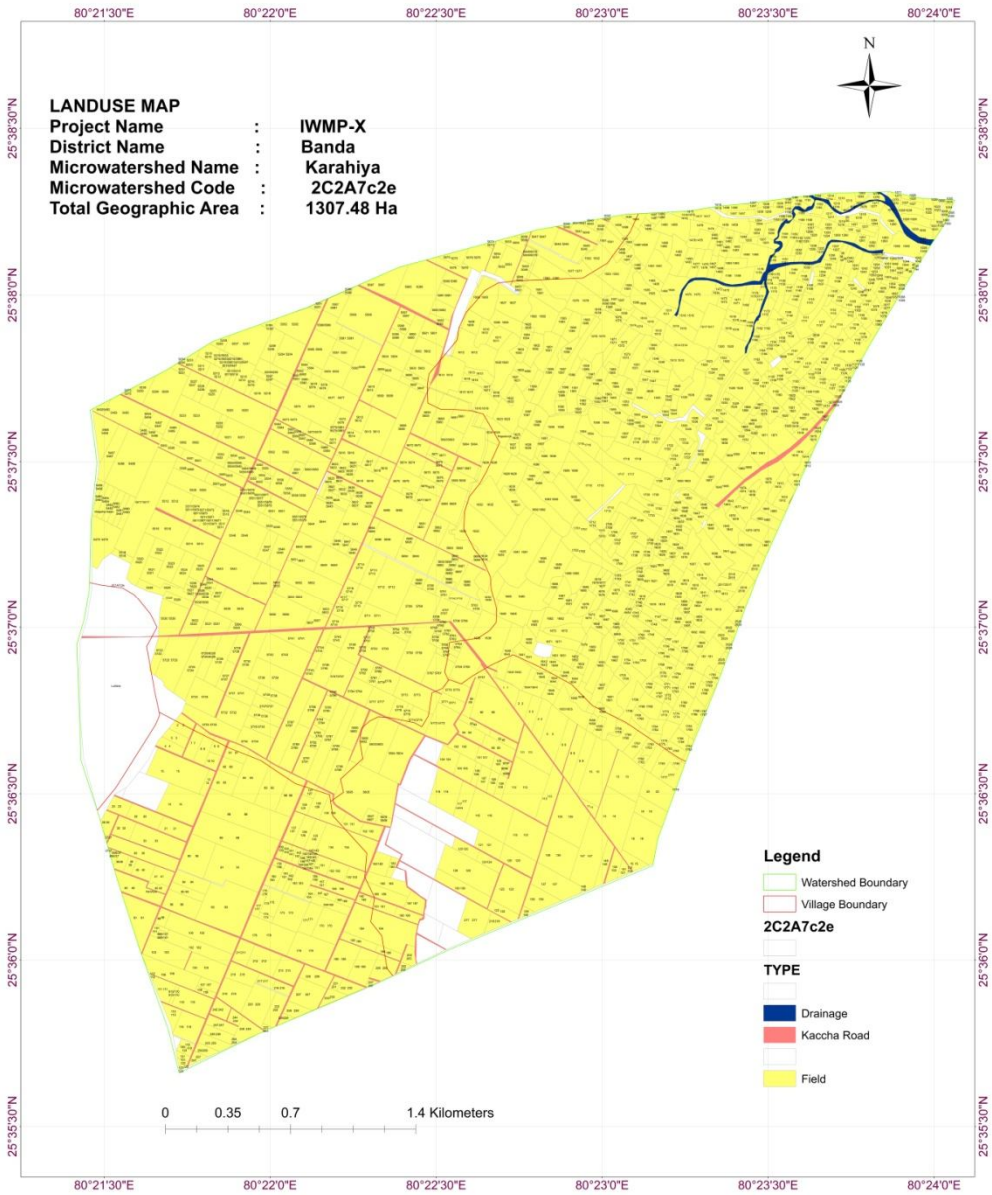
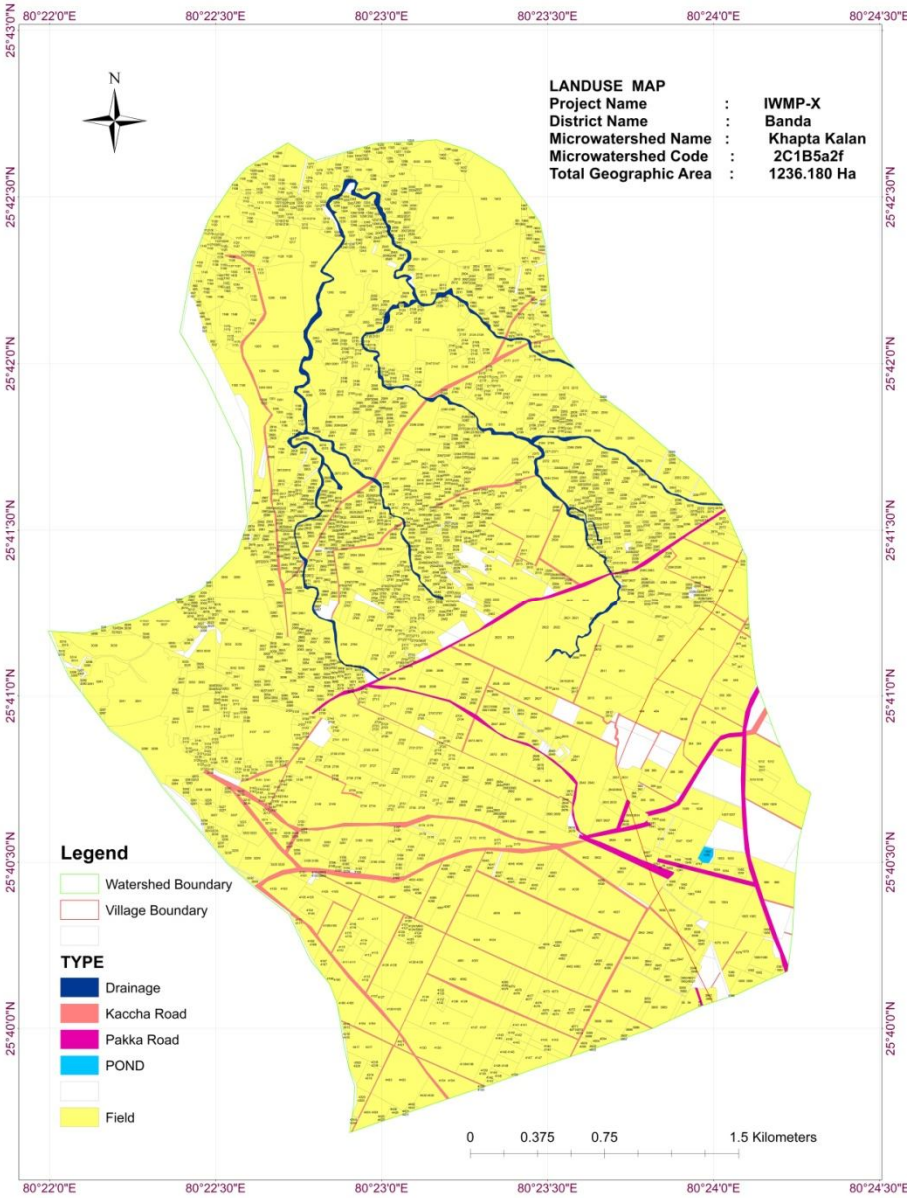
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
25°36'30"N
N
LANDUSE MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Paparenda
Microwatershed Code : 2C2A7c2c
Total Geographic Area : 1265.84 Ha
Legend
Watershed Boundary
Village Boundary
2C2A7c2c
TYPE
BAND
DRAINAGE
Kaccha Road
Pakka Road
POND
Field
0
0.4
0.8
1.6 Kilometers


LANDUSE MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Karahiya
Microwatershed Code : 2C2A7c2e
Total Geographic Area : 1307.48 Ha
N
80°21'30"E
80°22'0"E
80°22'30"E
80°23'0"E
80°23'30"E
80°24'0"E
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
25°36'30"N
25°36'0"N
25°35'30"N
Legend
Watershed Boundary
Village Boundary
2C2A7c2e
TYPE
Drainage
Kaccha Road
Field
0 0.35 0.7 1.4 Kilometers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80°22'30"E
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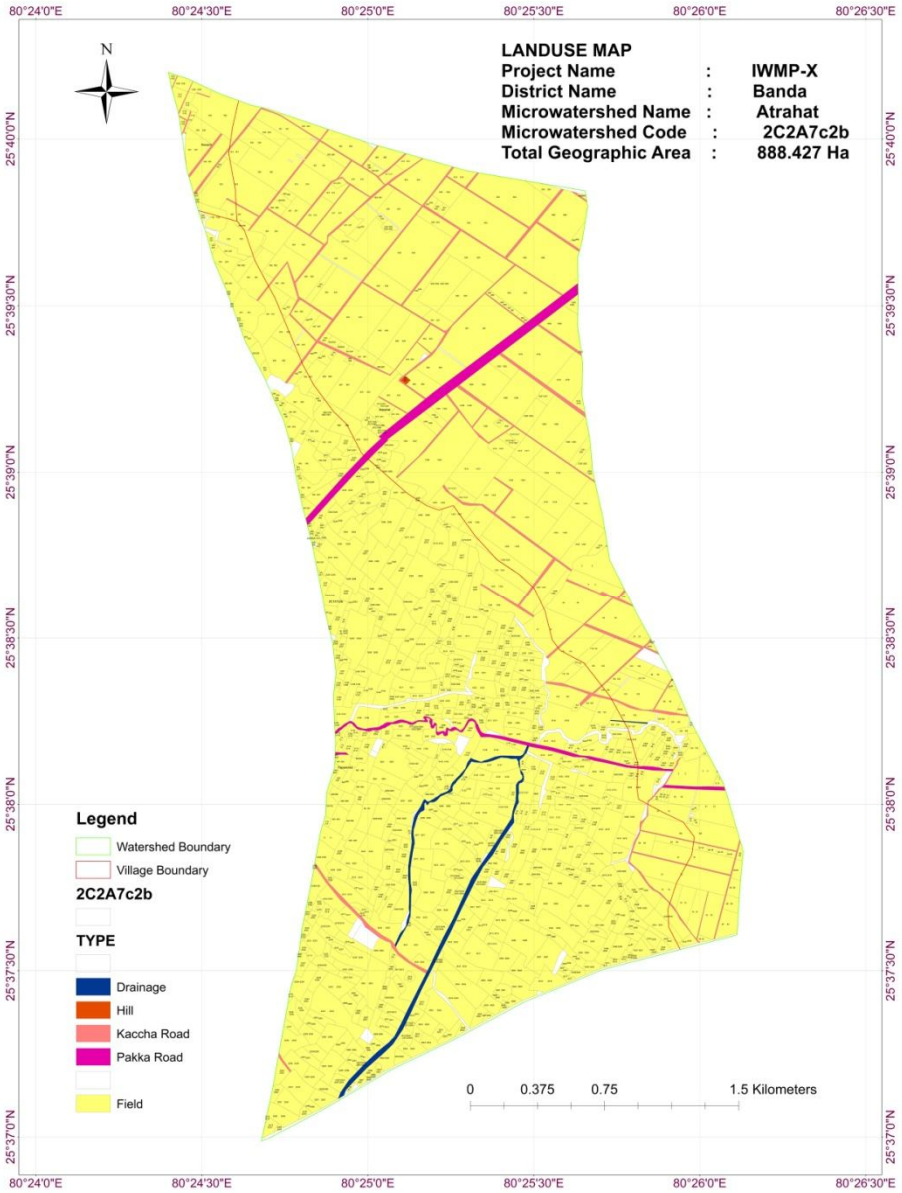
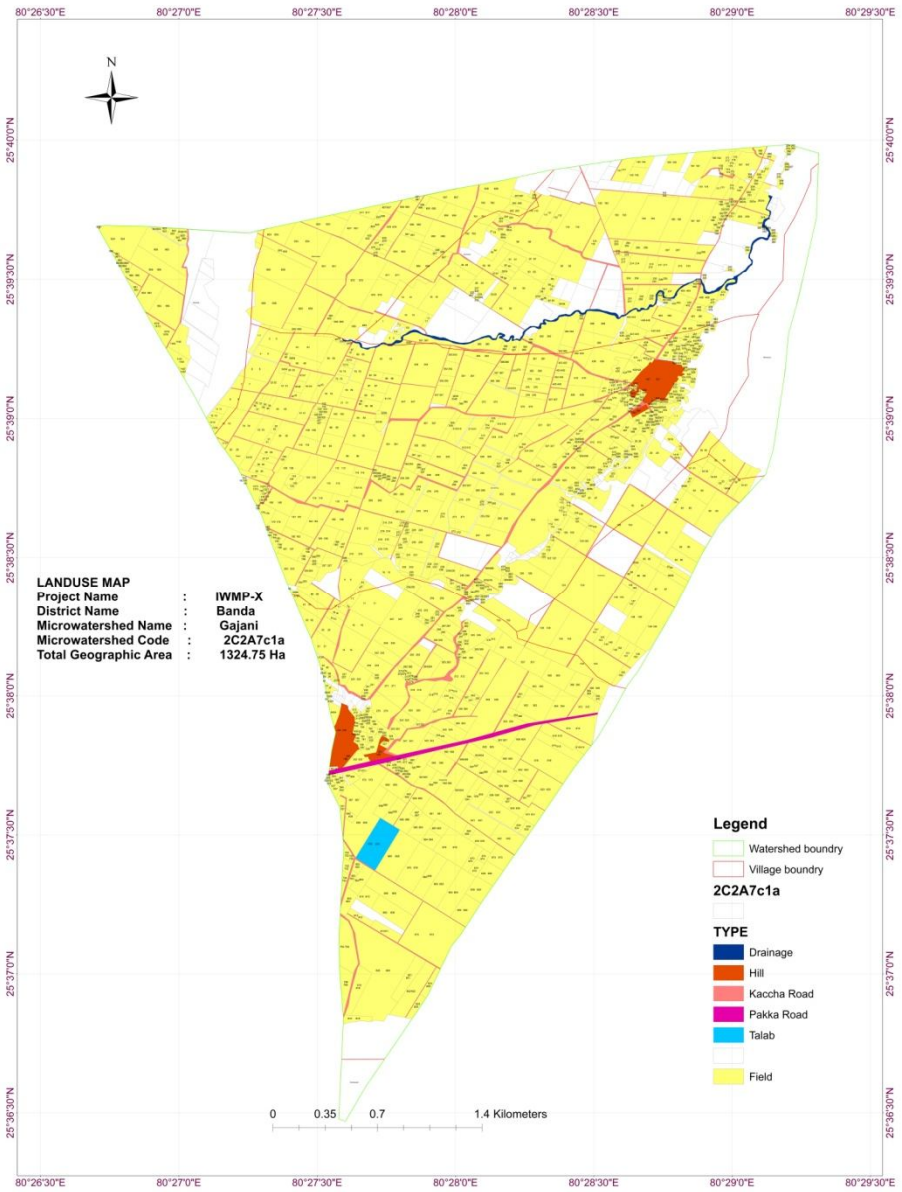
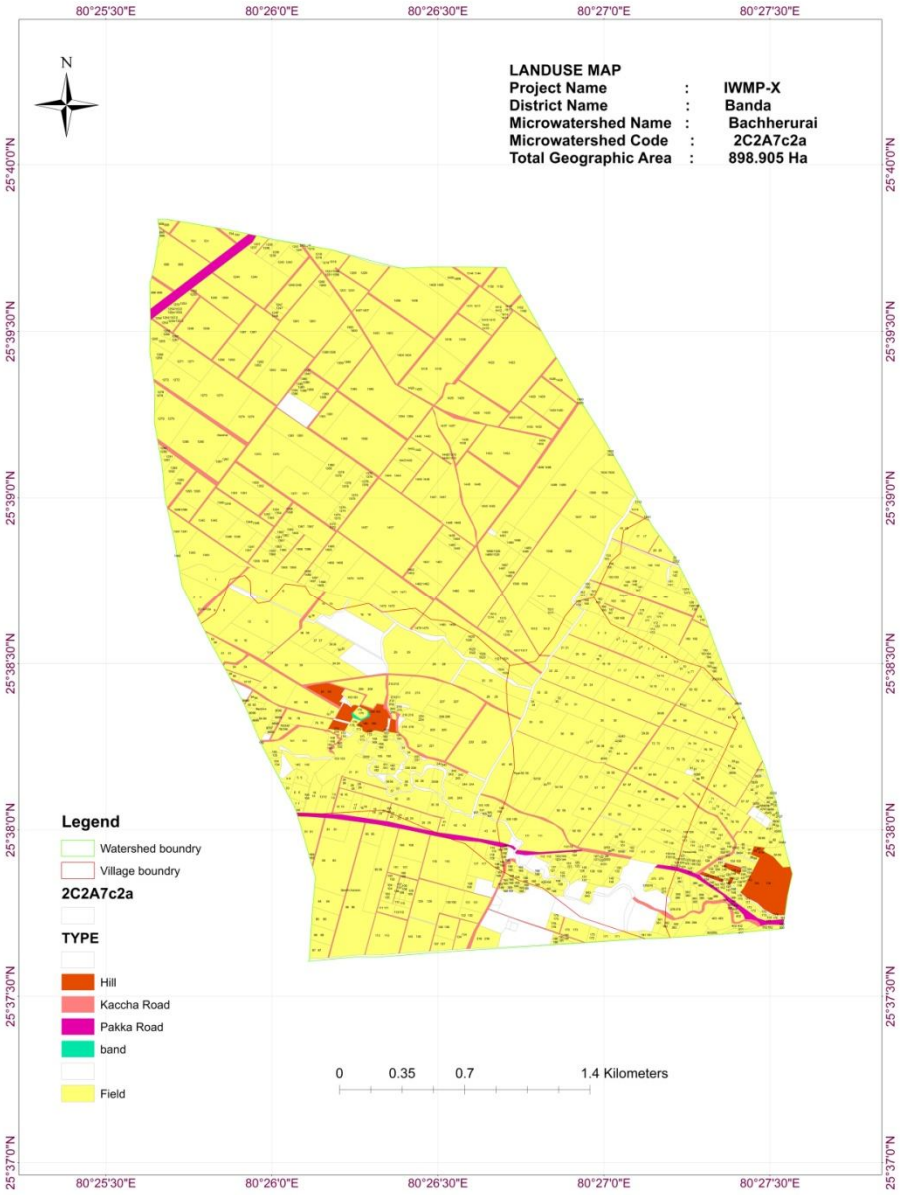
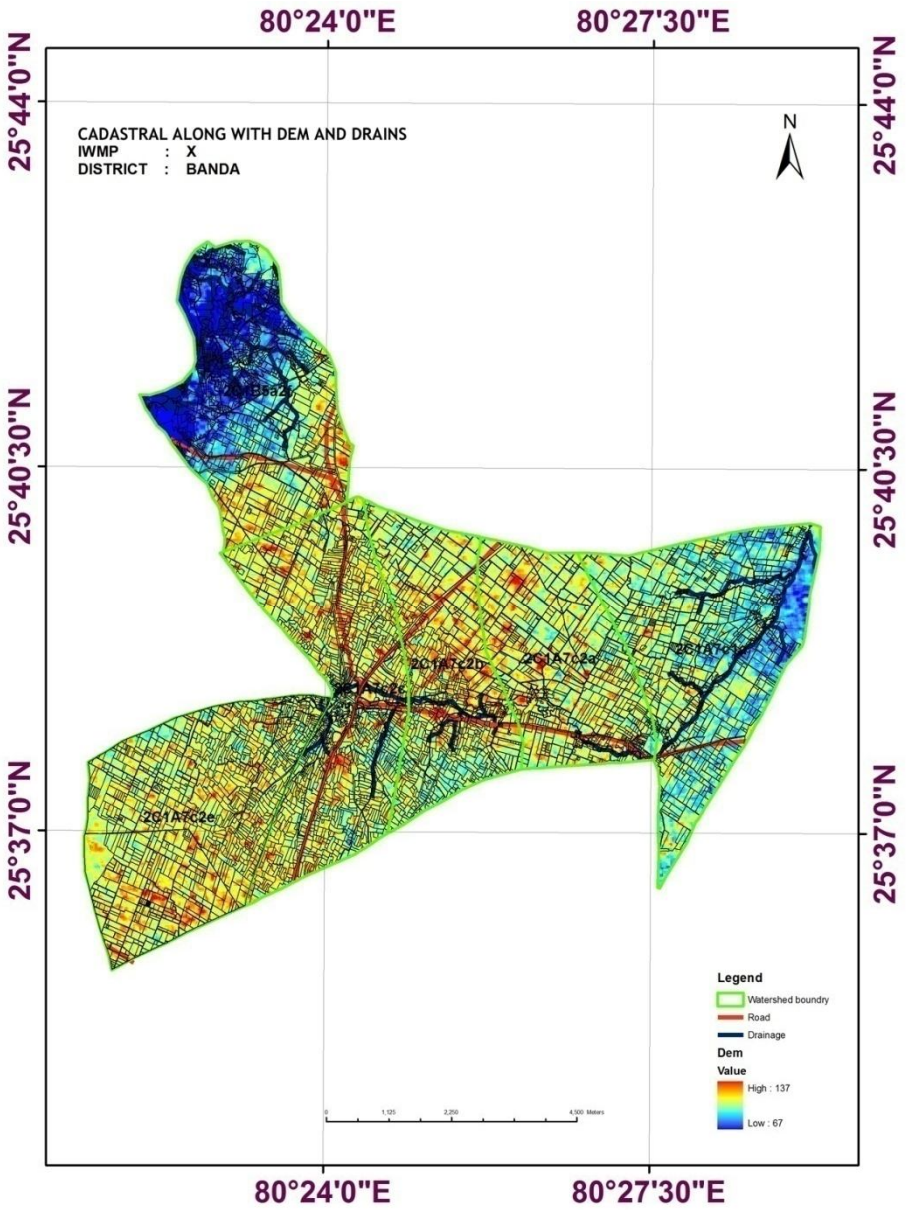
25°43'0"N
25°42'30"N
25°42'0"N
25°41'30"N
25°41'0"N
25°40'30"N
25°40'0"N
N
LANDUSE MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Khapta Kalan
Microwatershed Code : 2C1B5a2f
Total Geographic Area : 1236.180 Ha
Legend
Watershed Boundary
Village Boundary
TYPE
Drainage
Kaccha Road
Pakka Road
POND
Field
0
0.375
0.75
1.5 Kilometers


LANDUSE MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Atrahat
Microwatershed Code : 2C2A7c2b
Total Geographic Area : 888.427 Ha
N
80°24'0"E
80°24'30"E
80°25'0"E
80°25'30"E
80°26'0"E
80°26'30"E
25°40'0"N
25°39'30"N
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
Legend
Watershed Boundary
Village Boundary
2C2A7c2b
TYPE
Drainage
Hill
Kaccha Road
Pakka Road
Field
0 0.375 0.75 1.5 Kilometers


80°26'30"E
80°27'0"E
80°27'30"E
80°28'0"E
80°28'30"E
80°29'0"E
80°29'30"E
25°40'0"N
25°39'30"N
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
25°36'30"N
N
LANDUSE MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Gajani
Microwatershed Code : 2C2A7c1a
Total Geographic Area : 1324.75 Ha
Legend
Watershed boundry
Village boundry
2C2A7c1a
TYPE
Drainage
Hill
Kaccha Road
Pakka Road
Talab
Field
0
0.35
0.7
1.4 Kilometers


80°25'30"E
80°26'0"E
80°26'30"E
80°27'0"E
80°27'30"E
25°40'0"N
25°39'30"N
25°39'0"N
25°38'30"N
25°38'0"N
25°37'30"N
25°37'0"N
N
LANDUSE MAP
Project Name : IWMP-X
District Name : Banda
Microwatershed Name : Bachherurai
Microwatershed Code : 2C2A7c2a
Total Geographic Area : 898.905 Ha
Legend
Watershed boundry
Village boundry
2C2A7c2a
TYPE
Hill
Kaccha Road
Pakka Road
band
Field
0 0.35 0.7 1.4 Kilometers


80°24'0"E
80°27'30"E
25°44'0"N
25°40'30"N
25°37'0"N
CADASTRAL ALONG WITH DEM AND DRAINS
IWMP : X
DISTRICT : BANDA
N
2C1A7c2a
2C1A7c2b
2C1A7c2c
2C1A7c2d
2C1A7c2e
Legend
Watershed boundry
Road
Drainage
Dem
Value
High : 137
Low : 67
0
1,125
2,250
4,500 Meters