

DETAILED PROJECT REPORT

INTEGRATED WATERSHED MANAGEMENT PROGRAMME

NAME OF PROJECT: Churu (IWMP) VI/2009-10

AREA OF PROJECT : 4942 Hactare

COST OF PROJECT : 741.30 Lakhs

BLOCK :- Ratangarh

DISTRICT :- Churu

DEPARTMENT OF SOIL & WATER CONSERVATION, JAIPUR (RAJASTHAN)

DETAILED PROJECT REPORT

INTEGRATED WATERSHED MANAGEMENT PROGRAMME

NAME OF PROJECT (AS PER GOI)	:	Churu (IWMP) VI/2009-10
LOCAL NAME OF PROJECT	:	Parasneu
No. of Macro W/S / No. of Gram Panchayat	:	1
Atlas Code of Macro W/S / Name of Gram Panchayat	:	Parasneu
No. of Micro W/S / No. of Village	:	1
Atlas Code of Micro W/S / Name of Village	:	Parasneu
AREA OF PROJECT	:	4942 Ha.
COST OF PROJECT	:	741.30 Lakhs
BLOCK	:	Ratangarh
DISTRICT	:	Churu

DEPARTMENT OF SOIL & WATER CONSERVATION, JAIPUR (RAJASTHAN)

CHAPTER - I

INTRODUCTION

The declining per capita land and fresh water availability coupled with soil erosion and depleting /degrading land and water resources are posing serious threat to food, environmental, social and economic security in the country. Rainfed areas that constitute about two-third of nations 142 million hectare cultivated land are inhibited by resource poor farmers who with low levels of productivity suffer the most from such degradation and vagaries of nature. It is estimated that rainfed areas contribute only 45% to total food grain production whereas area account for 37% of cultivated land but contribute 55% to total food grain production. With the projections made, about 20mha additional land is likely to be brought under irrigation. But nearly 69mha will still be left under rainfed condition. The Green revolution by passed the rainfed regions, remaining confined primarily to the irrigated plains. To usher in the era 'Ever Green Revolution' sustainable development of these rainfed areas to enhance their productivity with effective resource conservation and improved rainfed technology seems to be principle vehicle. This would also help in achieving the target of over 4% agricultural growth envisaged in the National Agriculture Policy. This requires concerted efforts for efficient utilization of resources in all rainfed-farming ecosystems in the central plains, hills, semi arid and coastal regions.

(i) About Project

Location & General features of watershed/cluster/project

Churu VI project falls in Churu District of Rajasthan. The geographical area of this project is 4942 ha and it comprises of Golsar Gram pnnchayat covering 2 villages. The area lies between latitude of 28⁰ 4' to 28⁰ 2' N and longitude of 74⁰ 37' to 74⁰ 21' East.

Churu VI project is located in Ratangarh Block, Churu District of Rajasthan state. The project is a cluster of Golsar and Hansasar villages with 00644400 & 00644500 being their respective codes. The total Village area of the project (Cluster/watershed) is about 4942 Ha, out of which 4942 Ha has been undertaken to be treated under Integrated Watershed Management Programme (IWMP) starting year 2009-10.

The nearest town is Ratangarh which is about 25 Km from the project area and is well connected by *pucca* road. *Rajput, Jaat* and *SC* communities are the primary inhabitants of the village. The livelihood of these people is primarily based on rainfed agriculture, animal husbandry, wage labour, goat and sheep rearing. It is a very poor and desolate village of India.

Average annual rainfall of the area is 290 mm and most of its parts get washed away in the form of wind erosion which also carries valuable top soil. Most of the residents of the project area are dependent on agriculture and animal produce. Area being rainfed and excess rains and early recession of rains causes the failure of crops. The economic condition of the people is poor.

Present status of land use of the project

Details of land use pattern of the project area is given below :-

Land use pattern of the project

S.No	Land Use Details	Area (ha)	% to geographical area
1	Total Geographical area	4942	100
2	Forest	0	
3	Non agriculture use	140	2.8
4	Barren & unculturable land	0	
5	Area unfit for cultivation (3+4)	140	3.0
6	Cultivable wasteland	25	.50
7	Pasture and other grazing lands	94	1.9
8	Other uncultivated land excluding fallow lands (6+7)	119	2.4
9	Fallow (Other fallow +Current fellow lands)	0	
10	Net Area sown	4560	92.27
11	Total cropped Area	4620	93.48

12	Area sown more than once	185	3.7
13	Net area Irrigated	185	3.7
15	Rainfed cultivable land (6+9+10-13)	4400	89.03

Present status of rain water storage of the project

Details of Rain Water Storage of the project area is given below :-

Details of Rain Water Storage

S. No.	Source	No. of source	Capacity (in litre)	Qty (in litre)	Availability of water (in month)
1	Kachha Johar/Talaab	10	7,65,000	76,50,000	5
2	Pacca Johar/Talaab	3	7,65,000	22,95,000	8
3	Individual Farm Pond/Taanka	80	20000	16,00,000	8
4	Roof Top Rain Water Harvesting Structure	8	10,000	80,000	6
	Total	101		116,25,000	

Soil Erosion

Being general soil texture light and coarse sandy, highly permeable and without any streams contributing runoff, no water erosion is reported but large amount of wind erosion takes place in total project area of 4942.Hactare. The data regarding about wind erosion are not available.

Details of soil erosion in the project area

1	2	3	4	5
Cause	Type of erosion	Area affected (ha)	Run off (mm/ year)	Average soil loss (Tonnes/ ha/ year)
Water erosion				
a	Sheet		There is no runoff producing storm in the district	
b	Rill			
c	Gully			
Sub-Total				

Wind erosion	4942	Data regarding about wind erosion are not available
Total	4942	

Socio Economic Status

Churu VII watershed project has a total of 738 households with a population of 4577 (*as per base-line survey*) out of which 2442 are male and 2135 female .The sex ratio is 874 female to 1000 male. There are 187 BPL families. The average family size is 6. The literacy rate is very low *i.e.* 56 per cent. Male literacy rate is 58.5 per cent (of total male population) and female literacy rate is as low as 53.5per cent (of total female population). The major castes in the village are Jaat, Rajput, Sharma and Schedule Caste . Majority of population is involved in agriculture and animal husbandry.

Details of Socio Economic indicators are below

1.1 Socio –Economic Indicators

A	Population			
a	Population of the project		4577	By % age
	Male		2442	59.35
	Female		2135	46.64
b	Childern		590	12.89
c	Total Household		3512	76.73
d	BPL Families		1102	24.07
	By Caste			
	General		2212	17.5
	S.C.		1245	20.38
	S.T.		39	
	Density (per sq.kms)		92	
	Decadal growth rate (1991-2001)			
B	Human Development Index parameters			
	Litercy rate all %		56	
	Male		58.5	

	Female		53.5	
	Litercy rate(rural) (M)			
	Litercy rate(rural) (F)			
	Sex ratio		874	
	Human Development index(2007)			
C	Distribution of households			
a	By Land Holding			
b	Marginal Farmers (0- 1ha)		7	
c	Samll Farmers (1- 2ha)		29	
d	Medium Farmers (2 to 4 ha)		98	
e	Big Farmers (more than 4 ha)		335	
f	Average holding size - ha		9	
D	Major occupation			
a	Agriculture		800	46.51
b	Landless labourers/ Agriculture labour		215	12.5
c	Household industrial labour		225	13.08
d	Others labour		480	27.9
e	Total working labour		1720	100
E	Source of Income			
1	Crop production & dairy enterprise			46.51
2	Off-farm income / Other services			27.9
3	Agriculture Labour			12.5
F	Income wise Category of /households/Families(No)			

Human resources indicator are

Population	persons	4577
Density of population	persons per sq. km	92
Male	number	2442
Female	number	2135
Literacy	per cent	56
Sex Ratio female per 1000 male		874
Working Population	per cent of population	1532
Growth rate	per cent	
Percentage distribution of work force		
Cultivators	per cent	46
Agricultural laborers	per cent	14
Household industry manufacturing	per cent	7
Processing, servicing and repairs	per cent	2
Other workers	per cent	29

Problems and Scope of improvement goods/objectives

Problems

- Lack of conservation of rain water, indigenous plants and natural resources.
- Lack of irrigation facilities and lack of water harvesting structures.
- Low fertility and problem of nutrient losses due to wind erosion in summer season.
- Lack of Pasture land.
- Low Rainfall.
- Ground water at 30 to 48m depth & having 1800 to 3500 TDS.
- Migration
- Low availability of fodder.

- Low Vegetation.
- Low of agriculture production.
- Poor socio-economic condition of the farmers.
- Lower level of mechanisation in the watershed area.

Objectives

- Awareness building regarding conservation of rain water, indigenous plants, natural resources and to adopt bio compost etc.
- Regeneration of ecology by increasing vegetation i.e. conserving the medicinal plants, agro forestry and horticulture plants.
- Bridging ecological cycle by concentrating on eco-friendly land use methods, forestation, animal husbandry, land revitalization and efficient use of harvested water
- Increase the availability of biomass for consumption and market purpose (food, fodder, firewood, fiber and fertilizer)
- Ensure year round availability of employment opportunities and economic avenues particularly for women and landless
- Revitalization of traditional practices like organic manuring, soil fertility management through crop rotations by utilizing new crops and technologies i.e. vermi culture etc.
- To promote the villagers for conservation of plants & for Pasture land increase in vegetation cover.
- Establishment of ECO CLUBS in the village for sharing the knowledge regarding biodiversity.

Institutional Arrangements

State Level Nodal Agency (SLNA)

The State Level Nodal Agency (SLNA) is a nodal agency at level for Monitoring, evaluation, providing technical support to District Watershed Development Units (DWDU) and to oversee the smooth implementation of watershed projects in the state. The Additional Chief Secretary (Development) is the chairperson of the SLNA. The SLNA has dedicated and experienced staff, a technical expert and a multidisciplinary team. The objectives of the SLNA are supervising, planning, implementing, documenting and promoting watershed development projects and related developmental activities in the state as per guidelines.

State level Nodal Agencies (SLNAs)

Details of SLNA

1 S. No.	2 State	3 Type of SLNA	4 Date of Notification	5 Date of MoU with DoLR	6 Total no. of members of SLNA	7		8					
						Chairperson		CEO					
						Name	Designation	Name	Designation	Date of Appointment	Nature of appointment	Tenure (No. of years)	Contact Ph. No./ Fax/ E-mail
1	Rajasthan	Government Department	3/2/2009		27	Mr. B.B. Mohanty	Additional Chief Secretary (Development)	Mrs. Pramila Surana	Director Watershed Development and Soil Conservation & CEO SLNA	12/31/2010	Director Watershed Development and Soil Conservation & CEO SLNA from IAS cadre		0141-2227189/ 2227858 dir_wdsc@dataone.in

Details of functionaries in the SLNAs

List of Officers/Officials working in SLNA/
Directorate

S.No.	Names & Designation	Designation	Qualification	Experience	Work allocation	Monthly remuneration (Rs.)	Total budget of SLNA(lacs.)
							R
1	Sh.C.S.Mehta	Additional Director	B.E.Agri	38 years	Adll. Dir.(HQ)	53900	
2	Sh. D K Yadav	Jt.Director	B.E.Agri	37 years	MIES	51075	
3	Sh.Anil Mogra	Dy.Director	B.E.Agri	32 Years	Training	40297	
4	Sh.Rajesh Bhandari*	Dy.Director	B.E.Agri	32 years	IWMP	37190	
5	Sh.M.L.Barupal	Dy.Director	B.E.Agri	18 Years	NWDP	39169	
6	Sh.J D Meena	Dy.Director	B.E.Agri	38Years	Quality Control	44500	
7	Sh B L Verma	Dy.Director	B.E.Agri	18 Yrs	D.D.(Adm)	39169	
8	Sh Arun Surana	Dy.Director	B.E.Agri/MBA	24 Yrs	Livelihood Expert	42000	
9	Sh N S Rathore	Dy.Director	MSc Agri	20 Yrs	Agriculture Expert	40000	
10	Sh. A.S.Gehlot	AEN	B.E.Agri	11 Years	Training	37230	

11	Smt.Susheela Yadav	AEN	M.E.(IWM)	12 Years	Project Formulation & IWMP	33371
12	Sh.Vimal Gupta	CAO	M.A, M.Phill,	24 years	Accounts	45047
13	Mrs Sangeeta Rathore	AO	B.Com	10 years	Accounts	42839
14	Sh. R.S. Meena	AAO	B.Com	28 years	Accounts	34901
15	Sh.Gyarsi Lal	AAO	M.A	31 years	Accounts	31535
16	Sh. Prabhakar Saraswat*	JEN	B.E.Agri	13 Years	Data cell	17129
17	Sh. R.K.Vijay	JEN	B.E.Agri/MBA	13 Years	Training	20410
18	Sh. Nitin Srivastava	JEN	B.E.Agri/MBA	13 Years	IWMP	20410
19	Sh. Pawan	JEN	M CA /B.E.Agri	14 Years	RD	20410
20	Sh.Tarun Bhatnagar	JEN	M Tech /B.E.Agri	13Yrs	IWMP	20410
21	Sh.Vijay Agnihotri*	Investigator	M.Sc.Statistics, PGDCA	30 Years	Data supporting	34603
22	Sh. Ashok Kumar Tailor	Legal Asstt.	M.Com LLM	8 Years	Legal work	22064
23	Sh Rajesh Kumar	ACP	MA	18 Yrs	Data cell	35600
24	Sh Pukhraj Bumb	Programmer	MA	22 Yrs	Data cell	25400
25	Sh. Anil Jain	Asstt.Prog.	B.Com	15 Years	Computer supporting	22504
26	Sh. Gajadhar Sharma	Jr.Acctt.	B.Com	13 Years	Accounts	25500
27	Sh.C.M.Regar	Jr.Acctt.	M.Com	14 Years	Admn. Supporting	24422
Supporting staff (6 P.A.,6 Steno,10 UDC,20 LDC,1 Driver,23 Class IV)						

Persons to be hired on contract / deputation						
28			Technical Expert(Animal Husbandry / Capacity Bldg.)	Veternery Doctor		50000
29			GIS Expert			40000
30			Data Entry Operator(3 posts)			45000
36			Jr. Accountant (3 posts)			84000

Funding expected from DoLR (Rs)*		
<i>Strengthening of State Data Cell</i>		
For the salaries, TA, O.E. and other expenses for the hired persons	R	NR
For strengthening of SLNA in terms of consultancy, workshops, R&D, strengthening, MEL, Softwares & Hardwares	90 lacs	40 lacs

* Also included in strengthening of SLAN mentioned in PPR 2

Details of State Level Data Cell (SLDC) functionalities

List of Officers/Officials working in Commissionrate

S.No.	Total no. of persons working in the SLNA for IWMP	Names & Designation	Designation	Qualification	Experience	Work allocation	Monthly remuneration (Rs.)
1	Given in PPR1	Sh.D K Yadav	Jt.Director	B.E.Agri	37 years	Data Cell, Monitoring and supervision	51075
2		Sh. Prabhakar Saraswat	JEN	B.E.Agri	13 Years	Data cell	17129
5		Sh.Vijay Agnihotri	Investigator	M.Sc.Statistics, PGDCA,	30 Years	Data supporting	34603
6		Sh.Raju Gorana	P.A	Hr.Secondary	16 Years	Dictation work	22843
10		Sh.Bheema Ram Meena	CLASS IV	Literate	36 Years	Peon	14187

Funding expected from DoLR (Rs)*

<i>Strengthening of State Data Cell</i>		R	NR
For the salaries, TA, O.E. and other expenses for the hired persons and AMC charges for equipments already precured.		Proposal to be sent seperately	
For strengthening of SLNA in terms of consultancy, workshops, R&D, strengthening, MEL, Softwares & Hardwares		Proposal to be sent seperately	

All expenses already considered in PPR-2

District Watershed Development Unit (DWDU)

The District Watershed Development Unit (DWDU) is a district level nodal agency to oversee the smooth implementation of watershed projects in the district. The Project Officer (Land Resource) is the chairman of the DWDU. The DWDU has dedicated and experienced staff comprising one Project Manager, a technical expert and a multidisciplinary team. The objectives of the DWDU are supervising, planning, implementing, documenting and promoting watershed development projects and related developmental activities in the district as per guidelines.

DWDU

S. No.	Name of Project	Details of DWDU	
1	Churu VI	(i) Type of organization	District Level Nodal Agency
		(ii) Name of organization	DWDW, Churu
		(iii) Designation & Address	Project Manager, DWDU, Churu
		(iv) Telephone	
		(v) Fax	
		(vi) E-mail	dwdu.churu@gmail.com

Staff at DWDU level									
S. No.	Name	Age	Sex	Designation	Qualification	Experience	Govt. Servant/ on Contract	Mobile No.	E-mail
1	Rajesh Kumar	42	M	Project Manager	B. E. (Agri.)	18	Govt. Servant	9783451780	Dhimaanrajesh@gmail.com
2	Hari Singh Sekhawat	60	M	Accountant	Graduate	33	on contract	9314580470	
3	Gheesa Ram Kumawat	30	M	L. D. C.	12th	12	Govt. Servant	9001727238	
4	Amit Kumar	24	M	Data Entry Operator	B. A.	1	on contract		
5	Tara Singh	45	M	Fourth Class	8th	21	Govt. Servant		

Project Implementing Agency (PIA)

Assistant Engineer, Panchayat Samiti, Ratangarh/Rajgarh has been nominated to act as Project Implementing Agency (PIA) for Project Churu VI. The Project Implementing Agency (PIA) provides necessary technical guidance to the Watershed Committee for the preparation of development plans for the watershed through Participatory Rural Appraisal (PRA) exercise. The PIA undertake community organization and training for the village communities, supervise watershed development activities, inspect and authenticate project accounts, encourage adoption of low cost technologies and build upon indigenous technical

knowledge, monitor and review the overall project implementation and set up institutional arrangements for post-project operation and maintenance and further development of the assets created during the project period. The PIA, after careful scrutiny, shall submit the Action Plan for Watershed Development Project for approval of the DWDU and other arrangements. The PIA shall submit the periodical progress report to DWDU. The PIA shall also arrange physical, financial and social audit of the work undertaken. It will facilitate the mobilization of additional financial resources from other government programmes, such as NREGA, SGRY, Artificial Ground Water Recharging etc. implemented by DRDA, Agriculture, Horticulture, Animal Husbandry, Sericulture and Fisheries Departments during the District Watershed Committee meeting.

Staff at PIA level									
S. No.	Name	Age	Sex	Designation	Qualification	Experience	Govt. Servant/ on Contract	Mobile No.	E-mail
1	Amarsingh Verma	45	M	A. En (MGNREGA)	B. E. (Agri)	20 Yr	Govt. Servant	9414537251	
2	Yasin Mohammad	44	M	J. En	B. E. (Agri)	14 Yr	Govt. Servant	9414390804	

Watershed Development Team (WDT)

. The WDT is an integral part of the PIA and will be set up by the PIA. Each WDT should have at least four members, broadly with knowledge and experience in agriculture, soil science, water management, social mobilisation and institutional building. At least one of the WDT members should be a woman. The WDT members should preferably have a professional degree. However, the qualification can be relaxed by the DWDU with the approval of SLNA in deserving cases keeping in view the practical field experience of the candidate. The WDT should be located as close as possible to the watershed project. At the same time, it must be ensured that the WDT should function in close collaboration with the team of experts at the district and state level. DWDU will facilitate the training of the WDT members.

WDT

S. No.	Name of Project	Discipline	Name	Age	Sex	Qualification	Experience	Mobile No.	E-mail
1	Churu VII	Engineer	Harish Prajapat	24	M	B. E. (Agri)	Teacher	9785498910	hk – chohan@yahoo .com
2		Agriculture Specialist	–						
3		Animal Husbandry	Rohit lanmba	24	M	L. S. A.	No	9924409091	
4		Social worker	–						

Watershed Committee (WC)

It is a committee that is constituted by Gram Sabha to implement the watershed project with technical support of WDT in the Gram Panchayat. This committee is registered under society Registration Act 1860. The Gram Sabha of the Gram Panchayat selects the chairman of the watershed committee with the secretary who will be a paid functionary. A watershed Committee was formed accordingly in Golsar Gram Panchayat. Capacity building training to the watershed committee is given by WDT. The watershed committee has a pivotal role to play during and after the project implementation period.

WC

S. No.	Name of WC	Registration No. & date	Name of Member	Designation	Gender	Category	Qualification	Mobile No.	Bank A/C No.	Name of Bank
1	Watershed Committee Golsar	237 & 04/10/2010	Nirana ram	Chairman	M	SC.			61123526858	SBBJ RAJALDESHAR
2			Kana ram	Member	M	OBC.				
3			surajmal	Member	M	GEN				
4			Rameshvar lal	Member	M	OBC				
5			ramuram	Member	M	SC				
6			Pema devi	Member	F	OBC				
7			Nitu devi	Member	F	OBC				
8			ramuram	Member	M	OBC				
9			Surja ram	Member	M	OBC				
10			Mana devi	Member	F	SC				
11			Prabhu ram	Member	M	OBC				
12			Oma devi	Member	FS	OBC				

Secretary

It is a person that is selected by Gram Sabha on the basis of merit and experience for the following tasks-

- a. Convening meetings of the Gram Sabha, Gram Panchyat, Watershed Committee for facilitating the decision making processes in the context of Watershed Development Project.
- b. Taking follow up action on all decisions.
- c. Maintaining all the records of project activities and proceedings of the meetings of Gram Panchayat, Watershed Committee (WC) and other institutions for Watershed Development Project.
- d. Ensuring payments and other financial transactions.
- e. Signing the cheques jointly with the WDT nominee on behalf of the Watershed Committee.

Secretary

S. No.	Name of Project	Name	Age	Sex	Qualification	Experience	Mobile No.	E-mail
1	Churu VII	BHAGVANA RAM	28	M	MA B. Ed	no		-

CHAPTER – II

I. Basic Features : Socio Economic and Infrastructure

a) Land use and land classification map, land capability map & Present land use

The land capability class of the project area falls under the category of III, IV and VI The details of Land Capability classification as furnished by Remote sensing application centre Jodhpur given below :-

Land capability classification of the project area

S. No.	LCC	Area in Ha.	Area in Sq. Kms.
1	II	72	7.2
2	III	1420	14.2
3	IV	3250	32.5
4	VI	200	7.5
	TOTAL	4942	49.42

The project consists of 4942 ha area of which 89.03 % is under cultivation. Agriculture is purely depending on the monsoon rainfall and single cropped. The net sown area is 92.27 % in the year 2001 Only 3.7 % irrigated area in the project. The Project has approximately 25 ha wasteland 119 ha pasture land which is degraded land/ grazing stable/ and deniable sand dunes of height 6 to 30 meters. The area under the assured means of irrigation in the project is negligible. At some places of the project the irrigation is facilitated through wells.

b) Agriculture and Horticulture Status and fuel availability

Most of the area depends upon rain. In most of the area single crop is grown. The farmers left the fields fallow for few years to regain the fertility of the soil, and then they bring the field under cultivation. Main Crops raised in the Project area are:

1. Kharif : Bajra, Guar, Moth & Moong
2. Rabbi : Wheat , Mustard, and Grams.

Horticulture:

There are no orchards in the Project area. Only few jungli Bers are found in the project area.

Vegetation:

Important trees found in the project area are Khejra (*Prosopis spicigera*), Kikar (*Acacia nilotica*), Neem (*Azadirachta indica*), Hingota (*Balanites rox burghil*), Ker (*Capparis Aphylla*), Shisham (*Dalbergia Sisoo*), Jal-Pilu (*Salvadora oleoides*), Jal Khera (*Salvadora persica*) & Rohira (*Tecomela undulata*).

Important shrubs of the area which deserve mention are Bhui (*Areghna tomentosa*), Kut Kartalia (*Argemone mexicane*), Phog (*Calligonum polygonoides*), Aak (*Calotropis procera*), Senia (*Crotoleria burhia*), Thor (*Euphoriba royleana*), Kheenp (*Laptadenia spartium*), Morali (*Lycium europoem*) & Ber (*Zizyphus mauritiana*).

Several types of grasses are found in this project area viz. Bhurat (*Cenchrus catharticus*), Sewan (*Lasiurus catharticus*), Bura (*Cymbopogan Jwarincosa*), Lampra (*Aristida mutica*). Kucha (*Saccharum griffithii*) & Murat (*Panicum turgidum*).

Cropping Pattern of the Project Area

S.No.	Name of Crop	Kharif			Rabi			Total		
		Irr	Rain fed	Total	Irr	Rain fed	Total	Irr	Rain fed	Total
1	2	3	4	5	6	7	8	9	10	11
1	Bajra		1692.4	1692.4					1692.4	1692.4
2	Moth,		1057.5	1057.5					1057.5	1057.5
3	Moong		423.1	423.1					423.1	423.1
4	Guar		846.2	846.2					846.2	846.2
5	Wheat				45		45	45		45
6	Mustard				25		25	25		25
	Total		4019.2	4019.2	70		70	70	4019.2	4089.2

Irr = irrigated area

Cropping Status

S. No.	Season	Crop Shown	Rain fed			Irrigated			Total	
			Area (ha)	Production (Ton)	Productivity (Kg/ha)	Area (ha)	Production (Ton)	Productivity (Kg/ha)	Area (ha)	Production (Ton)
1	Kharif	Bajra	1692.4	423	250				1692.4	423
		Moth,	1057.5	1586	150				1057.5	1586
		Moong	423.1	40	95				423.1	40
		Guar	846.2	143	170				846.2	143
2	Rabi	Wheat				45	22.5	500		
		Mustard				25	7	280		
		Vegetable								
		Total	4019	764	665	70	29.5	780	4089	834

c) Livestock Status – Animals/milk production/average yield and fodder availability

Almost all households of the Project area keep livestock of one species or other and earn income out of them. The animal husbandry is the most income generating activities in farm household next to crop production. The animals useful in agriculture are camel & buffalo, which are used for ploughing and transportation work. Cows and buffaloes are main milk providing animals. Milk of goat is being used for domestic purpose. Sheep and Goat are fostering for wool and meat. Coak and hen are being fostering for meat and eggs.

Backyard poultry is also an important source of supplemental income for small and marginal farmers. It is expected that farmers can fetch more than Rs.5000 additional income per year per family by maintaining ten hen flocks.

As per basic survey of the project area live stock density per sq. km is 120 and average livestock available with respect to human population is 1.2 Only.

Fodder requirement of Rainfed area, is mainly met out from canal command area of near by the district. As per basic survey of the project area, the pasture land in the project area is 149 ha where as waste land is 20 ha. Fellow land of permanent nature is 0 ha. These lands are opened and scrubbed. The grass / fodder trees are very little and are not fetching the demand of fodder. The grass and fodder are procured during crop season or purchased from the market.

The data regarding to animals, milk production, average yield and fodder availability are given below –

The details of livestock in the project area based on base line survey

Livestock	Project			Annual Production				Yeild per day				Live Stock density per sq. Kms	Ratio with respect to Human population	Availability of fodder (quintals)	Deficiency of fodder (quintals)
	Indi-genous	Crossed breed	Total	Milk (tonns)	Meat (tonns)	Wool (tonns)	Egg (million no.)	Milk (litre)	Meat (Kg)	Wool (Kg)	Egg (No.)				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cows	620	35	655	2.2				6.2				120	1.2	5475	1825
Buffaloes	535		535	4.3				11.7							
Bullocks															
Camel	52		52												
Goat	2015		2015	0.5				1.5							
Sheep	1852		1852			2.3									
Poultry															
Pigs															
Total Livestock	5074	35	5109	7.9				21.7				120	1.2	5475	1825

d) Demography

As per basic survey, project area has a population of 4577 Males constitute 2442 i.e. 59.35% and females 2135 i.e. 46.64% of the population. The project area has an average literacy rate of 56%, lower than the national average of 59.5%. Male and female literacy rate are 58.5% & 53.5% respectively. In the project area, 6% of the population is under 6 years of age. The growth rate against population is 125 %.

Total number of household in the project area are 738. Sex ratio of the project area is 874. Migration from project area is 8%. SC, ST, BPL & Landless population in the project area are respectively 20, 0, 20 & 6 %.

e) Other infrastructure facilities available

Facilities available in the project area are given below :-

Details of infrastructure in the project areas

Parameters		Status			
(i)	No. of villages connected to the main road by an all-weather road	2			
(ii)	No. of villages provided with electricity	2			
(iii)	No. of households without access to drinking water	165			
(iv)	No. of educational institutions: Primary (P)/Secondary (S)/Higher Secondary (HS)/Vocational institution (VI)	(P) 3	(S) 2	(HS) 31	(VI)
(v)	No. of villages with access to Primary Health Centre	1			
(vi)	No. of villages with access to Veterinary Dispensary	1			
(vii)	No. of villages with access to Post Office	1			
(viii)	No. of villages with access to Bank	1			
(ix)	No. of villages with access to Market/Mandis	0			
(x)	No. of villages with access to Agro –industries	0			
(xi)	Total quantity of surplus milk				
(xii)	No. of milk collection centres (e.g. Union (U)/Society (S)/Private agency (PA)/Others (O))	(U) 0	(S) 0	(PA) 0	(O) 0
(xiii)	No. of villages with access to Aanganwadi Centre	2			
(xiv)	Any other facilities with no. of villages (please specify)				
(xv)	Nearest KVK	Sardarsahar 50 Km from Project area			

f) NREGA Status :-

Sr. no.	Name of Gram Panchayt	Total no.of job cards	Activity taken up in 2008-09													
			Category 1		Category 2		Category 3		Category 4		Category 5		Category 6		Category 7	
			Total	Project area	Total	Project area	Total	Project area	Total	Project area	Total	Project area	Total	Project area	Total	Project area
1	Golsar	1594	10	10	0	0	22	22	4	4	9	9	6	6	0	0

Sr. no.	Name of Gram Panchayt	Total no.of job cards	Activity taken up in 2009-10													
			Category 1		Category 2		Category 3		Category 4		Category 5		Category 6		Category 7	
			Total	Project area	Total	Project area	Total	Project area	Total	Project area	Total	Project area	Total	Project area	Total	Project area
1	Golsar	1678	19	19	7	7	0	0	25	25	1	1	0	0	10	10

Sr. no.	Name of Gram Panchayt	Total no.of job cards	Activity taken up in 2010-11													
			Category 1		Category 2		Category 3		Category 4		Category 5		Category 6		Category 7	
			Total	Project area	Total	Project area	Total	Project area	Total	Project area	Total	Project area	Total	Project area	Total	Project area
1	Golsar	1762	9	9	0	0	0	0	120	120	2	2	0	0	6	6

Sr. no.	Name of Gram Panchayt	Total no.of job cards	Activity taken in 2011-12													
			Category 1		Category 2		Category 3		Category 4		Category 5		Category 6		Category 7	
			Total	Project area	Total	Project area	Total	Project area	Total	Project area	Total	Project area	Total	Project area	Total	Project area
1	Golsar	1850	5	5	0	0	0	0	72	72	6	6	0	0	9	9

g) Development Indicators

Stop wind erosion by Selter Belt Plantation and Sand dune

- 1 Stabilization.
- 2 Develope pasture land for villagers to full fill there need of fuel, fodder & stop migration.
- 3 Increase productivity per Ha.
- 4 Stablise livelihood supporting activities to support land less labours.
- 5 Divert cropping patterns form traditional system to horticulture and modern agriculture practices.

- 6 Improve water use efficiency by drip & sprinkler irrigation
- 7 Provide potable water for drinking purpose.
- 8 Rise in water table at down stream side to the harvesting structure.

h) Other Development Schemes in the project area

There are many other schemes running in the Project area. Other development scheme/programme running in the project area are given below :-

S. No.	Name of the Programme/Scheme	Sponsoring Agency	Objectives of the Programme/Scheme	Villages covered
1	Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	Rural Development Department	Employment	Parasneu
2	Indira Awas Yojna (IAY)	Rural Development Department	Housing	Parasneu
3	C M Rural BPL Housing Scheme	Rural Development Department	Housing	Parasneu
3	Swarnjayanti Gram Swarozgar Yojana (SGSY)	Rural Development Department	Loan	Parasneu
4	Total Sanitation campaign (TSC)	Rural Development Department	Sanitation	Parasneu
5	Member of Legislative Assembly Local Area Development (MLA LAD)	Rural Development Department	Development	Parasneu
6	Member of Parliament Local Area Development (MP LAD)	Rural Development Department	Development	Parasneu
7	Thirteenth Finance Commission (TFC)	Panchayati Raj Department	Development	Parasneu
8	State Finance Commission (SFC)	Panchayati Raj Department	Development	Parasneu
9	Swa Vivek	Rural Development Department	Development	Parasneu

10	Gramin Jan Sah-Bhagidari Yogna	Rural Development Department	Development	Parasneu
11	Nirband Yogna	Panchayati Raj Department	Development	Parasneu

II. Technical Features

a) Revenue maps

Revenue maps, constructed by SRSAC Jodhpur is based on 1 : 4000. Revenue records like khsra maps , khasra list has been collected, printed & enclosed in the DPR at the last. Base line map, Cartosat map, Land use map & Land cover map of the project area has been marked by SARSAC Jodhpur & enclosed in the DPR.

b) Topo maps/watershed maps with drainage line/ survey maps (as prescribed and utility)

Topo map traced on plastic sheets and scanned by SRSAC Jodhpur showing all topography of the project area is enclosed below :-
As mentioned above being general soil texture light and course sandy, highly permeable and without any streams contributing runoff, no water erosion is reported but large amount of wind erosion takes place in total project area of 4942 Hactare. The data regarding about wind erosion are not available. Therefore no drainage line map is available in the project area.

c) Hydro-Geological maps / Ground Water status and prospect maps

Ground water of the project area lies in between 40 to 60m depth & having 2300 to 2800 TDS.

S. No.	Well	No.	Depth
1	Dug well	50	40m
2	Deep tube wells	120	60m
	Total	170	

As reported out of 4942 ha area, the potential of ground water in the area 4942 ha is reported as critical. More emphasis on such activities which help in recharging the ground water is needed. Details of critical and safe area is given below :-

d) Slope details

The information provided by Remote Sensing Centre Jodhpur the slope of the area is varying from 0 to 8.%.

e) (i) Available surface runoff based on average rainfall

The soil of the project area is very light, sandy course and highly permeable, neither run off is generated and nor harvested. But only runoff take place from 20% of the average rainfall in johar area, 100% from Daamar Road, 70% from Daamar Road Berms, 100% from roof top of the building/house, 100% from C. C. Road, 80 % from Brick Road (Khurra/Kharanja), 100% from the pacca catchment area of the water harvesting structure already exist. Total surface runoff available in the project area are given below :-

S. No.	Particulars	Area (sqm)	Average Rainfall (m)	Available Runoff (litre)
1	Johar	43037.9	.29	2496204
2	Daamar Road	26000	.29	7540000
3	Roof top of the building/house	23410	.29	6788691
4	Pucca catchment of Water Harvesting Structure	5024	.29	1456960
5	Total	97471	.29	182,81,855

(ii) Surface runoff tapped in existing structures

Surface runoff tapped in existing structure lies in the project area area given below :-

Details of Rain Water Storage

S. No.	Source	No. of source	Capacity (in litre)	Qty (in litre)	Availability of water (in month)
1	Kachha Johar/Talaab	10	7,65,000	76,50,000	5
2	Pacca Johar/Talaab	3	7,65,000	22,95,000	8
3	Individual Farm Pond/Taanka	80	20000	16,00,000	8
4	Roof Top Rain Water Harvesting Structure	8	10,000	80,000	6
	Total	101		116,25,000	

(iii) Balance Available Runoff

Total available runoff of the project area is 182,81,855 litre & runoff tapped in the existing structure is 116,25,000 litre. So balance available runoff to be tapped is 66,56,6,855 Litre.

(iv) Total Demand of water for human & animals in the project area

S. No.	Particulars	No.	Demand of Water (litre)	
			Per person per day	Per year
1	Persons (for drinking purpose)	4577	5.7	9629586
2	Persons (for bathing, washing etc. purpose)	4577	62.9	105076200
3	Cows	620	20	4526000
4	Buffaloes	535	35	6834625
5	Bullocks			
6	Camel	52	30	569400
7	Goat	2015	10	7354750
8	Sheep	1852	10	1203800
	TOTAL DEMAND			13,51,94,361

(v) Net Demand of Water in the Project Area

1. Total Demand of Water in the Project Area :- 13,51,94,361 litre
2. Total Water Available in the Existing Structure in the Project Area :- 116,25,000 litre
3. Total Supply of water by Deptt., NGO & any other agency in the Project Area :- 8,75,63,500 litre
4. Net Demand of Water in the Project Area :- 3,60,05,861 litre
5. Is Net Demand of Water in the Project Area is Greater than the Balance Available Runoff Yes

f) Soil Map and Soil details

As mentioned Project area is a part of great Thar Desert. It is covered with thick mantling sand i.e. 3 to 10 meters high longitudinal dunes trending north east to south west and general slope varies from south to north.

The general texture of the soil is course sandy to sandy loam, red soils in depressions, calcareous that has rapid infiltration rate of water, low human content due to rapid oxidation high salinity. The organic carbon values are almost negligible.

The overall fertility (qualities of N, P, and K) are very less through out the area of the Project. As per **Remote Sensing application centre**, the status of fertility is as under-

Nitrogen	Very Low/Medium
Phosphorous	Very Low/Medium
Potassium	Very Low/Medium

In order to improve the health of the soil , sound agronomic measures such as addition of organic measures, green manuring and crop rotation with stress on legumes and other measures which enhance the humus content of the soil are recommended.

The details of the Area according to depth of soil		
Depth (Cms)	Area in Ha.	Area in Sq. Km.
0.00 to 7.50		
7.50 to 45.00		
> 45.00	4942	49.42
TOTAL	4942	49.42

Soil Profile

Major Soil Classes	Area in Hectares
II	72
III	1420
IV	3250
VI	200
Total	4942

g) Climatic and Hydrological details

The Area of Project is situated at latitude of 28° 4' to 28° 2' N and longitude of 74° 37' to 74° 21' E. The climate of the Project area is dry desert with large variation in temperature. The maximum and minimum temperature of the Project area generally varies from 0°C to 50°C. Relatively humidity is below 30% during south east monsoon period and rises to 60% during the rainy session i.e. in the month of July to September of the year. This Project area comes into extreme temperatures in winters and summers with lowest rain. The recorded minimum and maximum temperatures are 0°C and 50°C respectively. Normal rainfall is only 290 mm / year which is sufficient for growing the crops.

The Climatic & Hydrological details of the project area are given below :-

Climatic and Hydrological informationName of Agroclimatic zone :- **1C****Average Annual Rainfall (mm)**

S. No.	Year	Average Annual Rainfall (mm)
2	2001	297
3	2002	78
4	2003	446
5	2004	250
6	2005	217
7	2006	266
8	2007	415
9	2008	431
10	2009	245

Avg. Monthly Rainfall (Last Ten Years)

S. No.	Month	Rainfall (mm)
1	June	40
2	July	75
3	August	74
4	September	10

Tempreture (Degree C)

S. No.	Season	Max.	Min.
1	Summer Season	50	25
2	Winter Season	20	-2
3	Rainy Season	27	22

Potential Evaporation Transpiration (PET) (mm/day)

S. No.	Season	PET
1	Summer	4 to 20 mm/day (Max.)
2	Winter	2 to 8 mm/day (Min)

i) Erosion details

Being general soil texture light and course sandy, highly permeable and without any streams contributing runoff, no water erosion is reported but large amount of wind erosion takes place in total project area of 4942 Hactare. The data regarding about wind erosion are not available.

Details of soil erosion in the project area

1	2	3	4	5
Cause	Type of erosion	Area affected (ha)	Run off (mm/ year)	Average soil loss (Tonnes/ ha/ year)
Water erosion				
a	Sheet		There is no runoff producing storm in the district	
b	Rill			
c	Gully			
Sub-Total				
Wind erosion		4942		Data regarding about wind erosion are not available
Total		4942		

III. Problems, Demand and Scope for comprehensive area development**a) NRM****Problems**

- Being general soil texture light and course sandy, highly permeable and without any streams contributing runoff, no water erosion take place in the project area. All rainfall water percolate in soil & increases the water table.
- Severe Wind erosion take place in the summer season which washed away a upper productive soil of the project area.
- Low community land as comparitive to total area & deforestation of community land.

- Less vegetative cover
- Ground water depth ranges from 40 to 60 m which is highly deep
- Ground water having a TDS ranging 2300 to 2800 which is not suitable for drinking purpose.
- Average annual rainfall is 290 mm which is insufficient for fullfill the need of the area.
- Potential Evaporation Transpiration (PET) is 8.5 mm/day which transpire most of the water in the air.
- Max. & Min. temperature of the project area is 50 & 0 which is a adverse condition of the project area.
- Land slope having 3 to 10 m which effect on production.

Demand

- 1,75,94,812 litre runoff wants to store for requirement of the project area.
- There should be a barrier to stop wind erosion & protection of productive soil in the project area.
- There should be afforestation in the community land.
- There should be a rich vegetative cover in the project area.
- Ground water depth should be decrease.
- TDS of water should be suitable for drinking purpose.
- There should be a sufficient structure for capturing & storing rain.
- There should be a minimum Potential Evaporation Transpiration (PET) rate.
- There should be a heavy & rich plantation in the project area for favourable climatic condition.
- There should be a work for stabilisation of sand dunes.
- There should be a work for improvement of land.

Scope for development

- No. of artificial catchment & tank can be take up in the project area for capturing runoff & storage of rain.
- No. of vegetative barrier & shelter belt plantation can be take up in the project area against wind erosion & to protect the productive soil of the area.
- All the community land can be take up for afforestation.
- Maximum area can be take up for requirement of vegetation.
- Recharge well can be take up for decreasing ground water depth.
- Maximum rain fall water capturing structure can be take up for improving TDS.
- No. of structure can be take up for capturing & storing rain water.
- Adding zipsum in the soil can be take up for decreasing PET rate.
- Maximum plantatiion can be take up for improving climatic condition.
- Sand Dune Stabilization work can be take up for stabilization of sand dunes.
- Latest scientific methods can be take up for improvement of land.

b) Agriculture and Horticulture Productivity gap analysis

Problems

- Low productive soil of the project area.
- Soil fertility is low
- Agriculture is purely depending on the monsoon rainfall and single cropped.
- Assured irrigation is negligible.
- Low use of fertilizer per unit cropped area.
- Traditional farming methods.

- Lack of adequate farm machinery.
- Lack of finances for farmers.
- Lack of good quality seeds and fertilizers.
- Lack of other facilities such as storage and marketing.

Demand

- There should be some mechanism for improvement of productive soil.
- There should be some mechanism for increase the soil fertility.
- There should be rainfall capturing structure to ensure for double cropping system.
- There should be heavy water storage structure for life saving irrigation.
- There should be some training for farmers for use of fertilizer.
- There should be some training on modern farming methods.
- There should be some demonstration on modern farm machinery.
- There should be some loan facility for fulfill the demand of finances.
- There should be some demonstration on good quality seeds & fertilizer.
- There should be some training on storage of seeds & marketing.

Scope for development

- Suitable number of water harvesting structure can be take up for ensuring double cropping .
- Suitable number of water storage structure can be take up for life saving irrigation.
- Suitable number of training can be take up about benefits of fertilizer.
- Suitable number of training can be take up to aware about modern farming methods.
- Suitable number of demonstration can be take up about benefits of modern farm machinery.
- Demand of finance can be fulfill by loan of bank or society.

- Suitable number of crop demonstration can be take up about good seed & fertiliser.
- Suitable number of trainings can be take up on storage of seed & fertilizer.

c) Live-stock gap of fodder availability

Problems

- Cows and buffaloes are of local breeds.
- Lack of fodder and pasture availability.
- Migration of goats and sheeps.
- Milk production is low.
- No local treatment is available.
- No pure water is available for drinking for live-stock.
- Lack of green fodder.
- Lack of time period of repeat breeding.
- Lack of balanced & nutrient feed in the project area.
- Lack of suitable habitation of live stock.
- Lack of milk marketing in the project area.
- Lack of poultry farming.
- Unawareness of animal health.
- Traditional methods of treatment.
- Cost of feed is greater than production.
- Street animals.
- Unauthorised veterinary practicer by unknown person in the project area.

- Lack of awareness.
- Lack of vaccination.
- Unawareness of animal insurance.

Demand

- There should be a cows and buffaloes of hybrid nature.
- There should be a sufficient fodder & rich vegetative cover in Pasture land.
- There should some way to stop live-stock migration.
- There should some way of increasing milk production.
- There should be a availability of local treatment.
- There should be a pure water for live-stock.
- There should some way of increasing availability of green fodder.
- There should some way of increasing availability of balanced & nutrient feed.
- There should be a training programme on suitable habitation of live-stock.
- There should some way for developing milk marketing.
- There should some training on poultry farming.
- There should some training to aware about animal health.
- There should be a modern method of treatment.
- There should be a sufficient fodder that cost of feed should be less than the production.
- Street animals should be in definate area.
- There should be authorised vetenaty practicener in the project area.
- There should be some training on awareness.
- There should be some camp of vaccination.

- There should be some training on awareness of animal insurance.

Scope for development

- Distribution of improved bull and bull calves for natural services can be take up in the project area.
- A good vegetation programme can be take up in the pasture land.
- A good fodder vegetation programme on field boundry of famers & on common land can be take up to stop live-stock migration in the project area.
- Breed improvement programme can be take up for increase in milk production.
- Vetenary specialist as a WDT can be take up for local treatment.
- No. of rain harvesting structure can be take up for pure water for live-stock.
- Sufficient no. of plantation of fodder plant can be take up for availability of green fodder.
- No. of training can be take up on balanced & nutrient feed, suitable habitation of live-stock, milk marketing, poultry farming, aware about animal health, modern method of treatment, vaccination & animal insurance.
- Castration programme can be take up for street animal.

d) Livelihood & Micro-enterprises

Problems

- The villagers earn their livelihood from animal husbandry and agriculture and during lean seasons they migrate for daily wage in other parts of the state.
- Lack of small enterprises in the project area.
- Lack of Agro based industry in the project area.
- Lack of strengthening of Self Help Group.

Scope for development

- Development of small entrepreneurship such as stitching, embroidery, shops, fragrance sticks, candle preparation, handicrafts.

- Developing Agro based industry such as wool, Papad and Bardi weaving units with equipment and machines for livelihood enhancement.
- Poultry and piggery
- Vermi composting and animal waste as manure
- Fodder bank creation
- Establishment of processing center.
- Self Help Group Formation and there strengthening.

CHAPTER – III

Proposed Development Plan

1- Mobilization , Education, trainings and envisioning for

- Watershed Development Team
- Stakeholders at field level i.e. committee member
- Watershed secretary, SHG and User groups and progressive farmers.
- Vocational trainings for SHG and User Groups
- Capacity building for farmers and other progressive farmers on new interventions in the fields of soil water conservation measures to optimize natural water resources, rain fed agriculture, use of animal waste as manure, invention of water collection ways and use of micro irrigation technique
- Exposure tours
- Trainings on agriculture, horticulture and agro-based micro enterprises and silvi-pastoral approach
- Trainings on the development of livestock especially on improved market access for produce
- Training of the equity distribution of usufruct rights
- Livelihood activities for asset less people

2- Entry Point Activity (EPA)

To establish credibility of the Watershed Development Team and create rapport with the watershed community. Following works have been identified for the Entry Point Activity component, with the consent of the Gram Sabha.

S. No.	Name of Gram Panchayat	Name of Village	Amount Alloted for EPA (Rs. In Lakhs)	Name of the Activity	Estimated Cost (Rs. In Lakhs)
1	Parsneu	Parsneu	29.65	Const. of Pacca Johar at gunsai ji ki oran	6.00
2				Const. of Pacca Johar at kalera	6.00
3				Const. of Pacca Johar at ramsihana	7.10
4				Water recharge well	10.0

3- Watershed Development Works on Arable lands

- New Farm pond (Tanka) of at least 1 lakh liter capacity and plantation
- Repair of private well and farm ponds
- Field bunding for vegetative barrier against wind.
- Road top water harvesting structure.

4- Watershed Development Works on Non arable lands

- Community farm ponds locally Johar a harvesting structure of more than 20 to 30 liters lakh literscapacity based its catchment
- Jal Grahan Koop (recharge well)
- Repair of existing community farm ponds and pucca Johar locally called Tall- A harvesting structures
- Continuous trenching works with sowing of local perennial grass and shrubs and trees
- Shunken ponds/Khet Talai

5- Production System

- Crop Demonstration (high yielding varieties of cereals pulses, oilseed, and vegetable, medicinal, spices, production of good agriculture seed and fodder etc.)
- Horticulture plantation especially at the periphery of farm ponds
- Agro-forestry
- Plantation of in non arable area
- Bio fuel plantation
- Over seeding of grass and legumes

6- Live stock development activities

Live stock development activities will be undertaken in the project area with the help of Animal Husbandry department and selected NGO i.e. BAIF etc and Krishi Vigyan Centers established in the various districts

- a - Breed improvement i.e. rearing and distribution of improved bull and bull calves for natural services
- b- Genetic improvement of defined indigenous livestock breeds through selective breeding, upgrading and replacement of nondescript stock through cross breeding.
- c- Expansion and strengthening of infrastructures to propagate the elite germ-plasm by using modern reproductive technologies through convergence of the programme implemented by line department.
- d- Distribution of improved bucks and rams for improvement of the small ruminants in the district
- e- Animal health camps, animal health care activities viz vaccination, deworming
- f- Promotion of the farmers for producing the good quality fodder seeds and fodder
- g- Castration of scrub bulls and their subsequent replacement by elite bulls in a phased manner.
- h- Conservation of important indigenous breeds and promotion of breeders association / cooperative groups.

7- Livelihood Support

- Development of small entrepreneurship such as stitching, embroidery, shops, fragrance sticks, candle preparation, handicrafts.
- Developing Agro based industry such as wool, Papad and Bardi weaving units with equipment and machines for livelihood enhancement.
- Poultry and piggery
- Vermi composting and animal waste as manure
- Fodder bank creation
- Establishment of processing center.
- Rearing of goats etc.
- Self Help Group Formation and there strengthening.

Consolidation / Exit Strategy

Consolidation and completion of various works, Building the capacity of the community based organizations to carry out the new agenda items during post project period, Sustainable management of (developed) natural resources, up-scaling of successful experience regarding farm production systems/off-farm livelihoods, etc.

Introduction

Consolidation and withdrawal phase is the most important and crucial phase in the participatory development projects. This phase facilitate the users to maintain the project activities in a sustainable manner during the post project period and initiate the new activities by users themselves. In this phase the resources augmented and economic plans developed in Phase II as per common guidelines are made the foundation to create new nature-based, sustainable livelihoods and raise productivity levels. The classification of activities in the three phases must not be understood in a rigid manner. Many of the Phase III activities may even start in many watersheds during Phase I and/or II itself. Phasing of activities needs to have an internal logic and integrity that must flow through the entire action plan. This will depend on a host of factors such as the prevailing initial conditions, needs and possibilities in each village, response of the community etc. Such flexibility must be built into the action plan and is to be seen as a distinguishing feature of common guidelines

2008.

Activities to be undertaken during withdrawal phase

- Consolidation and completion of various works.
- Building the capacity of the community based organizations to carry out the new agenda items during post project period.
- Sustainable management of (developed) natural resources and Up-scaling of successful experiences regarding farm production systems /off-farm livelihoods

Completion various works

All the works initiated should be completed during first half of this phase.

Documentation of successful experiences /project interventions

- Successful stories of the farmers has to be documented either in the form of brochure or video clipping in local language.

Building the capacity of the community based organizations

- To carry out the new agenda items during post project period.
- To manage the developed natural resources.
- Improving the sustainability of various interventions under the project.
- Formal allocation of users right over Common Property Resources (CPRs).
- Collection of user charges for CPRs.
- Repair, maintenance and protection of CPRs.
- Sustainable utilization of developed natural resource.
- Intensification of farm production systems/off-farm livelihoods.
- Promotion of agro-processing and marketing enterprises.
- Maintenance of association including financial and records management.
- Farmers may also be encouraged to develop non pesticidal management, low cost organic inputs, seed farms and links with wider markets to fetch competitive price.
- Project management related aspects.
- Creating awareness about the various government schemes and facilitate them to approach appropriate organization.

Institutional linking with user groups / watershed associations

The PIA should make arrangements to link the watershed association and other user groups with appropriate external institutions for their self sustainability.

- Research, Developmental and Training organizations.
- Marketing agencies for procuring their on farm and off farm products.
- Financial institutions for providing loan in future.
- Any other organizations whom the farmers needed support based on the activities implemented during the project period.

Up scaling of successful interventions

Up scaling of successful experiences / interventions has to be attempted by availing revolving fund under the project as well as credit and technical support from external institutions.

Community enterprises

Community enterprises like a small agri or agro-processing units could be established by availing credit facilities from the financial institutions by watershed associations and the benefit can be used for post project management in addition to watershed development fund.

Formation of Federation

Federations could be formed at the level of a cluster of villages in order to support economic activities at scale. These would further strengthen and activate the linkages established with external resource agencies for knowledge, credit, input procurement, sale of local produce, carrying on processing activities to the point of exports.

Terminal evaluation

Terminal evaluation of project should be attempted by involving user groups for selected interventions on their impact based on pre and post project status. For example, the impact on water resources development could be gauged from additional area brought up under irrigation due to project interventions. Impact of production systems could be gauged from increase in yield. Impact of livestock and fisheries development could be gauged from additional income due to project interventions.

Consolidated project report preparation

Detailed completion report of the project which includes all intervention and activities implemented in the project has to be prepared in detail. The outline of the report will be as follows:

- Introduction and history of the watershed including special problems if any.
- Location, geographical and soils details etc. of the watershed.
- Details and maps of watershed.
- Budget allocation and utilization head wise.
- Details of the interventions, activities etc. implemented in watershed.

- Status of each intervention.
- Impact of interventions.
- Constraints.
- Any other matters PIA would like to highlight.
- Recommendations drawn based on lessons learnt for future use.

CHAPTER – IV

Technical Designs and Estimates

1. Technical Design of Kund/Farm Pond/Taanka of 30,000 litre Capacity

Volume of Kund should be 30.00 Cumec for 300,000 litre capacity

$$\text{Volume} = \pi/4 * (\text{Dia.})^2 * \text{depth}$$

Assuming Diameter of Kund = 3.00 m

$$\text{Then Depth should be} = 30 / \pi/4(3.00)^2$$

Therefore Depth = 4.24 m \approx 4.30 m

Catchment area of Kund should be for 30,000 litre

$$\text{Volume of Water} = \text{Catchment area} * \text{Average Rainfall}$$

Average rainfall of the project area is 290 mm

$$\text{Therefore Catchment area} = 30/0.29 * 0.80$$

Catchment area = 129.31 Sqm

$$(\text{Dia of Catchment area})^2 = 129.31 / \pi/4$$

$$(\text{Dia of Catchment area})^2 = 164.64$$

Dia of Catchment area = 12.83m \approx 13.00 m

DETAILED ESTIMATE (Kund construction)

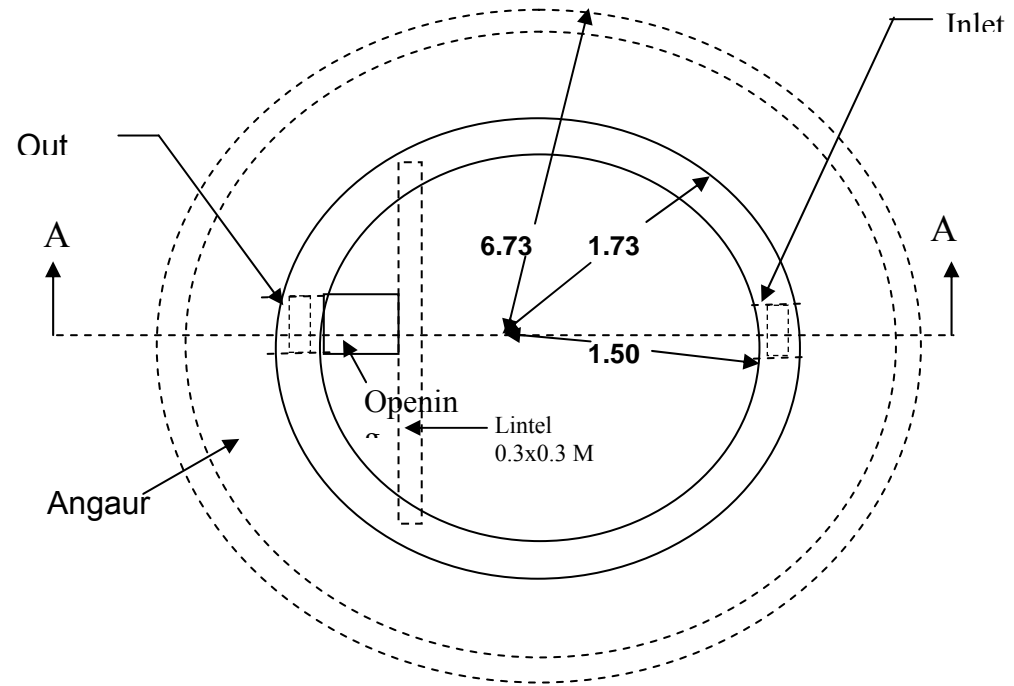
कार्य का नाम :-

Construction of Individual Kund (30,000 litre Capacity)

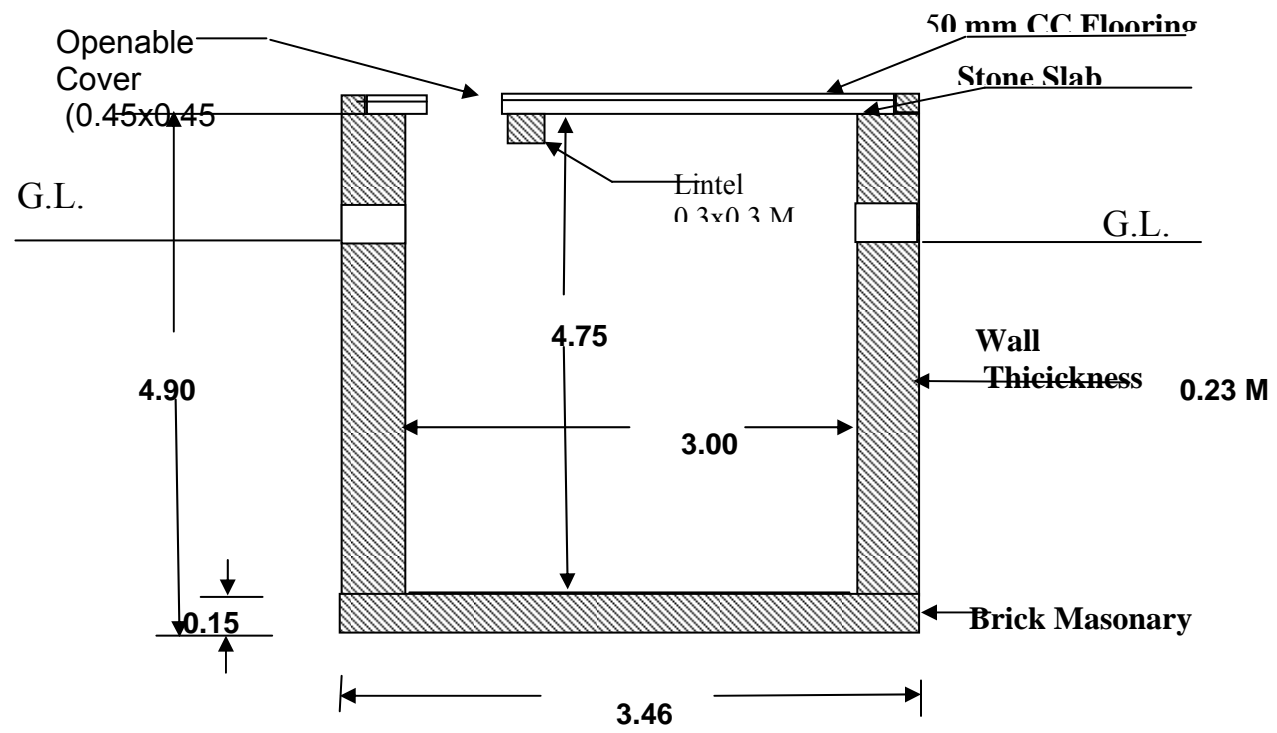
क्र. सं.	विवरण	मात्रा	Rate Labour	Rate Total	Labour	Total
1	कुण्ड की खुदाई का कार्य					
a	खुदाई 0 मी. से 1.5 मी. तक $\pi/4$ (3.46) ² * 1.50	= 14.104 Cum	71 /Cum	71 /Cum	Rs. 1001	Rs. 1001
b	खुदाई 1.5 मी. से 3.0 मी. तक					

C	$\pi/4$	$(3.46)^2 * 1.50$	= 14.104 Cum	82 /Cum	82 /Cum	Rs. 1157	Rs. 1157
	खुदाई 3.0 मी. से 4.5 मी. तक						
2.	$\pi/4$	$(3.46)^2 * 1.50$	= 14.104 Cum	93 /Cum	93 /Cum	Rs. 1312	Rs. 1312
	ईंट की चिनाई का कार्य 1:6						
	$\pi/4$	$(3.46)^2 * 0.15$	= 1.410 Cum				
	$\pi/4$	$(3.46^2 * 3.00^2) * 4.75$	= 11.086 Cum				
	$\pi/4$	$(13.46^2 * 13.00^2) * 0.68$	= 6.500 Cum				
	$\pi/4$	$(13.46^2 * 13.00^2) * 0.07$	= 0.669 Cum				
			19.666 Cum	366.00 /Cum	2354.0 /Cum	Rs. 7198	Rs. 46294
3	लिटल लगाने का कार्य	$2 * 3.00 * 0.30$	= 1.800 Sqm	162 /Sqm	548 /Sqm	Rs. 292	Rs. 986
4	कुण्ड पर पट्टी लगाने का पूर्ण कार्य						
	$\pi/4$	$(3.00)^2 * .45 * .45$	= 6.866 Sqm	370.00 /Sqm	1191 /Sqm	Rs. 2540	Rs. 8178
5	पायतन पर ईंट कंकरीट बिछाने का कार्य mud mortar						
	$\pi/4$	$(13.00^2 * 3.46^2) * 0.10$	= 12.333 Cum	236.00 /Cum	445 /Cum	Rs. 2911	Rs. 5488
6	प्लास्टर का कार्य 1:6 अनुपात में 20mm						
	$\pi/4$	$(3.00)^2$	= 7.069 Sqm				
	π	$* 3.00 * 4.75$	= 44.745 Sqm				
	π	$* 3.46 * 0.50$	= 5.432 Sqm				
			57.246 Sqm	43 /Sqm	93 /Sqm	Rs. 2462	Rs. 5324
7	प्लास्टर का कार्य 1:6 अनुपात में 12mm						
	$\pi/4$	$(13.00^2 * 3.46^2)$	= 123.330 Sqm				
	π	$* 13.00 * 0.07$	= 2.857 Sqm				
	π	$* 13.23 * 0.23$	= 9.555 Sqm				
	π	$* 13.46 * 0.60$	= 25.359 Sqm				
			161.101 Sqm	43 /Sqm	74 /Sqm	Rs. 6927	Rs. 11921
8	Construction of Barbed wire fencing				≈		Rs. 15000
9	किवाड़ व जाली लगाने का कार्य				≈		Rs. 500
योग						Rs. 25799	Rs. 97161
Add 3% for contingencies charges							Rs. 2915
Grand Total						Rs. 25799	Rs. 100075
लागत श्रम मद में				0.258	लाख		
लागत सामग्री मद में				0.743	लाख		
कुल योग				1.001	लाख		

ड्राईंग कुण्ड निर्माण



PI AN



SECTION ON 'A-A'

2. Technical Design of Kund/Farm Pond/Taanka of 50,000 litre Capacity

Volume of Kund should be 50.00 Cumec for 50,000 litre capacity

$$\text{Volume} = \pi/4 * (\text{Dia.})^2 * \text{depth}$$

Assuming Diameter of Kund = 3.80 m

$$\text{Then Depth should be} = 50 / \pi/4(3.80)^2$$

Therefore Depth = 4.40 m \approx 4.40 m

Catchment area of Kund should be for 50,000 litre

Volume of Water = Catchment area * Average Rainfall

Average rainfall of the project area is 290 mm

$$\text{Therefore Catchment area} = 50/0.29 * 0.80$$

Catchment area = 215.52 Sqm

$$(\text{Dia of Catchment area})^2 = 215.52 / \pi/4$$

$$(\text{Dia of Catchment area})^2 = 274.40$$

Dia of Catchment area = 16.56m \approx 17.00 m

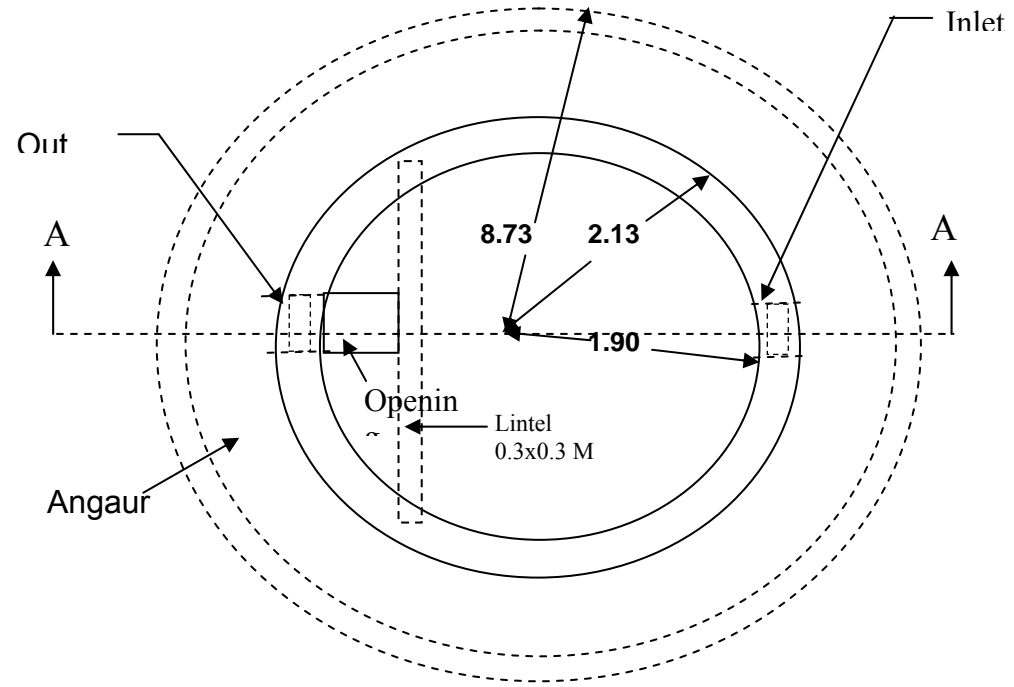
कार्य का नाम :-

Construction of Community Kund (50,000 litre Capacity)

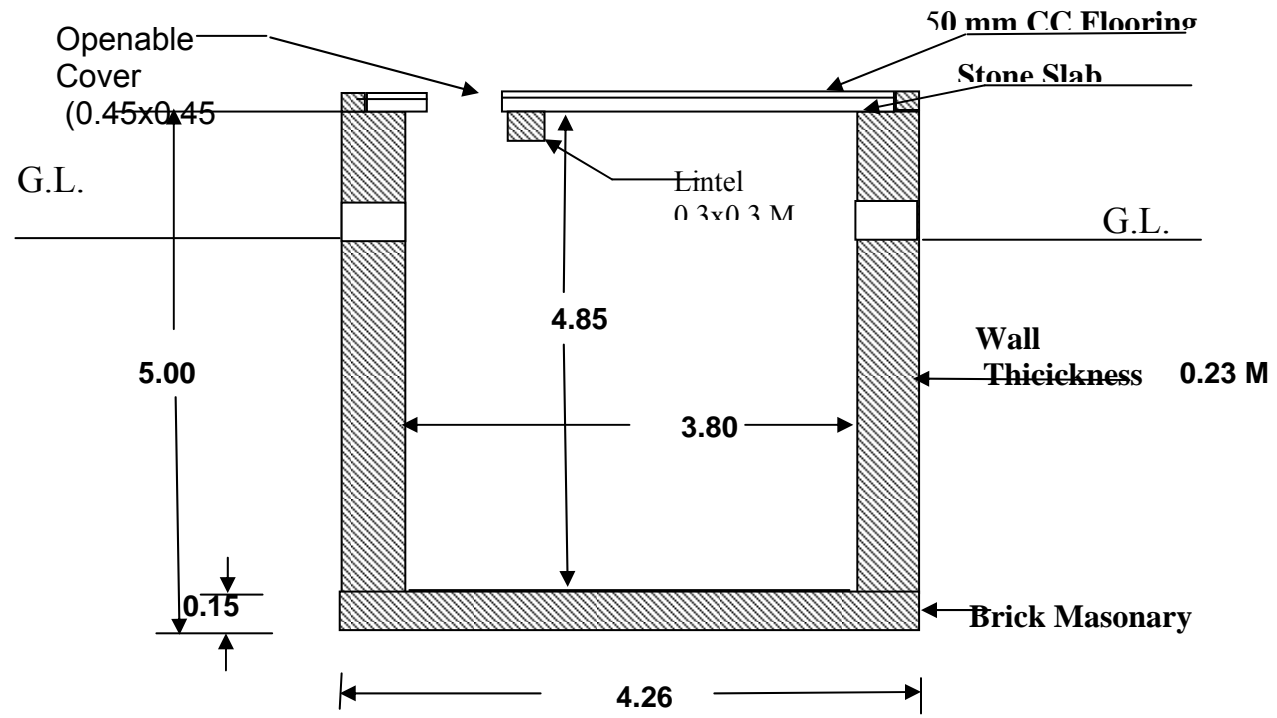
क्र. सं.	विवरण	मात्रा	Rate Labour	Rate Total	Labour	Total
1	कुण्ड की खुदाई का कार्य					
a	खुदाई 0 मी. से 1.5 मी. तक					
	$\pi/4$ (4.26) ² * 1.50	= 21.380 Cum	71 /Cum	71 /Cum	Rs. 1518	Rs. 1518
b	खुदाई 1.5 मी. से 3.0 मी. तक					

C	$\pi/4$	$(4.26)^2 * 1.50$	=	21.380 Cum	82 /Cum	82 /Cum	Rs. 1753	Rs. 1753
	खुदाई 3.0 मी. से 4.5 मी. तक							
2.	$\pi/4$	$(4.26)^2 * 1.50$	=	21.380 Cum	93 /Cum	93 /Cum	Rs. 1988	Rs. 1988
	ईंट की चिनाई का कार्य 1:6							
	$\pi/4$	$(4.26)^2 * 0.15$	=	2.138 Cum				
	$\pi/4$	$(4.26^2 * 3.80^2) * 4.85$	=	14.123 Cum				
	$\pi/4$	$(17.46^2 * 17.00^2) * 0.83$	=	10.333 Cum				
	$\pi/4$	$(17.46^2 * 17.00^2) * 0.07$	=	0.871 Cum				
				27.466 Cum	366.00 /Cum	2354.0 /Cum	Rs. 10052	Rs. 64654
3	लिटल लगाने का कार्य	$4 * 3.35 * 0.30$	=	4.020 Sqm	162 /Sqm	548 /Sqm	Rs. 651	Rs. 2203
4	कुण्ड पर पट्टी लगाने का पूर्ण कार्य							
	$\pi/4$	$(3.80)^2 * .45 * .45$	=	11.139 Sqm	370.00 /Sqm	1191 /Sqm	Rs. 4121	Rs. 13266
5	पायतन पर ईंट कंकरीट बिछाने का कार्य mud mortar							
	$\pi/4$	$(17.00^2 * 4.26^2) * 0.10$	=	21.273 Cum	236.00 /Cum	445 /Cum	Rs. 5020	Rs. 9466
6	प्लास्टर का कार्य 1:6 अनुपात में । 20mm							
	$\pi/4$	$(3.80)^2$	=	11.341 Sqm				
	π	$* 3.80 * 4.85$	=	57.870 Sqm				
	π	$* 4.26 * 0.50$	=	6.688 Sqm				
				75.900 Sqm	43 /Sqm	93 /Sqm	Rs. 3264	Rs. 7059
7	प्लास्टर का कार्य 1:6 अनुपात में । 12mm							
	$\pi/4$	$(17.00^2 * 4.26^2)$	=	212.727 Sqm				
	π	$* 17.00 * 0.07$	=	3.737 Sqm				
	π	$* 17.23 * 0.23$	=	12.444 Sqm				
	π	$* 17.46 * 0.75$	=	41.118 Sqm				
				270.025 Sqm	43 /Sqm	74 /Sqm	Rs. 11611	Rs. 19982
8	किवाड़ व जाली लगाने का कार्य							500
योग							Rs. 39980	Rs. 122390
Add 3% for contingencies charges								Rs. 3672
Grand Total							Rs. 39980	Rs. 126061
लागत श्रम मद में					0.400	लाख		
लागत सामग्री मद में					0.861	लाख		
कुल योग					1.261	लाख		

ड्राईंग कुण्ड निर्माण



PI AN



SECTION ON 'A-A'

DETAILED ESTIMATE

कार्य का नाम :-

Construction of Pacca Johar (Pacca Talaab)

Capacity - 15.92 Lakhs litre

क्र.सं.	विशेष विवरण					मात्रा	इकाई	दर		राशि	
		सं.	ल.	चौ.	ऊं/ग.			श्रम	कुल	श्रम	कुल
1	नींव,खाई तथा नाला आदि के लिए 1.5 मीटर गहराई तक मिट्टी की खुदाई करना, तल को कूटना, पानी डालना, बगल को संवारना, खुदी मिट्टी को बाहर निकालना, नीव भरने के बाद खाली स्थानों को पुनः मिट्टी से भरना तथा बची हुई मिट्टी को 50 मीटर की दूरी तक निस्तारण करना ।										
	Ist	$\pi/4$	30.94	30.94	1.5	1127.20					
	Ghat	0.5	10	3.7	1.5	27.75					
	Stair	1	3	2.44	1.5	10.98					
	योग					1165.93	घ.मी.	82.00	82.00	95606.38	95606.38
2do.....		1.5m to 3.00m								
3	Ist	$\pi/4$	30.94	30.94	0.1	75.15					
	Ist	$\pi/4$	20.7	20.7	1.00	336.36					
	IIIst	$\pi/4$	10.7	10.7	0.40	35.95					
	योग					447.46	घ.मी.	93.00	93.00	41613.90	41613.90
	3do.....		3.0m to 4.50m							
4	IIIst	$\pi/4$	10.7	10.7	0.60	53.92					
	योग					53.92	घ.मी.	104.00	104.00	5608.18	5608.18
	4	सीमेंट कांक्रीट 1सीमेंट, 3बजरी तथा 6गिट्टी पत्थर की 20 मि.मी. नामीय माप की नीव मे डालना ।									
4	Bottom	$\pi/4$	30.94	30.94	0.10	75.15					
	Ghat	1	10.00	3.70	0.10	3.70					
	Stair	2	3.00	2.44	0.10	1.46					
	योग					80.31	घ.मी.	322.60	2368.00	25908.25	190175.89

5	प्रथम श्रेणी ईटो की सीमेंट बजरी 1:6 के अनुपात मसाले में चिनाई मय बगल की झिरी बन्द करने तथा तराई समेत पूर्ण कार्य										
	Ist	π	30.47	0.47	1.50	67.49					
	IInd	π	20.35	0.35	1.00	22.38					
	IIIRD	π	10.35	0.35	1.00	11.38					
	Ghat	1	10.00	0.35	1.50	5.25					
	Stair	2	3.00	0.47	1.50	4.23					
	"	1	1.50	0.30	0.15	0.07					
	Pt.	2	10.00	0.35	0.75	5.25					
	Pt.	π	30.35	0.35	0.75	25.03					
					योग	141.07	घ.मी.	366.00	2354.00	51631.08	332075.33
6	सीमेंट प्लास्टर दिवार पर 1:6 अनुपात में सीमेंट बजरी मिलाकर जोड़ो को कुरेदना तथा तराई करना । 20 मि.मी. मोटा										
	Bottom	$\pi/4$	30.00	30.00		706.50					
	Ist	π	30.00	1.50		141.37					
	IInd	π	20.00	1.00		62.83					
	IIIRD	π	10.00	1.00		31.42					
	Pt.	π	30.35	1.85		176.39					
	Ghat	1	10.00	3.00		30.00					
	"	1	10.00	1.50		15.00					
	Pt.	2	10.00	1.85		37.00					
	Stair	2	3.00	1.50		9.00					
	"	2	1.50	1.50		4.50					
					योग	1214.01	व.मी.	43.00	93.00	52202.56	112903.21
7	फोटोग्राफी व नाम लिखवाने का कार्य										500.00
									योग	272570.35	778482.88
									Add 3% Contingencies charges		23354.49
									Grand Total		801837.37
	लागत श्रम मद में									2.73	लाख
	लागत सामग्री मद में									5.29	लाख
	कुल योग									8.02	लाख

Water Harvesting Structure With diversion drain of Road of 200 m

Considering Length of Road =200 m

Width of Road with berms = 5 m

Average Rainfall = 290 mm

Therefore Runoff = 200 * 5.00 * 0.29 * 0.80 = 232.00 Cum = 2.32 Lakhs litre

therefore there should be a WHS at both side of the Road with minimum 1.16 Lakhs litre Capacity

DETAILED ESTIMATE

कार्य का नाम :-

Construction of Water Harvesting Structure

Capacity - 2.01 Lakhs litre

क्र. सं.	विशेष विवरण				मात्रा	इकाई	दर		राशि	
	सं.	ल.	चौ.	ऊं/ग.			श्रम	कुल	श्रम	कुल
1	नींव,खाई तथा नाला आदि के लिए 1.5 मीटर गहराई तक मिट्टी की खुदाई करना, तल को कूटना, पानी डालना, बगल को संवारना, खुदी मिट्टी को बाहर निकालना, नींव भरने के बाद खाली स्थानों को पुनः मिट्टी से भरना तथा बची हुई मिट्टी को 50 मीटर की दूरी तक निस्तारण करना ।									
	Nala	1	225	1	0.75	168.75				
	Ist	$\pi/4$	9.94	9.94	1.5	116.34				
	Ghat	0.5	10	3.7	1.5	27.75				
	Stair	1	3	2.44	1.5	10.98				
				योग	323.82	घ.मी.	82.00	82.00	26553.34	26553.34
2do..... 1.5m to 3.00m									
	Ist	$\pi/4$	9.94	9.94	0.1	7.76				
	Ist	$\pi/4$	6.7	6.7	1.00	35.24				
	IIIst	$\pi/4$	3.7	3.7	0.40	4.30				
				योग	47.29	घ.मी.	93.00	93.00	4398.29	4398.29
3do..... 3.0m to 4.50m									
	IIIst	$\pi/4$	3.7	3.7	0.60	6.45				
				योग	6.45	घ.मी.	104.00	104.00	670.59	670.59
4	सीमेंट कांक्रीट 1सीमेंट, 3बजरी तथा 6गिट्टी पत्थर की 20 मि.मी. नामीय माप की नींव में डालना ।									

	Bottom	$\pi/4$	9.94	9.94	0.10	7.76						
	Ghat	1	10.00	3.70	0.10	3.70						
	Stair	2	3.00	2.44	0.10	1.46						
					योग	12.92	घ.मी.	322.60	2368.00	4168.02	30594.76	
5	प्रथम श्रेणी ईटो की सीमेंट बजरी 1:6 के अनुपात मसाले में चिनाई मय बगल की झिरी बन्द करने तथा तराई समेत पूर्ण कार्य ।											
	Nala	1	225.00	0.91	0.07	14.33						
	Nala	2	225.00	0.23	0.60	62.10						
	Ist	π	9.47	0.47	1.50	20.97						
	Iind	π	6.35	0.35	1.00	6.98						
	IIIrd	π	3.35	0.35	1.00	3.68						
	Ghat	1	10.00	0.35	1.50	5.25						
	Stair	2	3.00	0.47	1.50	4.23						
	"	1	1.50	0.30	0.15	0.07						
	Pt.	2	10.00	0.35	0.75	5.25						
	Pt.	π	9.35	0.35	0.75	7.71						
					योग	130.58	घ.मी.	366.00	2354.00	47792.58	307387.24	
6	सीमेंट प्लास्टर दिवार पर 1:6 अनुपात में सीमेंट बजरी मिलाकर जोड़ो को कुरेदना तथा तराई करना । 20 मि.मी. मोटा											
	Nala	1	225.00	0.45		101.25						
	Nala	2	225.00	0.60		270.00						
	Bottom	$\pi/4$	9.00	9.00		63.59						
	Ist	π	9.00	1.50		42.41						
	Iind	π	6.00	1.00		18.85						
	IIIrd	π	3.00	1.00		9.42						
	Pt.	π	9.35	1.85		54.34						
	Ghat	1	10.00	3.00		30.00						
	"	1	10.00	1.50		15.00						
	Pt.	2	10.00	1.85		37.00						
	Stair	2	3.00	1.50		9.00						
	"	2	1.50	1.50		4.50						
					योग	655.36	व.मी.	43.00	93.00	28180.60	60948.74	

7	फोटोग्राफी व नाम लिखवाने का कार्य					500.00
				योग	111763.42	431052.96
				Add 3% Contingencies charges		12931.59
				Grand Total		443984.55
	For 2 Stucture					
	लागत श्रम मद में				2.24	लाख
	लागत सामग्री मद में				6.64	लाख
	कुल योग				8.88	लाख

Water Harvesting Structure With diversion drain of Road of 400 m

Considering Length of Road =400 m

Width of Road with berms = 5 m

Average Rainfall = 290 mm

Therefore Runoff = 400 * 5.00 * 0.29 *0.80 = 464.00 Cum = 4.64 Lakhs litre

therefore there should be a WHS at both side of the Road with minimum 2.32 Lakhs litre Capacity

DETAILED ESTIMATE

कार्य का नाम :- **Construction of Water Harvesting Structure**

Capacity - 3.13 Lakhs litre

क्र. सं.	विशेष विवरण				मात्रा	इकाई	दर		राशि	
	सं.	ल.	चौ.	ऊं/ग.			श्रम	कुल	श्रम	कुल
1	नींव,खाई तथा नाला आदि के लिए 1.5 मीटर गहराई तक मिट्टी की खुदाई करना, तल को कूटना, पानी डालना, बगल को संवारना, खुदी मिट्टी को बाहर निकालना, नींव भरने के बाद खाली स्थानों को पुनः मिट्टी से भरना तथा बची हुई मिट्टी को 50 मीटर की दूरी तक निस्तारण करना ।									
	Nala	1	425	1	0.75	318.75				
	Ist	$\pi/4$	12.94	12.94	1.5	197.16				
	Ghat	0.5	10	3.7	1.5	27.75				
	Stair	1	3	2.44	1.5	10.98				
				योग	554.64	घ.मी.	82.00	82.00	45480.88	45480.88
2do..... 1.5m to 3.00m									
	Ist	$\pi/4$	12.94	12.94	0.1	13.14				
	Ist	$\pi/4$	8.7	8.7	1.00	59.42				
	IIIst	$\pi/4$	4.7	4.7	0.40	6.94				
				योग	79.50	घ.मी.	93.00	93.00	7393.24	7393.24
3do..... 3.0m to 4.50m									
	IIIst	$\pi/4$	4.7	4.7	0.60	10.40				
				योग	10.40	घ.मी.	104.00	104.00	1082.06	1082.06
4	सीमेंट कांक्रीट 1सीमेंट, 3बजरी तथा 6गिट्टी पत्थर की 20 मि.मी. नामीय माप की नींव में डालना ।									

	Bottom	$\pi/4$	12.94	12.94	0.10	13.14						
	Ghat	1	10.00	3.70	0.10	3.70						
	Stair	2	3.00	2.44	0.10	1.46						
					योग	18.31	घ.मी.	322.60	2368.00	5906.26	43354.11	
5	प्रथम श्रेणी ईटो की सीमेंट बजरी 1:6 के अनुपात मसाले में चिनाई मय बगल की झिरी बन्द करने तथा तराई समेत पूर्ण कार्य ।											
	Nala	1	425.00	0.91	0.07	27.07						
	Nala	2	425.00	0.23	0.60	117.30						
	Ist	π	12.47	0.47	1.50	27.62						
	Iind	π	8.35	0.35	1.00	9.18						
	IIIrd	π	4.35	0.35	1.00	4.78						
	Ghat	1	10.00	0.35	1.50	5.25						
	Stair	2	3.00	0.47	1.50	4.23						
	"	1	1.50	0.30	0.15	0.07						
	Pt.	2	10.00	0.35	0.75	5.25						
	Pt.	π	12.35	0.35	0.75	10.18						
					योग	210.94	घ.मी.	366.00	2354.00	77203.30	496548.03	
6	सीमेंट प्लास्टर दिवार पर 1:6 अनुपात में सीमेंट बजरी मिलाकर जोड़ो को कुरेदना तथा तराई करना । 20 मि.मी. मोटा											
	Nala	1	425.00	0.45		191.25						
	Nala	2	425.00	0.60		510.00						
	Bottom	$\pi/4$	12.00	12.00		113.04						
	Ist	π	12.00	1.50		56.55						
	IInd	π	8.00	1.00		25.13						
	IIIrd	π	4.00	1.00		12.57						
	Pt.	π	12.35	1.85		71.78						
	Ghat	1	10.00	3.00		30.00						
	"	1	10.00	1.50		15.00						
	Pt.	2	10.00	1.85		37.00						
	Stair	2	3.00	1.50		9.00						
	"	2	1.50	1.50		4.50						
					योग	1075.82	व.मी.	43.00	93.00	46260.08	100050.86	

7	फोटोग्राफी व नाम लिखवाने का कार्य					500.00
				योग	183325.82	694409.18
				Add 3% Contingencies charges		20832.28
				Grand Total		715241.45
	For 2 Stucture					
	लागत श्रम मद में				3.67	लाख
	लागत सामग्री मद में				10.64	लाख
	कुल योग				14.30	लाख

DETAILED ESTIMATE

कार्य का नाम :- **Const. of Jalgrahan Koop (Recharge Well) of 120 m depth**

क्र. सं.	विवरण	मात्रा	Rate Labour	Rate Total	Labour	Total
1	नींव, खाई, परनाला में 1.5 गहराई तक मिट्टी की खुदाई करना, तल को कूटना, पानी डालना, बगल को संवारना, खुदी मिट्टी को बाहर निकालना, नींव भरने के बाद खाली स्थानों को पुनः मिट्टी से भरना तथा बची हुई मिट्टी को 50 मीटर की दूरी तक निस्तारण करना।					
	$\pi/4 (2.5)^2 * 120.00$	= 589.049 Cum	82 /Cum	82 /Cum	Rs. 48302	Rs. 48302
	Add for Extra lift					
	Rate					
	$120.00 \times 1.5 / 1.5 * 2$					
	= 39.50 * 11 = 434.50					
	$\pi/4 (2.50)^2 * 118.50$	= 581.685 Cum	434.50 /Cum	434.50 /Cum	Rs. 252742	Rs. 252742
2	नींव तथा कुर्सी में 75 वर्ग नाप ईंटों की चिनाई सीमेंट-बजरी 1:6 मसाले में, मय बगल की झिरी बन्द करने तथा तराई समेत।					
	$\pi/4 (2.46^2 - 2.00^2) * 118.00$	= 190.136 Cum				
	$\pi/4 (2.70^2 - 2.00^2) * 3.00$	= 7.752 Cum				
	pillar					
	$2 * 0.60 * 0.60 * 1.20$	= 0.864 Cum				
		198.752 Cum	366.00 /Cum	2354.0 /Cum	Rs. 72743	Rs. 467862
	Add for Extra lift					
	Rate					
	$120.00 \times 4.5 / 4.5 * 2$					
	= 12.83 * 101 = 1296.17					
	$\pi/4 (2.46^2 - 2.00^2) * 115.50$	= 186.108 Cum	159.33 /Cum	1296.17 /Cum	Rs. 29653	Rs. 241227
	Add for circular masonry work					
	$\pi/4 (2.46^2 - 2.00^2) * 118.00$	= 190.136 Cum				
	$\pi/4 (2.70^2 - 2.00^2) * 3.00$	= 7.752 Cum				
		197.888 Cum	36.00 /Cum	36.0 /Cum	Rs. 7124	Rs. 7124

CHAPTER – V

Activity Wise Total Abstract of Cost

Chapter V Proposed Development Plan for Parsneu Project

S. No.	Activities	Unit	Total		
			Unit Cost	Phy.	Fin.
1	Admn.	–	–	–	74.1300
2	Monitoring	–	–	–	7.4130
3	Evaluation	–	–	–	7.4130
(A) Preparatory phase					
1	EPA	No.	–	3	29.6520
2	I & CB	–	–	–	37.0650
3	DPR	–	–	–	7.4130
Total (A)		–	–	–	74.1300
(B) Natural resource management					
Conservation measures for arable land					
1	Tanka/Farm Pond (30000 litre Capacity)	No.	1.000	368	368.0600
2	Water Harvesting Structure with diversion drain (2.01 Lakhs litre Capacity)	No.	4.440	2	8.8800
3	Water Harvesting Structure with diversion drain (3.13 Lakhs litre Capacity)	No.	7.150	2	14.3000
Conservation measures for non arable land					
1	Tanka (50000 litre Capacity)	No.	1.260	12	15.1200
2	Pacca Johar (Water Harvesting Structure) (15.92 lakhs litre Capacity)	No.	8.020	2	16.0400
3	Recharge Well (120 m depth)	No.	11.190	2	22.3800
Total (B)					444.7800
(C) Production Measure					
Production measures for arable land					
1	Horticulture plantation	No.			
2	Agro-Forestry plantation	No.			
3	Crop Demonstration	No.			
4	Medicinal Plantation	Ha.			
5	Vegetable Plantation	Ha.			
Production measures for non arable land					
1	Afforestation & Pasture Development				
(D) Live Stock development Activities					
1	Distribution of improved Bull & Bull calves for natural service	No.			
2	Distribution of improved Bucks & Rams	No.			
3	Animal Health Camps	No.			
4	Animal Health Care Activities (Vaccination & Deworming)	No.			
					111.1950

5	Castration	No.			
	(E) Livelihood activities, Production System and Micro Enterprise				
	Activities				
1	Backyard Poultry	No.	-	-	
2	Composting	No.	-	-	
3	Nursery Raising	No.	-	-	
4	Fodder Bank	No.	-	-	
5	Vermi composting	No.	-	-	
6	Handicraft-wool	No.	-	-	
7	Milk Collection Centre	No.	-	-	
8	Micro Enterprises	No.	-	-	
	Total (C D & E)				111.1950
	(F) Consolidation Phase		-	-	22.2390
	Total (F)				22.2390
	Grand Total				741.3000

1	EPA	No.																								0	0.00	
2	I & CB	-	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0	11.12
3	DPR	-	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0	1.85
	Total (A)	-	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	0	12.97
	Grand Total		2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	0.00	4.66	31.50	

Annual Action Plan of III Year

S. No	Activities	Unit	<i>EXPENDITURE (Rs. In Lakhs)</i>																											
			April		May		June		July		Aug		Sep		Oct		Nov		Dec		Jan		Feb		March		Total			
			Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.		
1	Admn.	-		1.24		1.24		1.24		1.24		1.24		1.24		1.24		1.24		1.24		1.24		1.24		1.24		1.24	0	14.83
2	Monitoring	-		0.12		0.12		0.12		0.12		0.12		0.12		0.12		0.12		0.12		0.12		0.12		0.12		0.12	0	1.48
	(A) Preparatory phase																													
2	I & CB	-		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31	0	3.71
	Total (A)	-		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		3.71
	(B) Natural resource management																													
	Conservation measures for arable land																													
1	Tanka/Farm Pond (30000 litre Capacity)	No.	20	20.00	20	20.00	20	20.00													20	20.00	20	20.00				100	100.00	
2	Road Top Water Harvesting Structure (2.01 Lakhs litre Capacity)	No.	1	4.44																	1	4.44						2	8.88	
	Conservation measures for non arable land																													
1	Tanka (50000 litre Capacity)	No.	1	1.26			1	1.26													1	1.26	1	1.26				4	5.04	
2	Recharge Well (120 m depth)	No.	1	11.19																							1	11.19		

	Micro Enterprise																								
	Activities																								
1	Backyard Poultry	No.																							
2	Composting	No.																							
3	Nursery Raising	No.																							
4	Fodder Bank	No.																							
5	Vermi composting	No.																							
6	Handicraft-wool	No.																							
7	Milk Collection Centre	No.																							
8	Micro Enterprises	No.																							
	Total		48.00	23.09	24.35	3.09	3.09	3.09	3.09	3.09	3.09	3.09	3.09	3.09	28.79	24.35	3.09							170.20	
	(D) Consolidation Phase																							0	0.00
	Total (D)																							0	0.00
	Grand Total		49.67	24.76	26.02	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	30.46	26.02	0.00	4.76						190.22	

S. No.	Activities	Unit	<i>EXPENDITURE (Rs. In Lakhs)</i>																											
			April		May		June		July		Aug		Sep		Oct		Nov		Dec		Jan		Feb		March		Total			
			Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.		
1	Admn.	–		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31		0.31	0	3.71		
2	Monitoring	–		0.03		0.03		0.03		0.03		0.03		0.03		0.03		0.03		0.03		0.03		0.03		0.03	0	0.37		
	(D) Consolidation Phase			0.62		0.62		0.62		0.62		0.62		0.62		0.62		0.62		0.62		0.62		0.62		0.62		7.41		
	Total (D)			0.62		0.62		0.62		0.62		0.62		0.62		0.62		0.62		0.62		0.62		0.62		0.62		7.41		
	Grand Total			0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		11.49		

CHAPTER – VII

Project Outcomes

The watershed development works are implemented based on Agro-climatologically characteristics. However it will differ watershed to watershed but the following criteria and performance standards are spell out to evaluate the success of participatory watershed management.

- The level of understanding among farmers will increase towards the environmental degradation.
- The moisture retention will increase in the fields resulted in enhancement of agriculture production by 15 %
- Watershed farmers will get drinking water through out the year through rain water storage tanks
- Due to harvest of rain water in the storage pucca tankas the cultivation of horticulture plants and the plants which has medicinal value will be protected thereby survival of plants be increased by 40%
- The ground water column will increase to the extent of 1.2-1.5 m.
- Straightening and empowering of local community so as to manage the assets created after completion of the project
- Due to moisture retention in the fields the cultivable area will increase by 10 % and irrigated area by 15 %

- On the completion of project, about 2 % number of wells will increase.
- Farmers of the watershed will come forward for the replacement of seed rate by 15 % in every year
- The fodder production will increase by 10 to 15 %
- The employment opportunities at the village will increase resulted in reduction of migration significantly by 30 % and will generate 22000 to 25000 man days based on last years experiences in the clusters executed so far in every cluster in each year.
- Number of sustainable SHG and UG will be 2 to 4 per cluster
- The project will improve the breed of the livestock and animal health. With the result, more production of the milk, meet and access its marketing with ease. Rearing of animals i.e. rearing of goat and sheep will also improve their livelihood and ultimately human development.
- The village community themselves will be able to prepare farmers led program and to implement the various developmental activities in their villages per their need including the fund management and in assessing the problem more accurately in a participatory and sustainable manner.
- The project will provide the guideline for policy makers and implementing agencies especially in the fields of animal husbandry activities in the district areas and other similar conditions.
- The livestock owner will be able to increase the average yield of milk per day from 2.3 liter/day to 3 to 4 liters per day. The lactation period will be optimized in order to increase the milk production.
- By introduction of crossed breeding the production of meat and wool will increase by 40 to 50% i.e. meat from 2.36 to 3.5 tones and wool by 728 tones to 1300 tones.
- Per capita income of the watershed farmer will increase from Rs. 11113 to Rs. 15000 on completion of the project i.e. 30 to 40 %

CHAPTER – VIII

Year Wise Break Up

S. No.	Activities	Unit	Unit Cost	I Year		II Year		III Year		IV Year		V Year		VI Year		VII Year		Total	
				Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
1	Admn.	–		–	7.41	–	14.83	–	14.83	–	14.83	–	14.83	–	3.71	–	3.71	–	74.13
2	Monitoring	–		–	0.74	–	1.48	–	1.48	–	1.48	–	1.48	–	0.37	–	0.37	–	7.41
3	Evaluation	–		–	0.00	–	2.22	–	0.00	–	2.59	–	0.00	–	2.59	–	0.00	–	7.41
	(A) Preparatory phase																		
1	EPA	No.		3	29.65	–	0.00	–	0.00	–	0.00	–	0.00	–	0.00	–	0.00	3	29.65
2	I & CB	–		–	11.12	–	11.12	–	3.71	–	3.71	–	3.71	–	3.71	–	0.00	–	37.07
3	DPR	–		–	5.56	–	1.85	–	0.00	–	0.00	–	0.00	–	0.00	–	0.00	–	7.41
	Total (A)	–		–	46.33	–	12.97	–	3.71	–	3.71	–	3.71	–	3.71	–	0.00	–	74.13
	(B) Natural resource management																		
	Conservation measures for arable land																		
1	Tanka/Farm Pond (30000 litre Capacity)	No.	1.00	–	–	–	–	100	100.00	150	150.00	118	118.06	–	–	–	–	368	368.06

	(E) Livelihood activities, Production System and Micro Enterprise																		
	Activities																		
1	Backyard Poultry	No.																	
2	Composting	No.																	
3	Nursery Raising	No.																	
4	Fodder Bank	No.																	
5	Vermi composting	No.																	
6	Handicraft-wool	No.																	
7	Milk Collection Centre	No.																	
8	Micro Enterprises	No.																	
	Total (C, D & E)				0.00		0.00		37.07		37.07		37.07			0.00		111.20	
	(F) Consolidation Phase														14.83		7.41		22.24
	Total (F)														14.83		7.41		22.24
	Grand Total				54.49		31.51		190.21		248.22		180.18		25.20		11.49		741.30

CHAPTER – IX

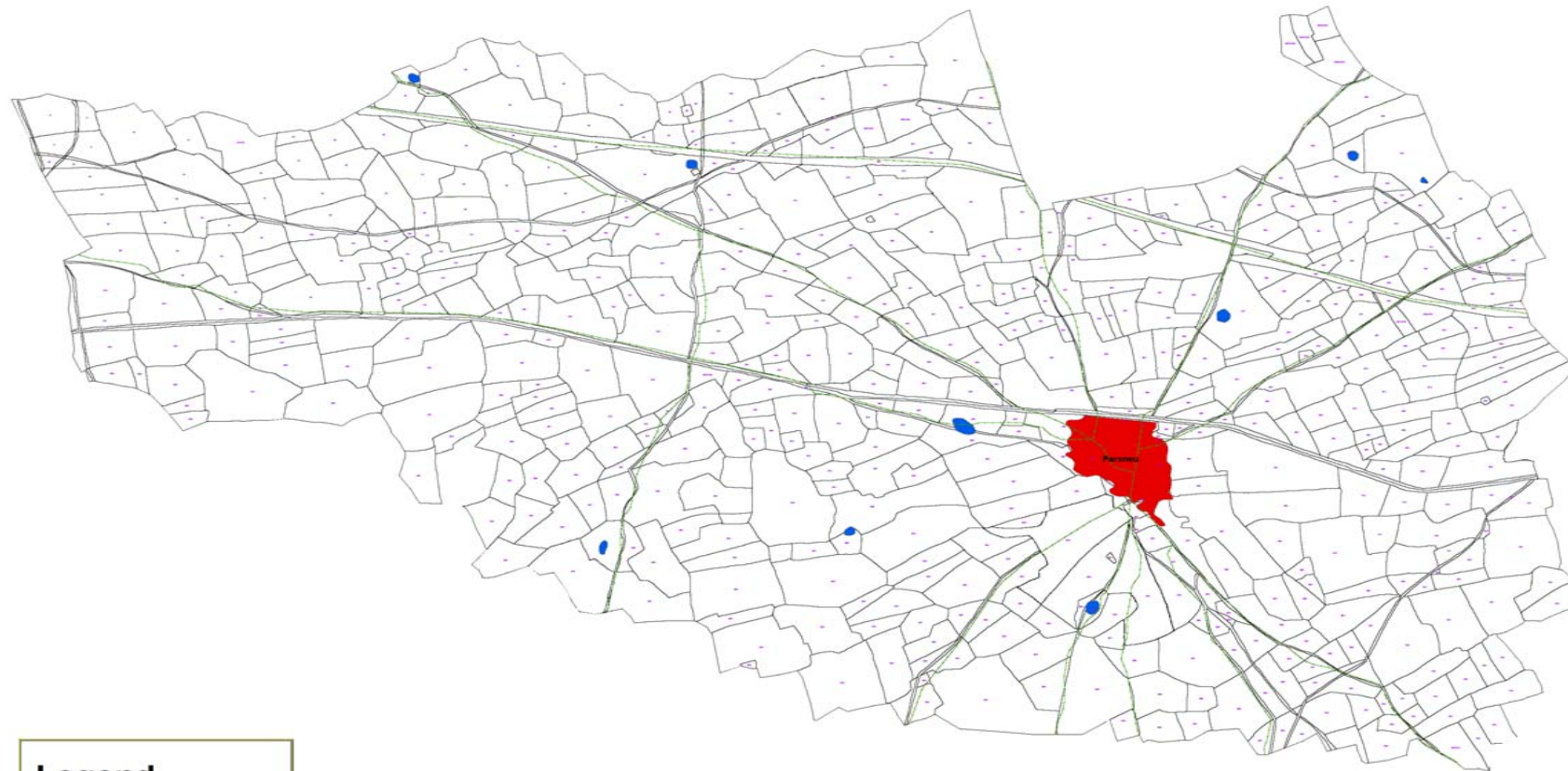
Enclosures – Various GIS thematic layers

GEOREFERENCED KHASRA MAP

WATERSHED PROJECT - PARSNEU, PANCHAYAT SAMITI - RATANGARH

SCHEME- IWMP

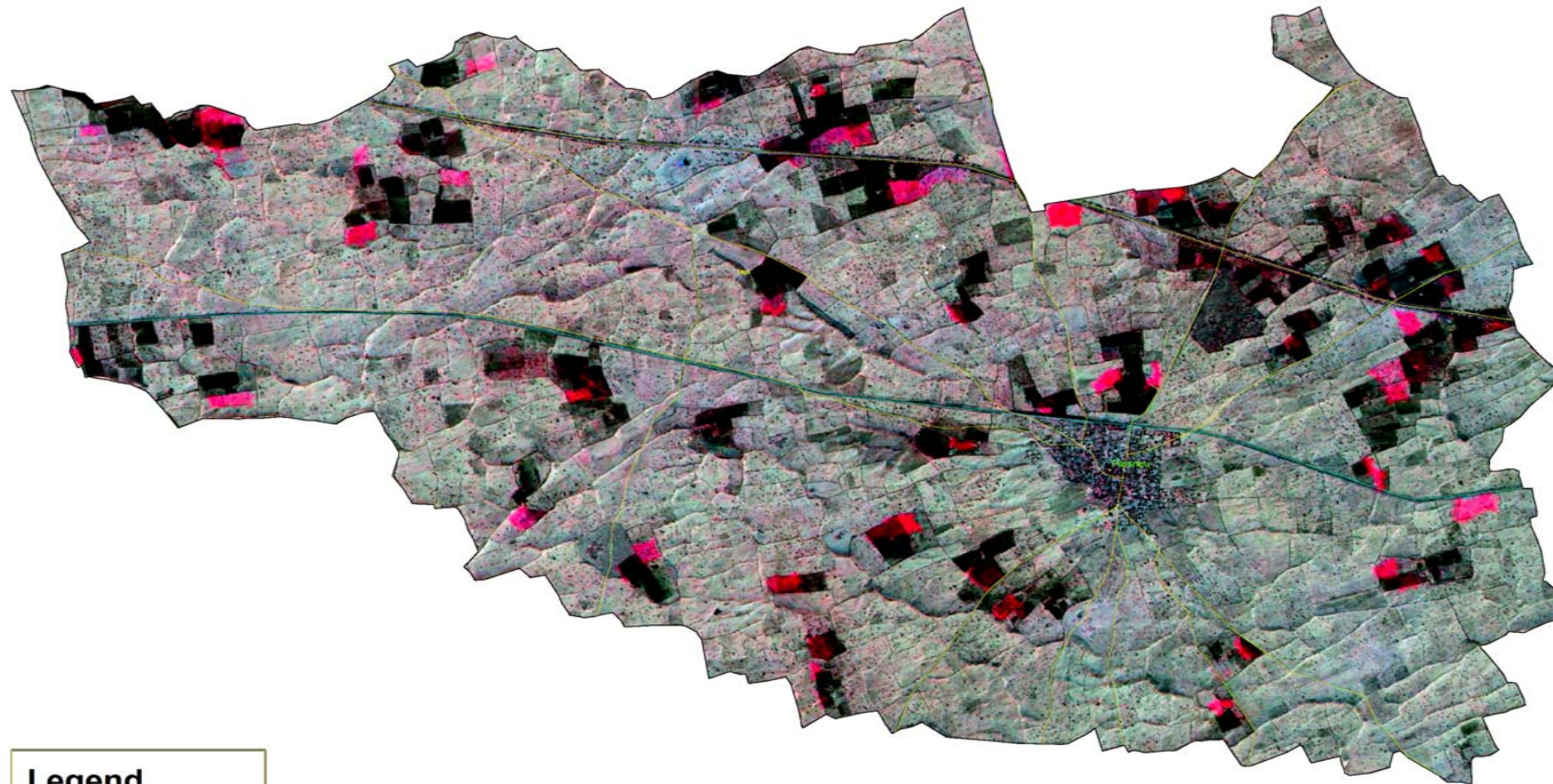
DISTRICT- CHURU



Legend

- RAIL
- ROADS
- WATERBODY
- WATERSHED
- SETTLEMENT

CARTOSAT-1(MERGE) SATELLITE IMAGE
WATERSHED PROJECT - PARSNEU, PANCHAYAT SAMITI - RATANGARH
SCHEME- IWMP
DISTRICT- CHURU



Legend

- SETTLEMENT
- RAIL
- ROADS
- WATERSHED
- VEGITATION

LAND USE/ LAND COVER MAP

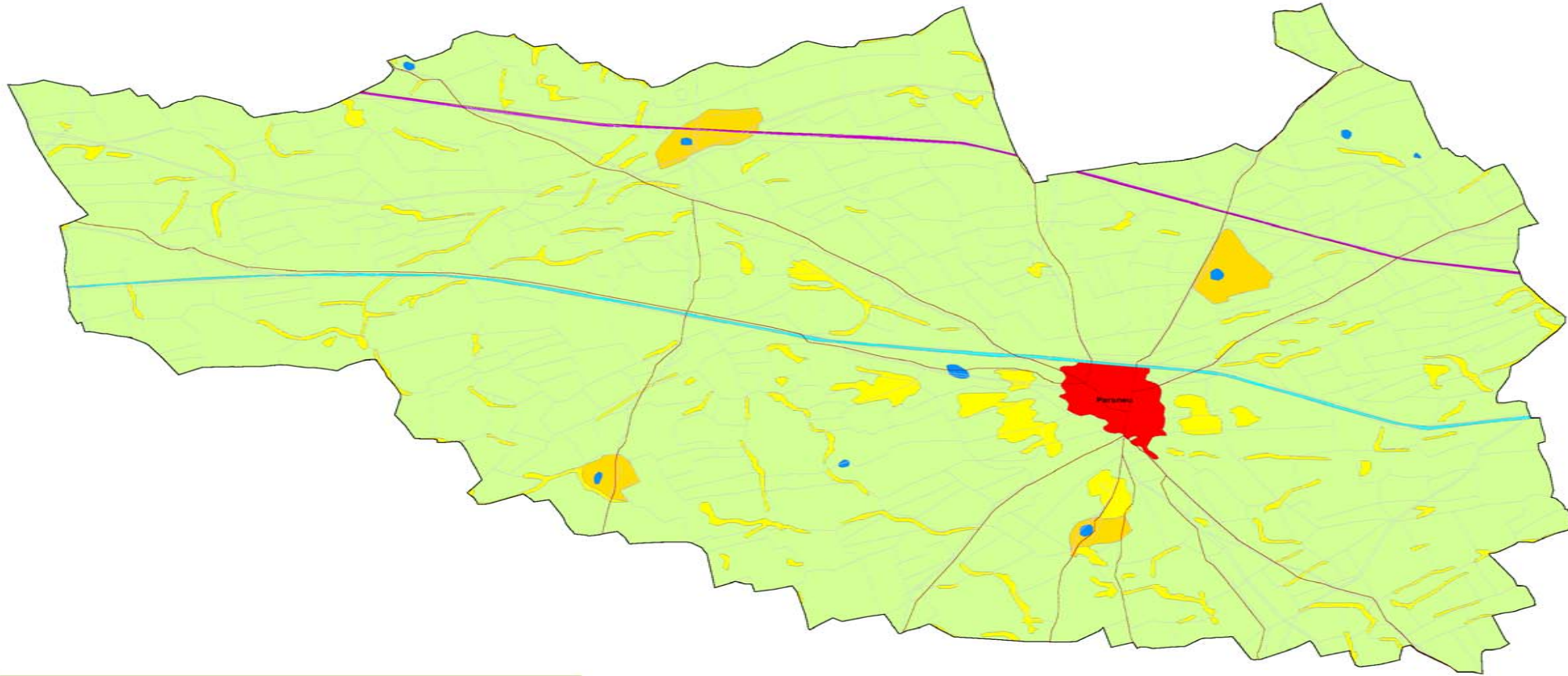
WATERSHED PROJECT - PARSNEU, PANCHAYAT SAMITI - RATANGARH

SCHEME- IWMP

DISTRICT- CHURU



SCALE 1:10,000



Legend

ROADS	RAIL
WATERSHED	ROAD
KHASRA BOUNDARY	SANDY DESERTIC
AGRICULTURE	SETTLEMENT
LAND WITH SCRUB	WATERBODY

