

# **DETAILED PROJECT REPORT**

## **INTEGRATED WATERSHED MANAGEMENT PROGRAMME**

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

**AREA OF PROJECT : 3840 hac**

**COST OF PROJECT : 576.00 Lakhs**

**BLOCK :- Rajgarh**

**DISTRICT :- CHURU**

**DEPARTMENT OF SOIL & WATER CONSERVATION, JAIPUR (RAJASTHAN)**

**DETAILED PROJECT REPORT**

# INTEGRATED WATERSHED MANAGEMENT PROGRAMME

<b>NAME OF PROJECT (AS PER GOI) :</b>	<b>Churu IV</b>
<b>LOCAL NAME OF PROJECT :</b>	<b>Dhanoti Bari</b>
<b>No. of Macro W/S / No. of Gram Panchayat :</b>	<b>1</b>
<b>Atlas Code of Macro W/S / Name of Gram Panchayat :</b>	<b>Dhanoti Bari</b>
<b>No. of Micro W/S / No. of Village :</b>	<b>2</b>
<b>Atlas Code of Micro W/S / Name of Village :</b>	<b>Dhanoti Bari &amp; Dumki</b>
<b>AREA OF PROJECT :</b>	<b>3840 Ha.</b>
<b>COST OF PROJECT :</b>	<b>576.00 Lakhs</b>
<b>BLOCK :-</b>	<b>Rajgarh</b>
<b>DISTRICT:</b>	<b>Churu</b>

**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.

### **Location & General features of watershed/cluster/project**

Churu IV project falls in Churu District of Rajasthan. The geographical area of this project is 3840 ha. and it comprises of 01 Gram pnnchayat covering 02 villages. The area lies between latitude of ..... to ..... N and longitude of ..... to ..... East.

Churu IV project is located in rajgarh . Block, Churu District of Rajasthan state. The project is a cluster of 02 villages with Dhanoti bari, Dumki ,being their 00584000, 00584300, respective codes. The total Village area of the project (Cluster/watershed) is about 3840 Ha, out of which 3840 Ha has been undertaken to be treated under Integrated Watershed Management Programme (IWMP) starting year 2009-10.

The nearest town is Rajgarh which is about 43 KM from the project area and is well connected by *pucca/kachha* road. *Jaat, Brahmin* 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 340 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**

<b>S.No</b>	<b>Land Use Details</b>	<b>Area ( ha)</b>	<b>% to geographical area</b>
1	Total Geographical area	3840	100
2	Forest	00	00
3	Non agriculture use	126	3.28
4	Barren & unculturable land	126	3.28
5	Area unfit for cultivation (3+4)	252	6.56
6	Cultivable wasteland	175	4.55
7	Pasture and other grazing lands	00	00
8	Other uncultivated land excluding fallow lands (6+7+8)	175	4.55
9	Fallow ( Other fallow +Current fellow lands)	126	3.28
10	Net Area sown	3238	84.32
11	Total cropped Area	3714	96.71
12	Area sown more than once	00	00
13	Net area Irrigated	00	00
15	Rainfed cultivable land (6+10+11-12)	3539	92.16

## 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	05	800000	4000000	3 months
2	Pacca Johar/Talaab	01	1500000	1500000	5 months
3	Individual Farm Pond/Taanka	60	20000	1200000	06 months
4	Individual Farm Pond/Taanka	10	20000	200000	03 months
5	Individual Farm Pond/Taanka	03	50000	150000	08 months
6	Community Farm Pond/Taanka	02	100000	200000	06 months
7	Community Farm Pond/Taanka	04	75000	300000	05 months
8	Community Farm Pond/Taanka	05	50000	250000	04 months
9	Roof Top Rain Water Harvesting Structure	150	10000	1500000	06 months
	Total			11700000	

## Soil Erosion

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 3840 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	nill	There is no runoff	-

b	Rill	nil	producing storm in the district	
c	Gully	nil		
Sub-Total				
Wind erosion		3840.	N.A	Data regarding about wind erosion are not available
<b>Total</b>		<b>3840</b>		

## Socio Economic Status

Churu IV project has a total of 895 households with a population of 6572 (*as per base-line survey*) out of which 2466 are male and 2371 female. The sex ratio is 953 female to 1000 male. There are 94 BPL families. The average family size is 04 members. The literacy rate is *i.e.* 58 per cent. Male literacy rate is 60 per cent (of total male population) and female literacy rate is 55 per cent (of total female population). The major castes in the village are GN, OBC 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

<b>A</b>	<b>Population</b>		
a	Population		6572
	Male		2466
	Female		2371
b	Childern		1735
c	Total Household		889
d	BPL Families		94
	By Caste		
	General		01
	S.C.		70
	O.B.C.		23
	Density ( per sq.kms)		2
	Decadal growth rate ( 1991-2001)		

<b>B</b>	<b>Human Development Index parameters</b>		
	Litercy rate all %		58
	Male		60
	Female		55
	Litercy rate(rural) ( M)		52.50
	Litercy rate(rural) ( F)		45.72.
	Sex ratio		953
	Human Development index(2007)		
<b>C</b>	<b>Distribution of households</b>		
	a	By Land Holding	
	b	Marginal Farmers (0- 1ha)	527
	c	Samll Farmers (1- 2ha)	210
	d	Medium Farmers (2 to 4 ha)	94
	e	Big Farmers (more than 4 ha)	163
	f	Average holding size - ha	3.84
<b>D</b>	<b>Major occupation</b>		
	a	Agriculture	1812
	b	Landless labourers/ Agriculture labour	200
	c	Household industrial labour	300
	d	Others labour	188
	e	Total working labour	2500
<b>E</b>	<b>Source of Income</b>		
	1	Crop production & dairy enterprise	04
	2	Off-farm income / Other services	
	3	Agriculture Labour	1812
<b>F</b>	Income wise Category of /households/Families(No)		

## **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.

### **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
- 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>		R	NR
For the salaries, TA, O.E. and other expenses for the hired persons		90 lacs	
For strengthening of SLNA in terms of consultancy, workshops, R&D, strengthening, MEL, Softwares & Hardwares			40 lacs

\* Also included in strengthening of SLAN mentioned in PPR 2

**Details of State Levl Data Cell ( SLDC) functionaries**

List of Officers/Officials working in Commissionrate

S.No.	Total no. of persons working in the SLNA for IWMP	Names & Designation	Designation	Qalification	Experience	Work allocation	Monthly remuneration (Rs.)
1	Given in PPR1	Sh.D K Yadav	Jt.Director	B.E.Agri	37 years	Data Cell, Monirtering and supervison	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...IV.....	(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	<a href="mailto:dwdu.churu@gmail.com">dwdu.churu@gmail.com</a>

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	<a href="mailto:Dhimaanrajesh@gmail.com">Dhimaanrajesh@gmail.com</a>
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 II..... 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.

<b>Staff at PIA level</b>									
S. No.	Name	Age	Sex	Designation	Qualification	Experience	Govt. Servant/ on Contract	Mobile No.	E-mail
01	Shubhkaransingh	48	m	A.En	B.E. agg.	20	Govt. servant	9414542964	

## 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 IV	Engineer	Rakesh kumar indalia	28	m	B.E. civil	01 Yrs	9413316455	<a href="mailto:Rakesh_indalia22@yahoo.co.in">Rakesh_indalia22@yahoo.co.in</a>
2		Agriculture Specialist	Vijay puri	30	m	B.Sc., agg, B.Ed.	05 Yrs	9983100132	
3		Animal Husbandry	Mahndra mehla	35	m	diploma	01 yrs	9413317337	
4		Social worker	Sunita dhadhich	34	F	M.A.,	12 Yrs	9571648339	

**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 ...Kadwasar.... 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	Age	Category	Qualification	Mobile No.	Bank A/C No.	Name of Bank
1	Watershed Committee ...Dhanoti bari	.../20/10/10	Meer singh	chairman	m	50	OBC	9 <sup>th</sup>	9680503594	61125433417.	SBBJ sadulpur
2			Ram kishan	secretary	m	28	obc	b.ed, M.A.	9783061025		
3			mohini	member	F	30	obc	8 <sup>th</sup>	-		
4			krishna	member	f	34	sc	8 <sup>th</sup>			
5			balwant	member	m	45	sc	10 <sup>th</sup>			
6			Daulat ram	member	m	50	sc	9 <sup>th</sup>			
7			hanuman	member	m	55	obc	literate			
8			dulichand	member	m	50	obc	8 <sup>th</sup>			
9			sunil	member	m	29	sc	10 <sup>th</sup>			
10			Tek chand	member	m	55	obc	literate			
11			dilip	member	m	45	obc	literate			
12			Om prakash	member	m	48	gen	8 <sup>th</sup>			
13			sunita	member	f	34	gen	m.A.			

## 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	Dhanoti bari.	Ram kishan	28	m	M.A. , B.Ed.	01 Yrs	9783061025	-

## 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 II, III and IV. 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	Sandy 2500	25
2	III	Sandy loam 1000	10
3	IV	Loamy 340	3.4
	Total	3840	38.40

The project consists of ...3840 . ha area of which 92.16% is under cultivation. Agriculture is purely depending on the monsoon rainfall and single cropped. The net sown area is 84.32. % area in the project. The Project has approximately 175 ha wasteland. 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. Details of present land use and waste lands of the project area is given below :-

#### Land use of Project Area

Gram Panchayat	Village	W/S	Geographical Area	Forest Area	Community Land	Pastures	Uncultivated Waste Land	Agriculture Land				Net sown area	Net Area sown more than once
								Temporary fallow	Parmanent fallow	Cultivared Rainfed	Cultivated irrigated		
Dhanoti bari	dhanoti		2245	00	24.29	00	60	00	00	2084	00	1933.45	00
	dumki		1595	00	19.35	00	66	00	00	1455	00	1310.05	00



## b) Agriculture and Horticulture Status and fuel availability

Most of the area depends upon rain. Cropping intensity is less than 02.% of the cropped area. 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 Beres 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 roxburghii*), 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 mexicana*), Phog (*Calligonum polygonoides*), Aak (*Calotropis procera*), Senia (*Crotalaria burhia*), Thor (*Euphorbia royleana*), Kheenp (*Laptadenia spartium*), Morali (*Lycium europoeum*) & Ber (*Zizyphus mauritiana*).

Several types of grasses are found in this project area viz. Bhurat (*Cenchrus catharticus*), Sewan (*Lasiurus catharticus*), Bura (*Cymbopogon 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		1018	1018					1018	1018
2	Moth,	-	498	498				-	498	498
3	Moong	-	400	400				-	400	400
4	Guar	-	276	276				-	276	276
5	Gram	-				1065	1065		1065	1065
6	Mustard	55		55		415	415	55	415	470

7	Taramira				210	210		210	210
	<b>Total</b>			<b>2615</b>		<b>1690</b>			<b>4305</b>

**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	1018	254.5	250					
		Moth,	498	99.6	200					
		Moong	400	72	180					
		Guar	276	57.9	210					
2	Rabi	Gram				1065	282.2	260		
		Mustard				415	66.4	160		
		Taramira				210	31.5	150		
		<b>Total</b>			-	1690	380.1	570		

#### 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.

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 where as waste land is ...175 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.)				
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>
Cows	289		289	4.21	-	-	-	4.0	-	-	-				
Buffaloes	1207	-	1207	2643.33		-	-	7.9	4kg/an	-	-	7.4	1:12		
Bullocks	04	-	04		08	-	-	-	0.5 kg.	-	-	-	-	-	-
Camel	133	-	133	-	-	1.56	-	-	-	1kg/c	-	1.5	1:65		
Goat	640	-	640		08	1.06	-	0.9		2	-	96.6	1:0.9		
Sheep	848	-	848		08	1.96	-	-	20kg/s	2.0kg/s	-	31.8	1:3		
<b>Total Livestock</b>	<b>3121</b>	<b>-</b>	<b>3121</b>	<b>2647.54</b>	<b>24</b>	<b>4.58</b>		<b>12.8</b>	<b>24.5 Kg</b>	<b>03</b>	<b>-</b>	<b>135.3</b>			

### e) Demography

As per basic survey, project area has a population of 6672. Males constitute 2466 i.e 36.96% and females 2371 i.e. 35.53% of the population, The growth rate against population is 20 %.

Total number of household in the project area are 889 Sex ratio of the project area is 953. Migration from project area is 1.5.%. SC, ST, BPL & Landless population in the project area are respectively 17%SC, 0.3% ST & 37% OBC.

## DEMOGRAPHY OF THE PROJECT AREA

Name of Village	No. of Household	Growth in Population during the last three census	Per capita availability of Land (Ha.)	Sex Ratio	Total Population			Population in the age group 0-6			Lit. Population	Literacy Level (%)	Migration	Total Worker	No. of SC, ST, BPL & Landless Population			
					Person	Male	Female	Person	Male	Female					SC	ST	BPL	Landless
Dhaoti bari	442	130	3.87	920	3372	1366	1300	900	500	400	1956	58	54	1498	80	00	53	80
Dumki	447	130	3.87	945	3200	1100	1071	835	475	360	1856	55	45	1390	78	00	41	30

### f) 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	02			
(ii)	No. of villages provided with electricity	All 2 villages			
(iii)	No. of households without access to drinking water				
(iv)	No. of educational institutions: Primary (P)/Secondary (S)/Higher Secondary (HS)/Vocational institution (VI)	(P) 02 nos.	(S) 01 nos.	(HS)	(VI)
(v)	No. of villages with access to Primary Health Centre	dhanoti			
(vi)	No. of villages with access to Veterinary Dispensary	--			
(vii)	No. of villages with access to Post Office	Dhanoti , sidhmukh			
(viii)	No. of villages with access to Bank	01- corp bank			
(ix)	No. of villages with access to Market/Mandis	rajgarh			
(x)	No. of villages with access to Agro -industries	-			
(xi)	Total quantity of surplus milk	-			
(xii)	No. of milk collection centres	(U)	(S)	(PA)	(O)

	(e.g. Union (U)/Society (S)/Private agency (PA)/Others (O))	-	-	-	-
(xiii)	No. of villages with access to Aanganwadi Centre	02			
(xiv)	Any other facilities with no. of villages (please specify)				
(xv)	Nearest KVK	hisar	hryana		
(xvi)	Co-operative Society				
(xvii)	NGOs	-	-	-	-
(xviii)	Credit institutions				
	(i) Bank				
	(ii) Co-operative Society				
(xix)	Agro Service Centre's	-	----	-	-

## h) Development Indicators

- 1 Stop wind erosion by Selter Belt Plantation and Sand dune Stabilization.
- 2 Develop pasture land for villagers to full fill their need of fuel, fodder & stop migration.
- 3 Increase productivity per Ha.
- 4 Stabilise livelihood supporting activities to support land less labours.
- 5 Divert cropping patterns from 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.

## i) Land Holding details

Land holding of Large farmer, Small farmer & Marginal farmer in the project area is 50.10, 28.24 & 3.40 % respectively. Per capita of land holding of Large farmer, Small farmer & Marginal farmer in the project area is 10.26, 2.62 & 0.40 respectively. Land holding of General, SC, ST, OBC & BPL farmers in the project area is 17.21(147), 20.03(208), 0.46(04), 62.28(611) & 15.20(177 % respectively. Per capita of land holding of General, SC, ST, OBC & BPL farmers in the project area is 7.9, 6.50, 7.81, 6.88 & 5.79 respectively.

Land holding details of the project area is given below :-

Type of Farmer	Land holding (ha) irrigation source wise			Land holding (ha) Social group wise				
	Irrigated (source)	Rainfed	Total	General	SC	ST	OBC	BPL
(i) Large Farmer		163	163	40	20	00	82	21
(ii) Small Farmer		210	210	24	45	00	110	31
(iii) Marginal Farmer		527	527	85	150	00	250	42
(iv) No. of Landless person	120							
(v) No. of BPL households	94							

### j) 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	Number of beneficiaries benefitted
1	Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	Rural Development Department	Employment	03	500
2	Indira Awas Yojna (IAY)	Rural Development Department	Housing	03	140
3	C M Rural BPL Housing Scheme	Rural Development Department	Housing	03	10
3	Swarnjayanti Gram Swarozgar Yojana (SGSY)	Rural Development Department	Loan	02	45
4	Total Sanitation campaign (TSC)	Rural Development Department	Sanitation	03	100
5	Member of Legislative Assembly Local Area Development (MLA LAD)	Rural Development Department	Development	--	--

6	Member of Parliament Local Area Development (MP LAD)	Rural Development Department	Development	--	--
7	Thirteenth Finance Commission (TFC)	Panchayati Raj Department	Development	03	120
8	State Finance Commission (SFC)	Panchayati Raj Department	Development	03	100
9	Swa Vivek	Rural Development Department	Development	--	--
10	Gramin Jan Sah-Bhagidari Yagna	Rural Development Department	Development	--	--
11	Nirband Yagna	Panchayati Raj Department	Development	--	--

## II. Technical Features

### a) Revenue maps

Revenue maps, constructed by SRSAC Jodhpur is based on 1 : 4000. Revenue records like khasra 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 SRSAC 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 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 5350 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 50 to 1000 m depth & having 2000 to 3400 TDS.

S. No.	Well	No.	Depth	Dry	Area irrigated (Ha)	Water availability (days)
1	Dug well	5	50-100	2	0	180
2	Deep tube wells	10	50-100	3	0	150
	Total	17		6	0	

As reported out of 3840 ha area, the potential of ground water in the area 3840 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 :-

#### Ground water prospects

Category	Area in hectares	% to district	% to state
Critical	3840	0.28	
Safe	0		
<b>TOTAL</b>	<b>3840</b>	<b>0.28</b>	

#### d) Slope details

The information provided by Remote Sensing Centre Jodhpur the slope of the area is varying from 0 to 35.%.  
The details as furnished by Remote Sensing Centre Jodhpur is given below :-



## Slope distribution

### General slope of area of the district

S. No.	Slope Category	Area in Ha.	Area in Sq. Km.
1	0-1%	563	5.63
2	1-3%	1254	12.54
3	3-5%	846	8.46
4	5-10%	686	6.86
5	10-15%	256	2.56
6	15-35%	155	1.55
7	35-50%	80	0.8
	<b>TOTAL</b>	<b>3840</b>	<b>38.4</b>

#### 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, 80% from Daamar Road, 60% from Daamar Road Berms, 80% from roof top of the building/house, 80% from C. C. Road, 60 % from Brick Road (Khurra/Kharanja), 80% 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	400000	0.34	27200000
2	Daamar Road	36000	0.34	9792000
3	Daamar Road Berms	24000	0.34	4896000

4	Roof top of the building/house	60000	0.34	16320000
5	C. C. Road	1200	0.34	326400
6	Brick Road (Khurra/Kharanja)	2000	0.34	408000
7	Pucca catchment of Water Harvesting Structure	5000	0.34	1360000
9	Total			60302400

**(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	05	800000	4000000	3 months
2	Pacca Johar/Talaab	01	1500000	1500000	5 months
3	Individual Farm Pond/Taanka	60	20000	1200000	06 months
4	Individual Farm Pond/Taanka	10	20000	200000	03 months
5	Individual Farm Pond/Taanka	03	50000	150000	08 months
6	Community Farm Pond/Taanka	02	100000	200000	06 months
7	Community Farm Pond/Taanka	04	75000	300000	05 months
8	Community Farm Pond/Taanka	05	50000	250000	04 months
9	Roof Top Rain Water Harvesting Structure	150	10000	1500000	06 months
	Total			11700000	

**(iii) Balance Available Runoff**

Total available runoff of the project area is 603,02,400 litre & runoff tapped in the existing structure is 117,00,000 litre. So balance available runoff to be tapped is 486,02,400 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)	6572	5.5	13193290
2	Persons (for bathing, washing etc. purpose)	6572	60	143926800
3	Cows	289	20	2109700
4	Buffaloes	1207	35	15419425
5	Camel	133	50	2427250
6	Goat	640	10	2336000
7	Sheep	848	10	3095200
8	Horticulture plant	15000	2	10950000
9	Agroforestry plant	20000	1	7300000
	TOTAL DEMAND			200757665

**(v) Net Demand of Water in the Project Area**

1. Total Demand of Water in the Project Area :- 20,07,57,665 (litre)
2. Total Water Available in the Existing Structure in the Project Area :- 117,00,000 (litre)
3. Total Supply of water by Deptt., NGO & any other agency in the Project Area :- 9,00,00,000 (litre)
4. Net Demand of Water in the Project Area :- 9,90,57,665 (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. 1. to 35 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.

As per **Remote Sensing application centre**, Sodic or Alkali Soils is 3840 ha.

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.

<b>The details of the Area according to depth of soil</b>		
<b>Depth (Cms)</b>	<b>Area in Ha.</b>	<b>Area in Sq. Km.</b>
0.00 to 7.50		
7.50 to 45.00		
> 45.00	3840 ha	
<b>TOTAL</b>	<b>3840 ha</b>	

### Soil Profile

Major Soil Classes	Area in Hectares
II	130
III	1215
IV	2191
VI	304
Total	3840

### Soil Fertility Status

Soil Fertility Status	Kg/ha
N	0.50kg/hac
P	23.56kg/hac
K	353kg/hac
Micro nutrients	PPM

### g) Climatic and Hydrological details

The Area of Project is situated at 28° 30.' N 75° 23'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 45<sup>0</sup>C to 22<sup>0</sup> 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 48°C and 0 .°C respectively. Normal rainfall is only 340 mm / year which is sufficient for growing the crops.

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

**Climatic and Hydrological information**

Name of Agroclimatic zone :- 2A

**Average Annual Rainfall (mm)**

S. No.	Year	Average Annual Rainfall (mm)
1	2002	288
2	2003	270
3	2004	305
4	2005	344
5	2006	251
6	2007	349
7	2008	436
8	2009	165
9	2010	225
10	2011	

**Avg. Monthly Rainfall (Last Ten Years)**

S. No.	Month	Rainfall (mm)
1	June	56
2	July	111
3	August	100
4	September	37

**Maximum Rainfall Intensity (mm)**

S. No.	Duration	Rainfall intensity (mm)
1	15 minute duration	25
2	30 minute duration	55
3	60 minute duration	68

**Tempreture (Degree C)**

S. No.	Season	Max.	Min.
1	Summer Season	48	25
2	Winter Season	19	0
3	Rainy Season	35	25

**Potential Evaporation Transpiration (PET)  
(mm/day)**

S. No.	Season	PET
1	Summer	3-18
2	Winter	2-7
3	Rainy	4-12

**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 5000 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		3840		Data regarding about wind erosion are not available
<b>Total</b>		<b>3840</b>		

### **III. Problems, Demand and Scope for comprehensive area development**

#### **a) NRM**

##### **Problems**

- Being general soil texture light and coarse 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 comparative to total area & deforestation of community land.
- Less vegetative cover

##### **Demand**

- .
- 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	Dhanoti bari	Dhanoti bari	23.04	Construction of kund	1.41

2	Dhanoti bari	Dumki	Construction of kund	1.32
3	Dhanoti bari	Dhanoti bari	Repair of paccha johar	5.41
4	Dhanoti bari	Dhanoti bari	Solar light	0.15
5	Dhanoti bari	Dhanoti bari	Solar light	0.15
6	Dhanoti bari	Dumki	Construction of paccha johar	8.0
7	Dhanoti bari	Dhanoti bari	Construction of paccha johar	6.6

### 3- Watershed Development Works on Arable lands

- New Farm pond (Tanka) of at least 1 lakh litter 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 ingenuous 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 340 mm

$$\text{Therefore Catchment area} = 30/0.34 * 0.80$$

Catchment area = 110.29 Sqm

$$(\text{Dia of Catchment area})^2 = 110.29 / \pi/4$$

$$(\text{Dia of Catchment area})^2 = 140.43$$

Dia of Catchment area = 11.85 m  $\approx$  12.00 m

#### DETAILED ESTIMATE ( Kund construction )

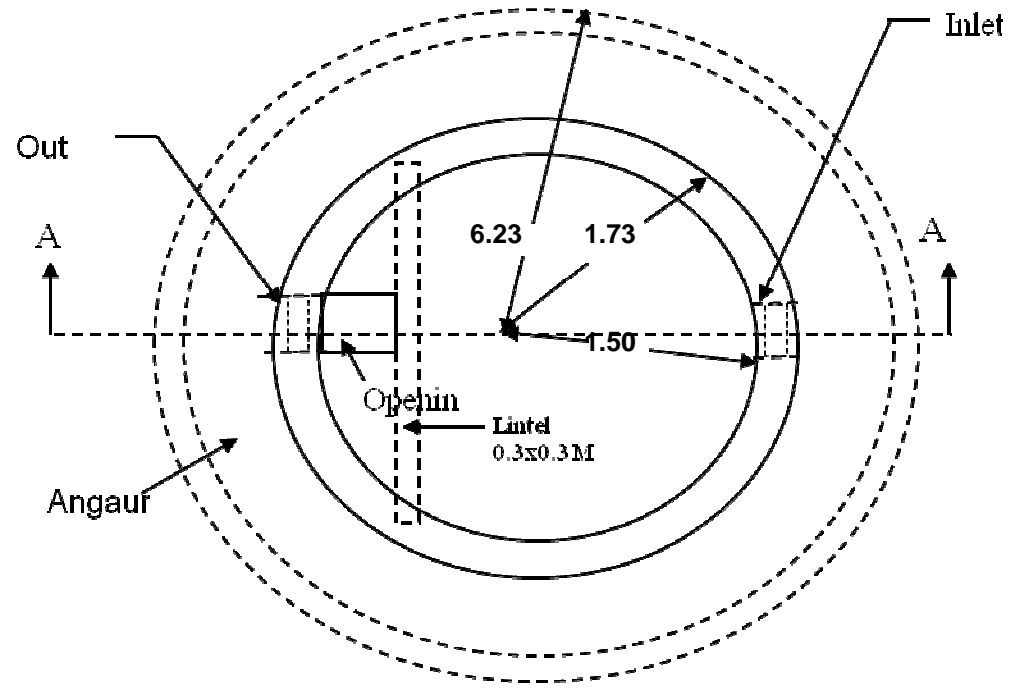
कार्य का नाम :-

#### 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 ) <sup>2</sup> * 1.50	= 14.104 Cum	71 /Cum	71 /Cum	Rs. 1001	Rs. 1001
b	खुदाई 1.5 मी. से 3.0 मी. तक					

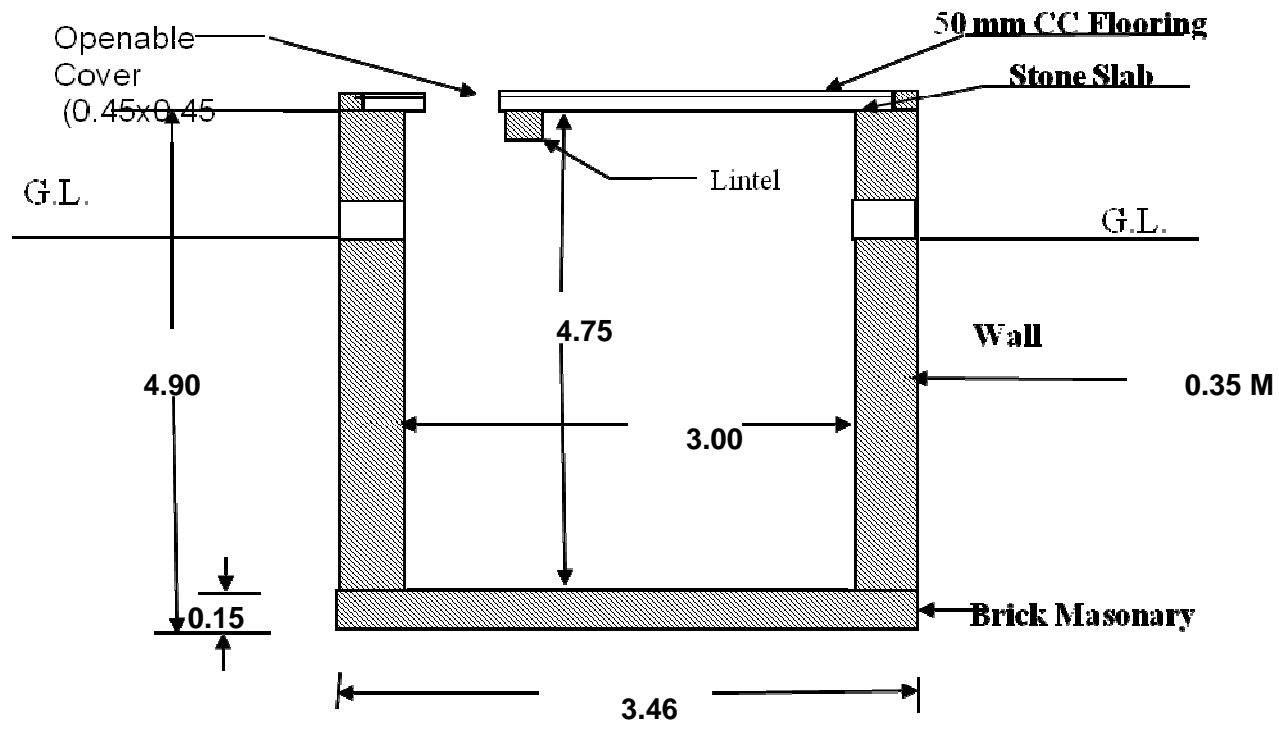
C	$\pi/4$	$( 3.46 )^2 * 1.50$	= 14.104 Cum	82 /Cum	82 /Cum	Rs. 1157	Rs. 1157	
	खुदाई 3.0 मी. से 4.5 मी. तक	$\pi/4$	$( 3.46 )^2 * 1.50$	= 14.104 Cum	93 /Cum	93 /Cum	Rs. 1312	Rs. 1312
2.	ईट की चिनाई का कार्य 1:6	$\pi/4$	$( 3.46 )^2 * 0.15$	= 1.410 Cum				
		$\pi/4$	$( 3.46^2 * 3.00^2 ) * 4.75$	= 11.086 Cum				
		$\pi/4$	$( 12.46^2 * 12.00^2 ) * 0.68$	= 6.009 Cum				
		$\pi/4$	$( 12.46^2 * 12.00^2 ) * 0.07$	= 0.619 Cum				
				19.124 Cum	366.00 /Cum	2354.0 /Cum	Rs. 6999	Rs. 45018
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 ईट कंकरीट बिछाने का कार्य mud mortar	$\pi/4$	$( 12.00^2 * 3.46^2 ) * 0.10$	10.369 Cum	236.00 /Cum	445 /Cum	Rs. 2447	Rs. 4614
6	प्लास्टर का कार्य 1:6 अनुपात में   20mm	$\pi/4$	$( 3.00 )^2$	= 7.069 Sqm				
		$\pi$	$* 3.00 * 4.75$	= 44.745 Sqm				
		$\pi$	$* 3.46 * 0.50$	= 5.432 Sqm				
				57.246 Sqm	43 /Sqm	93 /Sqm	Rs. 2462	Rs. 5324
7	प्लास्टर का कार्य 1:6 अनुपात में   12mm	$\pi/4$	$( 12.00^2 * 3.46^2 )$	= 103.695 Sqm				
		$\pi$	$* 12.00 * 0.07$	= 2.638 Sqm				
		$\pi$	$* 12.23 * 0.23$	= 8.833 Sqm				
		$\pi$	$* 12.46 * 0.60$	= 23.475 Sqm				
				138.640 Sqm	43 /Sqm	74 /Sqm	Rs. 5962	Rs. 10259
8	Construction of Barbed wire fencing				≈		Rs. 19000	
9	किवाड़ व जाली लगाने का कार्य				≈		Rs. 500	
योग						Rs. 24171	Rs. 97349	
Add 3% for contingencies charges							Rs. 2920	
<b>Grand Total</b>						<b>Rs. 24171</b>	<b>Rs. 100270</b>	
लागत श्रम मद में .....				0.242	लाख			
लागत सामग्री मद में .....				0.761	लाख			
कुल योग				1.003	लाख			

# ड्राईंग कुण्ड निर्माण



PLAN





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

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

Average rainfall of the project area is 340 mm

$$\text{Therefore Catchment area} = 50/0.34 * 0.80$$

Catchment area = 183.82 Sqm

$$(\text{Dia of Catchment area})^2 = 183.82/ \pi/4$$

$$(\text{Dia of Catchment area})^2 = 234.05$$

Dia of Catchment area = 15.29m  $\approx$  16.00 m

### DETAILED ESTIMATE ( Kund construction )

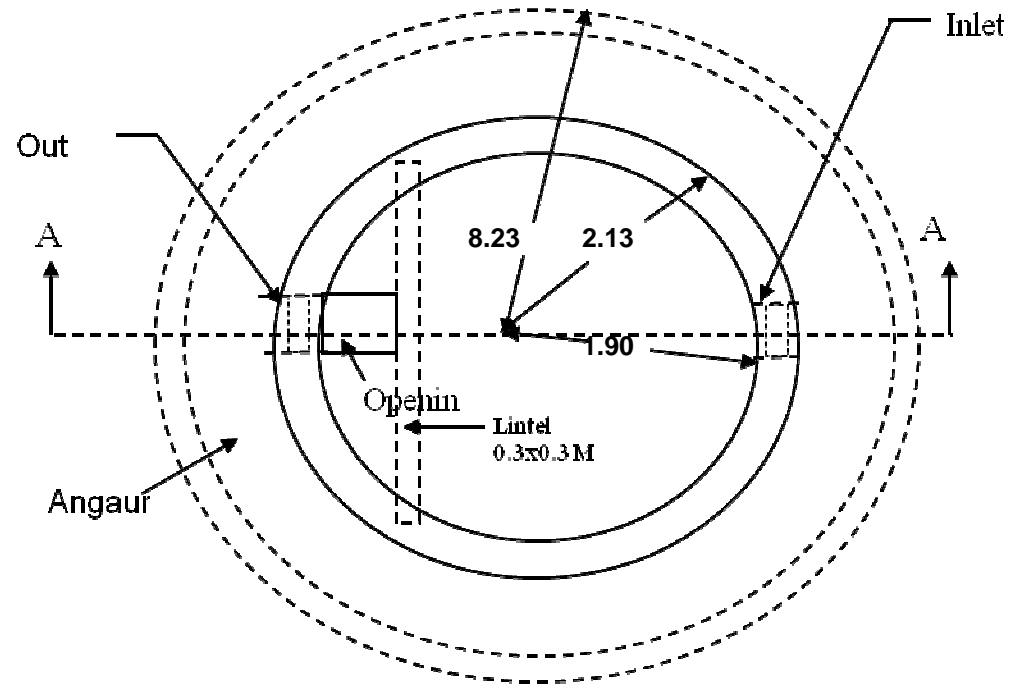
कार्य का नाम :-

### Construction of Individual Kund (50,000 litre Capacity)

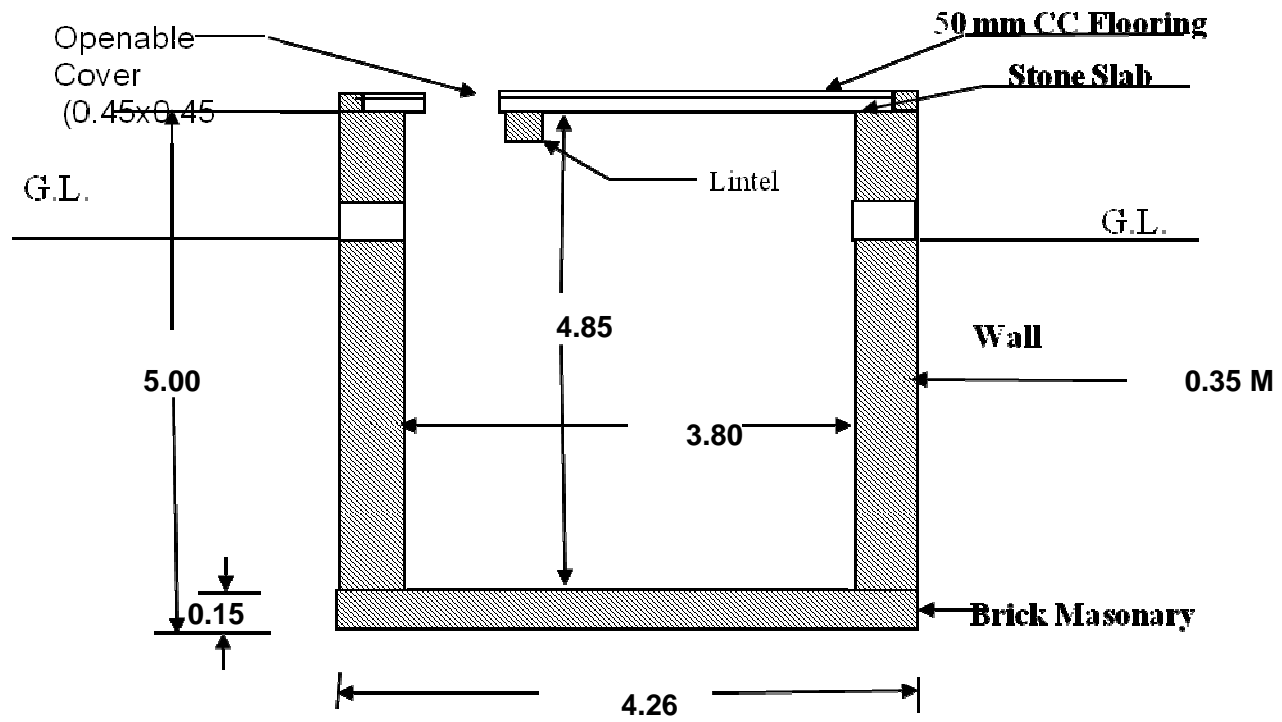
क्र. सं.	विवरण	मात्रा	Rate Labour	Rate Total	Labour	Total
1	कुण्ड की खुदाई का कार्य					
a	खुदाई 0 मी. से 1.5 मी. तक $\pi/4$ ( 4.26 ) <sup>2</sup> * 1.50	= 21.380 Cum	71 /Cum	71 /Cum	Rs. 1518	Rs. 1518
b	खुदाई 1.5 मी. से 3.0 मी. तक $\pi/4$ ( 4.26 ) <sup>2</sup> * 1.50	= 21.380 Cum	82 /Cum	82 /Cum	Rs. 1753	Rs. 1753
c	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
	ईट 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				
	$\pi/4$	$( 16.46 )^2 * 16.00^2 ) * 0.83$	= 9.734 Cum				
	$\pi/4$	$( 16.46 )^2 * 16.00^2 ) * 0.07$	= 0.821 Cum				
			<u>26.815</u> Cum	366.00 /Cum	2354.0 /Cum	Rs. 9814	Rs. 63123
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 ईट कंकरीट बिछाने का कार्य mud mortar						
	$\pi/4$	$( 16.00 )^2 * 4.26^2 ) * 0.10$	= 18.681 Cum	236.00 /Cum	445 /Cum	Rs. 4409	Rs. 8313
6	प्लास्टर का कार्य 1:6 अनुपात में । 20mm						
	$\pi/4$	$( 3.80 )^2$	= 11.341 Sqm				
	$\pi$	$* 3.80 * 4.85$	= 57.870 Sqm				
	$\pi$	$* 4.26 * 0.50$	= 6.688 Sqm				
			<u>75.900</u> Sqm	43 /Sqm	93 /Sqm	Rs. 3264	Rs. 7059
7	प्लास्टर का कार्य 1:6 अनुपात में । 12mm						
	$\pi/4$	$( 16.00 )^2 * 4.26^2 )$	= 186.809 Sqm				
	$\pi$	$* 16.00 * 0.07$	= 3.517 Sqm				
	$\pi$	$* 16.23 * 0.23$	= 11.721 Sqm				
	$\pi$	$* 16.46 * 0.75$	= 38.763 Sqm				
			<u>240.810</u> Sqm	43 /Sqm	74 /Sqm	Rs. 10355	Rs. 17820
8	किवाड़ व जाली लगाने का कार्य				≈		500
योग						Rs. 37874	Rs. 117544
Add 3% for contingencies charges						Rs. 3526	
<b>Grand Total</b>						<b>Rs. 37874</b>	<b>Rs. 121070</b>
लागत श्रम मद में .....				<b>0.379</b>	लाख		
लागत सामग्री मद में .....				<b>0.832</b>	लाख		
<b>कुल योग</b>				<b>1.211</b>	लाख		

# ड्राईंग कुण्ड निर्माण



PLAN



SECTION ON 'A-A'

### 3. Technical Design of Kund/Farm Pond/Taanka of 75,000 litre Capacity

Volume of Kund should be 75.00 Cumec for 75,000 litre capacity

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

Assuming Diameter of Kund = 4.50 m

$$\text{Then Depth should be} = 75 / \pi/4(4.50)^2$$

Therefore Depth = 4.71 m  $\approx$  4.75 m

Catchment area of Kund should be for 75,000 litre

Volume of Water = Catchment area \* Average Rainfall

Average rainfall of the project area is 340 mm

$$\text{Therefore Catchment area} = 75/0.34 * 0.80$$

Catchment area = 275.74 Sqm

$$(\text{Dia of Catchment area})^2 = 275.74 / \pi/4$$

$$(\text{Dia of Catchment area})^2 = 351.08$$

Dia of Catchment area = 18.73 m  $\approx$  19.00 m

#### DETAILED ESTIMATE ( Kund construction )

कार्य का नाम :-

#### Construction of Individual Kund (75,000 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 $\pi/4$ ( 5.20 ) <sup>2</sup> * 1.50	= 31.856 Cum	71 /Cum	71 /Cum	Rs. 2262	Rs. 2262
b	खुदाई 1.5 मी. से 3.0 मी. तक $\pi/4$ ( 5.20 ) <sup>2</sup> * 1.50	= 31.856 Cum	82 /Cum	82 /Cum	Rs. 2612	Rs. 2612
c	खुदाई 3.0 मी. से 4.5 मी. तक $\pi/4$ ( 5.2 ) <sup>2</sup> * 1.50	= 31.856 Cum	93 /Cum	93 /Cum	Rs. 2963	Rs. 2963
d	खुदाई 4.5 मी. से 6.00 मी. तक $\pi/4$ ( 5.2 ) <sup>2</sup> * 0.25	5.309 Cum	104 /Cum	104 /Cum	Rs. 552	Rs. 552

2.	ईट की चिनाई का कार्य 1:6								
	$\pi/4$	( 5.20 ) <sup>2</sup> * 0.15	=	3.186 Cum					
	$\pi/4$	( 5.20 ) <sup>2</sup> * 4.50 ) * 5.20	=	27.731 Cum					
	$\pi/4$	( 19.46 ) <sup>2</sup> * 19.00 ) * 0.83	=	11.533 Cum					
	$\pi/4$	( 19.46 ) <sup>2</sup> * 19.00 ) * 0.07	=	0.973 Cum					
				<u>43.422</u> Cum	366.00 /Cum	2354.0 /Cum		Rs. 15892	Rs. 102215
3	लिटल लगाने का कार्य (R.C.C. Lintel)								Rs. 10000
4	कुण्ड पर पट्टी लगाने का पूर्ण कार्य								
	$\pi/4$	( 4.50 ) <sup>2</sup> * .45*.45	=	15.702 Sqm	370.00 /Sqm	1191 /Sqm		Rs. 5810	Rs. 18701
5	पायतन पर ईट कंकरीट बिछाने का कार्य mud mortar								
	$\pi/4$	( 19.00 ) <sup>2</sup> * 5.20 ) * 0.10	=	26.229 Cum	236.00 /Cum	445 /Cum		Rs. 6190	Rs. 11672
6	प्लास्टर का कार्य 1:6 अनुपात में   20mm								
	$\pi/4$	( 4.50 ) <sup>2</sup>	=	15.904 Sqm					
	$\pi$	* 4.50 * 5.20	=	73.476 Sqm					
	$\pi$	* 5.20 * 0.50	=	8.164 Sqm					
				<u>97.544</u> Sqm	43 /Sqm	93 /Sqm		Rs. 4194	Rs. 9072
7	प्लास्टर का कार्य 1:6 अनुपात में   12mm								
	$\pi/4$	( 19.00 ) <sup>2</sup> * 5.20 )	=	262.292 Sqm					
	$\pi$	* 19.00 * 0.07	=	4.176 Sqm					
	$\pi$	* 19.23 * 0.23	=	13.888 Sqm					
	$\pi$	* 19.46 * 0.75	=	45.828 Sqm					
				<u>326.184</u> Sqm	43 /Sqm	74 /Sqm		Rs. 14026	Rs. 24138
8	किवाड़ व जाली लगाने का कार्य								
									500
	योग							Rs. 54501	Rs. 184686
									Rs. 5541
								<b>Rs. 54501</b>	<b>Rs. 190226</b>
	लागत श्रम मद में .....				<b>0.545</b>	लाख			
	लागत सामग्री मद में .....				<b>1.357</b>	लाख			
	कुल योग				<b>1.902</b>	लाख			

**Grand Total**

Add 3% for contingencies charges

**Rs. 54501**

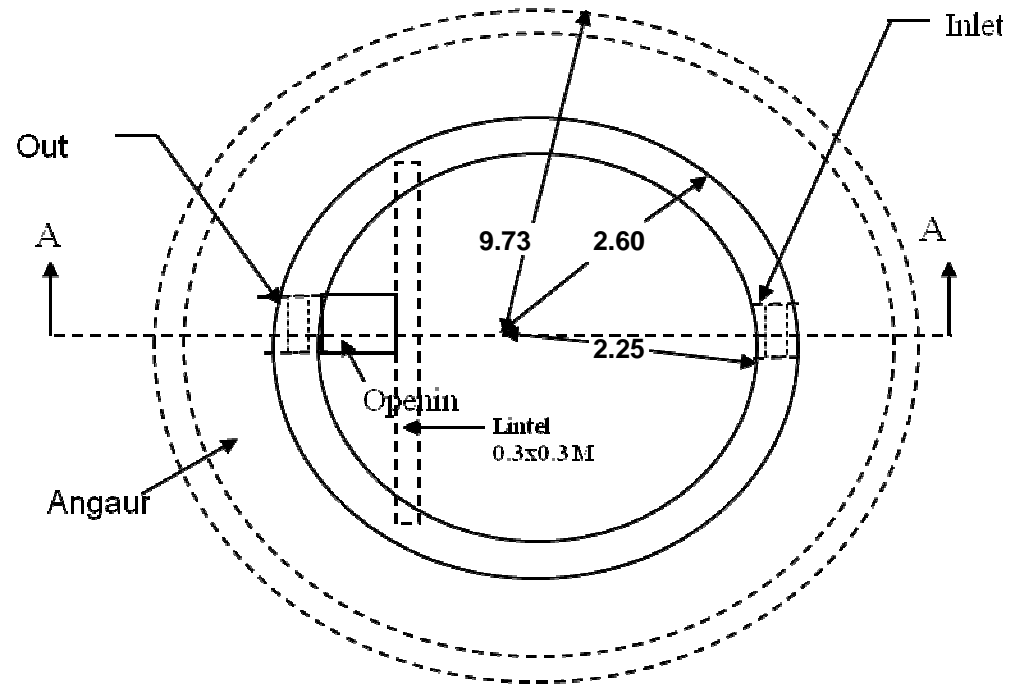
**Rs. 190226**

0.545 लाख

1.357 लाख

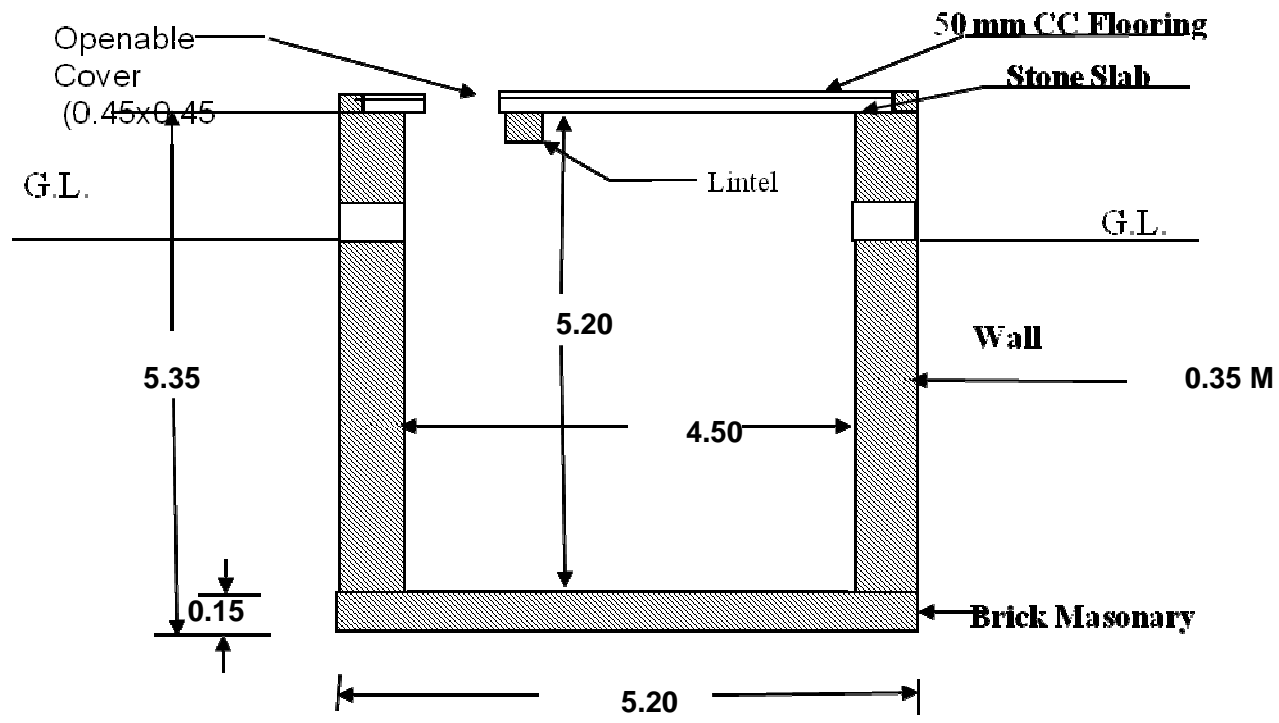
1.902 लाख

ड्राईंग कुण्ड निर्माण



PLAN





SECTION ON 'A-A'

#### 4. Technical Design of Kund/Farm Pond/Taanka of 1,00,000 litre Capacity

Volume of Kund should be 100.00 Cumec for 1,00,000 litre capacity

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

Assuming Diameter of Kund = 4.50 m

$$\text{Than Depth should be} = 100 / \pi/4(4.50)^2$$

Therefore Depth = 6.29 m  $\approx$  6.30 m

Catchment area of Kund should be for 1,00,000 litre

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

Average rainfall of the project area is 340 mm

$$\text{Therefore Catchment area} = 100/0.34 * 0.80$$

Catchment area = 367.65 Sqm

$$(\text{Dia of Catchment area})^2 = 367.65 / \pi/4$$

$$(\text{Dia of Catchment area})^2 = 468.10$$

Dia of Catchment area = 21.63 m  $\approx$  22.00 m

#### DETAILED ESTIMATE ( Kund construction )

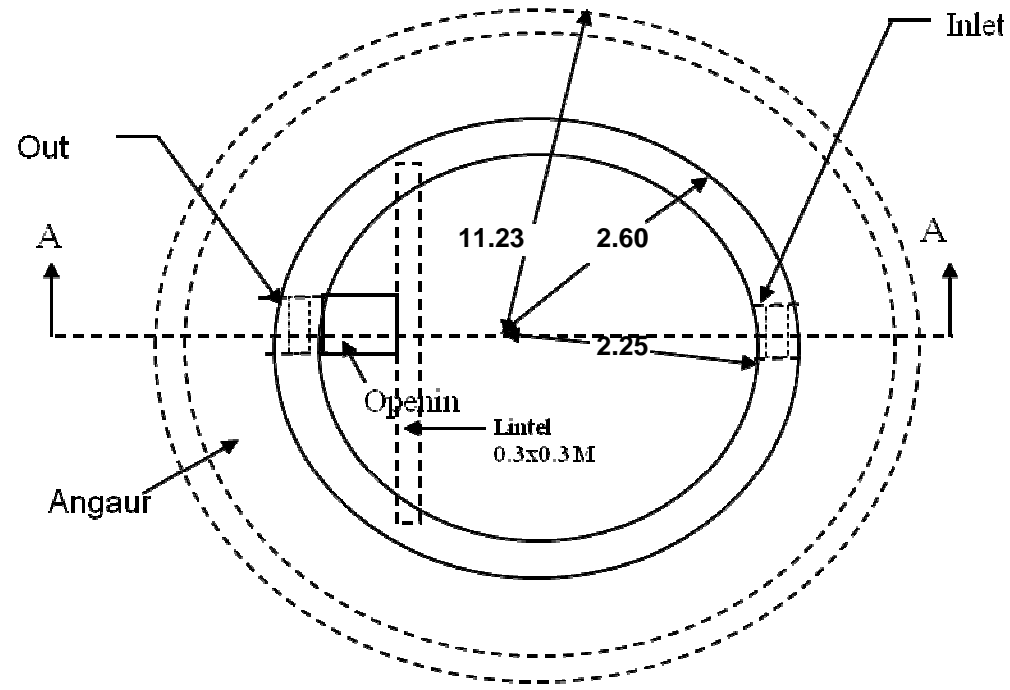
कार्य का नाम :-

#### Construction of Individual Kund (1,00,000 litre Capacity)

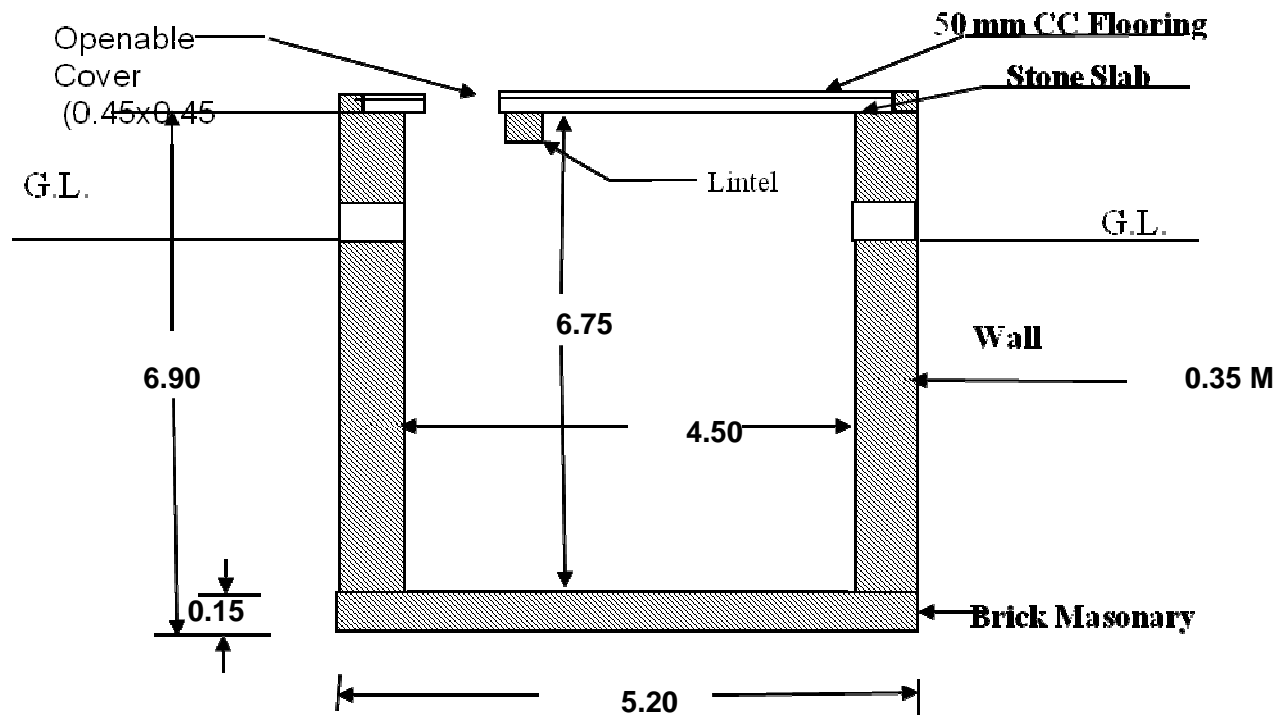
क्र. सं.	विवरण	मात्रा	Rate Labour	Rate Total	Labour	Total
1	कुण्ड की खुदाई का कार्य					
a	खुदाई 0 मी. से 1.5 मी. तक $\pi/4$ ( 5.20 ) <sup>2</sup> * 1.50	= 31.856 Cum	71 /Cum	71 /Cum	Rs. 2262	Rs. 2262
b	खुदाई 1.5 मी. से 3.0 मी. तक $\pi/4$ ( 5.20 ) <sup>2</sup> * 1.50	= 31.856 Cum	82 /Cum	82 /Cum	Rs. 2612	Rs. 2612
c	खुदाई 3.0 मी. से 4.5 मी. तक					

d	$\pi/4$	$( 5.2 )^2 * 1.50$	= 31.856 Cum	93 /Cum	93 /Cum	Rs. 2963	Rs. 2963	
	खुदाई 4.5 मी. से 6.00 मी. तक	$\pi/4$	$( 5.2 )^2 * 1.50$	31.856 Cum	104 /Cum	104 /Cum	Rs. 3313	Rs. 3313
2.	ईट की चिनाई का कार्य 1:6	$\pi/4$	$( 5.20 )^2 * 0.15$	= 3.186 Cum				
		$\pi/4$	$( 5.20 )^2 * 4.50 ) * 6.75$	= 35.997 Cum				
		$\pi/4$	$( 22.46 )^2 * 22.00 ) * 0.93$	= 14.938 Cum				
		$\pi/4$	$( 22.46 )^2 * 22.00 ) * 0.07$	= 1.124 Cum				
				55.245 Cum	366.00 /Cum	2354.0 /Cum	Rs. 20220	Rs. 130047
3	लिटल लगाने का कार्य (R.C.C. Lintel)						Rs. 10000	
4	कुण्ड पर पट्टी लगाने का पूर्ण कार्य	$\pi/4$	$( 4.50 )^2 * .45 * .45$	= 15.702 Sqm	370.00 /Sqm	1191 /Sqm	Rs. 5810	Rs. 18701
	पायतन पर ईट कंकरीट बिछाने का कार्य mud mortar	$\pi/4$	$( 22.00 )^2 * 5.20 ) * 0.10$	35.890 Cum	236.00 /Cum	445 /Cum	Rs. 8470	Rs. 15971
6	प्लास्टर का कार्य 1:6 अनुपात में   20mm	$\pi/4$	$( 4.50 )^2$	= 15.904 Sqm				
		$\pi$	$* 4.50 * 6.75$	= 95.378 Sqm				
		$\pi$	$* 5.20 * 0.50$	= 8.164 Sqm				
				119.446 Sqm	43 /Sqm	93 /Sqm	Rs. 5136	Rs. 11108
7	प्लास्टर का कार्य 1:6 अनुपात में   12mm	$\pi/4$	$( 22.00 )^2 * 5.20 )$	= 358.895 Sqm				
		$\pi$	$* 22.00 * 0.07$	= 4.836 Sqm				
		$\pi$	$* 22.23 * 0.23$	= 16.055 Sqm				
		$\pi$	$* 22.46 * 0.85$	= 59.946 Sqm				
				439.731 Sqm	43 /Sqm	74 /Sqm	Rs. 18908	Rs. 32540
8	किवाड़ व जाली लगाने का कार्य				≈		500	
योग						Rs. 69693	Rs. 230016	
Add 3% for contingencies charges							Rs. 6900	
<b>Grand Total</b>						<b>Rs. 69693</b>	<b>Rs. 236917</b>	
लागत श्रम मद में .....				0.697	लाख			
लागत सामग्री मद में .....				1.672	लाख			
कुल योग				2.369	लाख			

# ड्राईंग कुण्ड निर्माण



PLAN



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
2	.....do.....		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
	3	.....do.....		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	$\pi$	30.47	0.47	1.50	67.49					
	IInd	$\pi$	20.35	0.35	1.00	22.38					
	IIIRD	$\pi$	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.	$\pi$	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	$\pi$	30.00	1.50		141.37					
	IInd	$\pi$	20.00	1.00		62.83					
	IIIRD	$\pi$	10.00	1.00		31.42					
	Pt.	$\pi$	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	
								<b>Grand Total</b>		801837.37	
	लागत श्रम मद में .....								2.73	लाख	
	लागत सामग्री मद में .....								5.29	लाख	
	कुल योग								8.02	लाख	

**DETAILED ESTIMATE**

कार्य का नाम :-

**Construction of Pacca Johar (Pacca Talaab)**

**Capacity - 34.57 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	$\pi/4$	45.94	45.94	1.5	2485.09					
	Ghat	0.5	10	3.7	1.5	27.75					
	Stair	1	3	2.44	1.5	10.98					
				योग	2523.82	घ.मी.	82.00	82.00	206953.60	206953.60	
2	.....do.....		1.5m to 3.00m								
	Ist	$\pi/4$	45.94	45.94	0.1	165.67					
	Ist	$\pi/4$	30.7	30.7	1.00	739.85					
	IIIst	$\pi/4$	15.7	15.7	0.40	77.40					
				योग	982.93	घ.मी.	93.00	93.00	91412.07	91412.07	
3	.....do.....		3.0m to 4.50m								
	IIIst	$\pi/4$	15.7	15.7	0.60	116.10					
				योग	116.10	घ.मी.	104.00	104.00	12074.07	12074.07	
4	सीमेंट कांक्रीट 1सीमेंट, 3बजरी तथा 6गिट्टी पत्थर की 20 मि.मी. नामीय माप की नीव में डालना।										
	Bottom	$\pi/4$	45.94	45.94	0.10	165.67					
	Ghat	1	10.00	3.70	0.10	3.70					
	Stair	2	3.00	2.44	0.10	1.46					
				योग	170.84	घ.मी.	322.60	2368.00	55112.00	404541.93	



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	$\pi$	45.47	0.47	1.50	100.71				
	IInd	$\pi$	30.35	0.35	1.00	33.37				
	IIIRD	$\pi$	15.35	0.35	1.00	16.88				
	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.	$\pi$	45.35	0.35	0.75	37.40				
					योग	203.15	घ.मी.	366.00	2354.00	74354.51
6	सीमेंट प्लास्टर दिवार पर 1:6 अनुपात में सीमेंट बजरी मिलाकर जोड़ो को कुरेदना तथा तराई करना । 20 मि.मी. मोटा									
	Bottom	$\pi/4$	45.00	45.00		1589.63				
	Ist	$\pi$	45.00	1.50		212.06				
	IInd	$\pi$	30.00	1.00		94.25				
	IIIRD	$\pi$	15.00	1.00		47.12				
	Pt.	$\pi$	45.35	1.85		263.57				
	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	2302.13	व.मी.	43.00	93.00	98991.48	214097.85
7	फोटोग्राफी व नाम लिखवाने का कार्य									500.00
								योग	538897.73	1407804.98
								Add 3% Contingencies charges		42234.15
								<b>Grand Total</b>		<b>1450039.13</b>
	लागत श्रम मद में .....								<b>5.39</b>	लाख
	लागत सामग्री मद में .....								<b>9.11</b>	लाख
	कुल योग								<b>14.50</b>	लाख

**DETAILED ESTIMATE**

कार्य का नाम :-

**Construction of Pacca Johar (Pacca Talaab)**

**Capacity - 60.48 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 ।										
	Ist	$\pi/4$	60.94	60.94	1.5	4372.86					
	Ghat	0.5	10	3.7	1.5	27.75					
	Stair	1	3	2.44	1.5	10.98					
	योग					4411.59	घ.मी.	82.00	82.00	361750.58	361750.58
2	.....do..... 1.5m to 3.00m										
	Ist	$\pi/4$	60.94	60.94	0.1	291.52					
	Ist	$\pi/4$	40.7	40.7	1.00	1300.34					
	IIIst	$\pi/4$	20.7	20.7	0.40	134.55					
	योग					1726.41	घ.मी.	93.00	93.00	160556.56	160556.56
3	.....do..... 3.0m to 4.50m										
	IIIst	$\pi/4$	20.7	20.7	0.60	201.82					
	योग					201.82	घ.मी.	104.00	104.00	20989.15	20989.15
4	सीमेंट काक्रीट 1सीमेंट, 3बजरी तथा 6गिट्टी पत्थर की 20 मि.मी. नामीय माप की नींव में डालना ।										
	Bottom	$\pi/4$	60.94	60.94	0.10	291.52					
	Ghat	1	10.00	3.70	0.10	3.70					
	Stair	2	3.00	2.44	0.10	1.46					
	योग					296.69	घ.मी.	322.60	2368.00	95711.60	702557.57

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	$\pi$	60.47	0.47	1.50	133.93					
	Iind	$\pi$	40.35	0.35	1.00	44.37					
	IIIrd	$\pi$	20.35	0.35	1.00	22.38					
	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.	$\pi$	60.35	0.35	0.75	49.77					
				योग		265.24	घ.मी.	366.00	2354.00	97077.94	624375.61
6	सीमेंट प्लास्टर दिवार पर 1:6 अनुपात में सीमेंट बजरी मिलाकर जोड़ो को कुरेदना तथा तराई करना । 20 मि.मी. मोटा										
	Bottom	$\pi/4$	60.00	60.00		2826.00					
	Ist	$\pi$	60.00	1.50		282.74					
	IInd	$\pi$	40.00	1.00		125.66					
	IIIrd	$\pi$	20.00	1.00		62.83					
	Pt.	$\pi$	60.35	1.85		350.75					
	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		3743.49	व.मी.	43.00	93.00	160970.15	348144.74
7	फोटोग्राफी व नाम लिखवाने का कार्य										500.00
								योग	897055.99	2218874.21	
								Add 3% Contingencies charges		66566.23	
								<b>Grand Total</b>		2285440.44	
	लागत श्रम मद में .....								<b>8.97</b>	लाख	
	लागत सामग्री मद में .....								<b>13.88</b>	लाख	
	कुल योग								<b>22.85</b>	लाख	

### Technical Design of Water Harvesting Structure with diversion drain of 200 m length

Considering Length of Road =200 m

Width of Road with berms = 5 m

Average Rainfall = 340 mm

Therefore Runoff =  $200 * 5.00 * 0.34 * 0.8 = 272.00$  Cum = 2.72 Lakhs litre

therefore there should be a WHS at both side of the Road with minimum 1.36 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	
2	.....do..... 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	
3	.....do..... 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 कार्कीट 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	$\pi$	9.47	0.47	1.50	20.97					
	Iind	$\pi$	6.35	0.35	1.00	6.98					
	IIIrd	$\pi$	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.	$\pi$	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	$\pi$	9.00	1.50		42.41					
	IInd	$\pi$	6.00	1.00		18.85					
	IIIrd	$\pi$	3.00	1.00		9.42					
	Pt.	$\pi$	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
			<b>Grand Total</b>			<b>443984.55</b>
	<b>For 2 Stucture</b>					
	लागत श्रम मद में .....				<b>2.24</b>	लाख
	लागत सामग्री मद में .....				<b>6.64</b>	लाख
	कुल योग				<b>8.88</b>	लाख

**Technical Design of Water Harvesting Structure with diversion drain of 400 m**

Considering Length of Road =400 m

Width of Road with berms = 5 m

Average Rainfall = 340 mm

Therefore Runoff = 400 \* 5.00 \* 0.34 \* 0.80 = 544.00 Cum = 5.44 Lakhs litre

therefore there should be a WHS at both side of the Road with minimum 2.72 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
2	.....do..... 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
3	.....do..... 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 काक्रीट 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	$\pi$	12.47	0.47	1.50	27.62							
	Iind	$\pi$	8.35	0.35	1.00	9.18							
	IIIrd	$\pi$	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.	$\pi$	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	$\pi$	12.00	1.50		56.55							
	IInd	$\pi$	8.00	1.00		25.13							
	IIIrd	$\pi$	4.00	1.00		12.57							
	Pt.	$\pi$	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
				<b>Grand Total</b>		<b>715241.45</b>
	<b>For 2 Stucture</b>					
	लागत श्रम मद में .....				<b>3.67</b>	लाख
	लागत सामग्री मद में .....				<b>10.64</b>	लाख
	कुल योग				<b>14.30</b>	लाख

## Technical Design of Water Harvesting Structure with diversion drain of 600 m

Considering Length of Road =600 m

Width of Road with berms = 5 m

Average Rainfall = 340 mm

Therefore Runoff = 600 \* 5.00 \* 0.34 \* 0.80 =816.00 Cum = 8.16 Lakhs litre

therefore there should be a WHS at both side of the Road with minimum 4.08 Lakhs litre Capacity

### DETAILED ESTIMATE

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

**Capacity - 4.53 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	625	1	0.75	468.75				
	Ist	$\pi/4$	15.94	15.94	1.5	299.18				
	Ghat	0.5	10	3.7	1.5	27.75				
	Stair	1	3	2.44	1.5	10.98				
				योग	806.66	घ.मी.	82.00	82.00	66146.40	66146.40
2	.....do..... 1.5m to 3.00m									
	Ist	$\pi/4$	15.94	15.94	0.1	19.95				
	Ist	$\pi/4$	10.7	10.7	1.00	89.87				
	IIIst	$\pi/4$	5.7	5.7	0.40	10.20				
				योग	120.02	घ.मी.	93.00	93.00	11162.05	11162.05
3	.....do..... 3.0m to 4.50m									
	IIIst	$\pi/4$	5.7	5.7	0.60	15.30				
				योग	15.30	घ.मी.	104.00	104.00	1591.49	1591.49
4	सीमेंट कांक्रीट 1सीमेंट, 3बजरी तथा 6गिट्टी पत्थर की 20 मि.मी. नामीय माप की नींव में डालना ।									

	Bottom	$\pi/4$	15.94	15.94	0.10	19.95							
	Ghat	1	10.00	3.70	0.10	3.70							
	Stair	2	3.00	2.44	0.10	1.46							
					योग	25.11	घ.मी.	322.60	2368.00	8100.34	59459.44		
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	625.00	0.91	0.07	39.81							
	Nala	2	625.00	0.23	0.60	172.50							
	Ist	$\pi$	15.47	0.47	1.50	34.26							
	Iind	$\pi$	10.35	0.35	1.00	11.38							
	IIIrd	$\pi$	5.35	0.35	1.00	5.88							
	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.	$\pi$	15.35	0.35	0.75	12.66							
					योग	291.30	घ.मी.	366.00	2354.00	106614.03	685708.82		
6	सीमेंट प्लास्टर दिवार पर 1:6 अनुपात में सीमेंट बजरी मिलाकर जोड़ो को कुरेदना तथा तराई करना । 20 मि.मी. मोटा												
	Nala	1	625.00	0.45		281.25							
	Nala	2	625.00	0.60		750.00							
	Bottom	$\pi/4$	15.00	15.00		176.63							
	Ist	$\pi$	15.00	1.50		70.69							
	IInd	$\pi$	10.00	1.00		31.42							
	IIIrd	$\pi$	5.00	1.00		15.71							
	Pt.	$\pi$	15.35	1.85		89.21							
	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	1510.40	व.मी.	43.00	93.00	64947.14	140467.07		

7	फोटोग्राफी व नाम लिखवाने का कार्य					500.00
				योग	258561.46	965035.28
				Add 3% Contingencies charges		28951.06
				<b>Grand Total</b>		<b>993986.34</b>
	<b>For 2 Stucture</b>					
	लागत श्रम मद में .....				<b>5.17</b>	लाख
	लागत सामग्री मद में .....				<b>14.71</b>	लाख
	कुल योग				<b>19.88</b>	लाख

## CHAPTER – V

Activity Wise Total Abstract of Cost

### *Chapter V Proposed Development Plan for Dhanoti Bari Project*

S. No.	Activities	Unit	Total		
			Unit Cost	Phy.	Fin.
1	Admn.	–	–	–	<b>57.6000</b>
2	Monitoring	–	–	–	<b>5.7600</b>
3	Evaluation	–	–	–	<b>5.7600</b>
<b>(A) Preparatory phase</b>					
1	EPA	<b>No.</b>	–	<b>3</b>	<b>23.0400</b>
2	I & CB	–	–	–	<b>28.8000</b>
3	DPR	–	–	–	<b>5.7600</b>
<b>Total (A)</b>		–	–	–	<b>57.6000</b>
<b>(B) Natural resource management</b>					
<b>Conservation measures for arable land</b>					
1	Tanka/Farm Pond (30000 litre Capacity)	No.	1.000	239	238.1900
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
4	Water Harvesting Structure with diversion drain(4.53 Lakhs litre Capacity)	No.	9.940	2	19.8800
<b>Conservation measures for non arable land</b>					
1	Tanka (50000 litre Capacity)	No.	1.210	2	2.4200
2	Tanka (75000 litre Capacity)	No.	1.900	2	3.8000
3	Tanka (100000 litre Capacity)	No.	2.370	2	4.7400
4	Pacca Johar (Water Harvesting Structure) (15.92 lakhs litre Capacity)	No.	8.020	2	16.0400
5	Pacca Johar (Water Harvesting Structure) (34.57 lakhs litre Capacity)	No.	14.500	1	14.5000
6	Pacca Johar (Water Harvesting Structure) (60.48 lakhs litre Capacity)	No.	22.850	1	22.8500
<b>Total (B)</b>					<b>345.6000</b>
<b>(C) Production Measure</b>					
<b>Production measures for arable land</b>					
1	Horticulture plantation	No.			86.4000
2	Agro-Forestry plantation	No.			
3	Crop Demostration	No.			
4	Medicinal Plantation	Ha.			
5	Vegetable Plantation	Ha.			
<b>Production measures for non arable land</b>					
1	Afforestation & Pasture Development				
<b>(D)Live Stock development Activities</b>					

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.			
5	Castration	No.			
	<b>( E ) Livelihood activities, Production System and Micro Enterprise</b>				
	<b>Activities</b>				
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.	–	–	
	<b>Total (C D &amp; E)</b>				<b>86.4000</b>
	<b>(F) Consolidation Phase</b>		–	–	17.2800
	<b>Total (F)</b>				<b>17.2800</b>
	<b>Grand Total</b>				<b>576.0000</b>

**CHAPTER – VI**  
**Annual Action Plan**

**Annual Action Plan of I 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.	–									0.72		0.72		0.72		0.72		0.72		0.72		0.72		0.72		0.72	<b>0</b>	<b>5.76</b>	
2	Monitoring	–									0.07		0.07		0.07		0.07		0.07		0.07		0.07		0.07		0.07	<b>0</b>	<b>0.58</b>	
3	Evaluation	–																									<b>0</b>	<b>0.00</b>		
	<b>(A) Preparatory phase</b>																										<b>0</b>	<b>0.00</b>		
1	EPA	<b>No.</b>								1	2.88		2.88	1	2.88		2.88	1	2.88		2.88		2.88		2.88		2.88	<b>3</b>	<b>23.04</b>	
2	I & CB	–									1.08		1.08		1.08		1.08		1.08		1.08		1.08		1.08		1.08	<b>0</b>	<b>8.64</b>	
3	DPR	–									0.54		0.54		0.54		0.54		0.54		0.54		0.54		0.54		0.54	<b>0</b>	<b>4.32</b>	
	<b>Total (A)</b>	–								<b>1</b>	<b>4.50</b>	<b>0.00</b>	<b>4.50</b>	<b>1.00</b>	<b>4.50</b>	<b>0.00</b>	<b>4.50</b>	<b>1.00</b>	<b>4.50</b>	<b>0.00</b>	<b>4.50</b>	<b>0.00</b>	<b>4.50</b>	<b>0.00</b>	<b>4.50</b>	<b>0.00</b>	<b>4.50</b>	<b>3.00</b>	<b>36.00</b>	
	<b>Grand Total</b>			<b>0.00</b>		<b>0.00</b>		<b>0.00</b>		<b>0.00</b>		<b>5.29</b>		<b>5.29</b>		<b>5.29</b>		<b>5.29</b>	<b>1.00</b>	<b>5.29</b>	<b>0.00</b>	<b>5.29</b>	<b>0.00</b>	<b>5.29</b>	<b>0.00</b>	<b>5.29</b>	<b>0.00</b>	<b>5.29</b>	<b>3.00</b>	<b>42.34</b>

## Annual Action Plan of II 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.	Phy.	Fin.	
1	Admn.	–		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0	11.52
2	Monitoring	–		0.10		0.10		0.10		0.10		0.10		0.10		0.10		0.10		0.10		0.1		0.1		0.1		0	1.15		
3	Evaluation	–																								1.73		0	1.73		
	<b>(A) Preparatory phase</b>																														
1	EPA	<b>No.</b>																											0	0.00	
2	I & CB	–		0.72		0.72		0.72		0.72		0.72		0.72		0.72		0.72		0.72		0.72		0.72		0.72		0	8.64		
3	DPR	–		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	1.44		
	<b>Total (A)</b>	–		<b>0.84</b>		<b>0.84</b>		<b>0.84</b>		<b>0.84</b>		<b>0.84</b>		<b>0.84</b>		<b>0.84</b>		<b>0.84</b>		<b>0.84</b>		<b>0.84</b>		<b>0.84</b>		<b>0.84</b>		<b>0.84</b>		<b>10.08</b>	
	<b>Grand Total</b>			<b>1.90</b>		<b>1.90</b>		<b>1.90</b>		<b>1.90</b>		<b>1.90</b>		<b>1.90</b>		<b>1.90</b>		<b>1.90</b>		<b>1.90</b>		<b>1.90</b>		<b>1.90</b>	<b>0.00</b>	<b>3.63</b>			<b>24.48</b>		









## Annual Action Plan of IV 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.	–		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96	0	11.52		
2	Monitoring	–		0.10		0.10		0.10		0.10		0.10		0.10		0.10		0.10		0.10		0.10		0.10		0.10	0	1.15		
3	Evaluation	–																							2.02	0	2.02			
	<b>(A) Preparatory phase</b>																													
2	I & CB	–		0.24		0.24		0.24		0.24		0.24		0.24		0.24		0.24		0.24		0.24		0.24		0.24	0	2.88		
3	DPR	–																								0	0.00			
	<b>Total (A)</b>	–		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>2.88</b>		
	<b>(B) Natural resource management</b>																													
	<b>Conservation measures for arable land</b>																													
1	Tanka/Farm Pond (20000 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 (3.13 Lakhs litre Capacity)	No.	1	7.15																			1	7.15			2	14.30		
	<b>Conservation measures for non arable land</b>																													
1	Tanka (50000 litre Capacity)	No.																			1	1.21					1	1.21		
3	Tanka (100000 litre Capacity)																						1	2.37			1	2.37		





## Annual Action Plan of V 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.	–		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0.96		0	11.52	
2	Monitoring	–		0.10		0.10		0.10		0.10		0.10		0.10		0.10		0.10		0.10		0.10		0.10		0.10		0	1.15	
	<b>(A) Preparatory phase</b>																													
2	I & CB	–		0.24		0.24		0.24		0.24		0.24		0.24		0.24		0.24		0.24		0.24		0.24		0.24		0	2.88	
	<b>Total (A)</b>	–		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0.24</b>		<b>0</b>	<b>2.88</b>	
	<b>(B) Natural resource management</b>																													
	<b>Conservation measures for arable land</b>																													
1	Tanka/Farm Pond (30000 litre Capacity)	No.	20	20.00	19	18.19																						39	38.19	
2	Water Harvesting Structure with diversion drain (4.53 Lakhs litre Capacity)	No.	1	9.94																1	9.94							2	19.88	
	<b>Conservation measures for non arable land</b>																													
1	Tanka (50000 litre Capacity)	No.	1	1.21																								1	1.21	
2	Tanka (75000 litre Capacity)	No.			1	1.9																						1	1.90	











- The project will improve the breed of the livestock and animal health. With the result, more production of the milk, meat 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.	–		–	5.76	–	11.52	–	11.52	–	11.52	–	11.52	–	2.88	–	2.88	–	57.60
2	Monitoring	–		–	0.58	–	1.15	–	1.15	–	1.15	–	1.15	–	0.29	–	0.29	–	5.76
3	Evaluation	–		–	0.00	–	1.73	–	0.00	–	2.02	–	0.00	–	2.02	–	0.00	–	5.76
	<b>(A) Preparatory phase</b>																		
1	EPA	No.		3	23.04	–	0.00	–	0.00	–	0.00	–	0.00	–	0.00	–	0.00	3	23.04
2	I & CB	–		–	8.64	–	8.64	–	2.88	–	2.88	–	2.88	–	2.88	–	0.00	–	28.80
3	DPR	–		–	4.32	–	1.44	–	0.00	–	0.00	–	0.00	–	0.00	–	0.00	–	5.76
	<b>Total (A)</b>	–		–	36.00	–	10.08	–	2.88	–	2.88	–	2.88	–	2.88	–	0.00	–	57.60
	<b>(B) Natural resource management</b>																		
	<b>Conservation measures for arable land</b>																		
1	Tanka/Farm Pond (30000 litre Capacity)	No.	1.00	–	–	–	–	100	100.00	100	100.00	39	38.19	–	–	–	–	239	238.19
2	Road Top Water Harvesting Structure (2.01 Lakhs litre Capacity)	No.	4.44	–	–	–	–	2	8.88	0	0.00	0	0.00	–	–	–	–	2	8.88
3	Road Top Water Harvesting Structure (3.13 Lakhs litre Capacity)	No.	7.15	–	–	–	–	0	0.00	2	14.30	0	0.00	–	–	–	–	2	14.30
4	Road Top Water Harvesting Structure (4.53 Lakhs litre Capacity)	No.	9.94	–	–	–	–	0	0.00	0	0.00	2	19.88	–	–	–	–	2	19.88
	<b>Conservation measures for non arable land</b>																		
1	Tanka (50000 litre Capacity)	No.	1.21	–	–	–	–	0	0.00	1	1.21	1	1.21	–	–	–	–	2	2.42



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.																
<b>Total (C, D &amp; E)</b>				<b>0.00</b>		<b>0.00</b>		<b>28.80</b>		<b>28.80</b>		<b>28.80</b>			<b>0.00</b>		<b>86.40</b>	
<b>(F) Consolidation Phase</b>														11.52		5.76		17.28
<b>Total (F)</b>														<b>11.52</b>		<b>5.76</b>		<b>17.28</b>
<b>Grand Total</b>				<b>42.34</b>		<b>24.48</b>		<b>165.52</b>		<b>186.77</b>		<b>128.38</b>		<b>19.58</b>		<b>8.93</b>		<b>576.00</b>