

GOVERNMENT OF RAJASTHAN
RURAL DEVELOPMENT & PANCHAYATI RAJ DEPARTMENT
(WATERSHED DEVELOPMENT & SOIL CONSERVATION)
DETAILED PROJECT REPORT



NAME OF PROJECT : IWMP – NAINWA III
EFFECTIVE AREA OF PROJECT :4548 Ha.
COST /HA - Rs 12000/-
COST OF PROJECT :545.76 Lac
BLOCK :NAINWA
DISTRICT:BUNDI

*PIA – ASSISTANT ENGINEER
W.D. & S.C., P.S. -NAINWA*

*PROJECT MANAGER, WCDC
W.D. & S.C., DISTRICT -BUNDI*

E.P.A WORK



ONE DAY WORKSHOP



CHAPTER-1

BACKGROUND AND INTRODUCTION

1.1 Background of IWMP Watershed Project-

Land and water are essential elements for the sustainability of the human being. Indiscriminate exploitation, injudicious and reckless use of resources for food, fodder and fuel has resulted in excessive soil erosion, deforestation and moisture stress. The end of result is resource poor situation leading to reduced food, fodder and fuel productivity. Again, when soil gets eroded and water run-off, life of the poor farmers becomes miserable, we have now reached such a situation, where unless we think of a scientific approach, we may loose the vital resources for all times to come. In order to save the two basic resources i.e. soil and water and at the same time to increase the production of our requirement of food, fodder and fuel in a sustainable basis, we have to take up development of land and management of water resources on watershed.

Watershed Development program running in India from more than 40 years and recognized as a key instrument for holistic development of village. There have been changes in the guidelines in the watershed program on regular interval to improve the quality and for sustainability of the program.

If we look over the history of the watershed program in India, we find that the concept and adoption of watershed development methodology has been defined & redefined through trials and errors, learning from successes & failures and considering the resource position and stake holders' aspiration. Watershed management is no longer the exclusive domain of soil & water conservationists, it now needs equal contribution from social scientists, doctors and experts of other

disciplines also. It is not now a single way to see watershed program as a geo-hydrological unit but there is urgent need to look watershed project as a key instrument for holistic development of area with special focus on integrating farming sector and livelihoods of the asset less and backward community.

The Department of Land Resources, Ministry of Rural Development, Government of India is implementing a centrally Sponsored Scheme of “**Integrated Watershed Management Program**” (IWMP) in the country from XIth plan. The major objective behind the watershed development approach is to enhance and stabilize production through improved technology and efficient use of natural resources for over all development of inhabitants of the watershed. The latest “**Common Guidelines**” for IWMP has been formulated on the experiences of 14 years of all stakeholders’ ministries. The focus of IWMP is “**to improve rural livelihoods through participatory watershed development with focus on integrated farming system for enhancing income, productivity and livelihood security in a sustainable manner**”.

Rajasthan is the biggest area in terms of area of the country and have huge importance in context of watershed program. District Cell cum Data Center (WCDC) Bundi submitted a preliminary project proposal (PPR) through SLNA for treatment of Nainwa-III watershed project area because it’s adjoining area has already been treated earlier under IWMP and community is highly influenced by impact of the project now they recognize the importance of watershed program. On demand of community the remaining area of macro watershed covered under Nainwa-III watershed project which has been sanctioned by department of land resources, ministry of Rural development, GOI in year 2011-12.

Location.

Nainwa_III Project is located in Nainwa Block, of Bundi district. The project area is between the latitudes north $25^{\circ} 36'$ and $25^{\circ} 45'$ & $75^{\circ} 48'$ and $75^{\circ} 56'$ east longitudes. It is at a distance of 25 km from its Block head quarters and 65 Kms from the district head quarters. There are 9no. of habitations in the Project area and other details are given below.

General features of watershed

sS.No.	Name of Project(as per GOI)	Nainwa III

(a)	Name of Catchment	Chambal Basin catchment area
(b)	Name of watershed area(local name)	Nainwa III
©	Project Area	4605.38 Ha
(d)	Net treatable Area	4548 Ha
e)	Cost of Project	545.76Lac.
f)	Cost/hectare	12000/per ha
g)	Year of Sanction	2011-2012
h)	Watershed Code	090405
i)	No. of Gram Panchayats in project area	5
j)	No. of villages in project area	9
k)	Type of Project	other
l)	Elevation (metres)	231-318M
m)	Major streams	First & Second order
n)	Slope range (%)	1-3%

Macro/micro	Name of Gram Panchayat	Name of Villages Covered	Census code of villages	Area(Ha)
6/1,6/2	DUGARI	DUGARI	02718200	1463.44
5/14	DODI	LAXMIPURA	02719000	268.55
5/14	DODI	PANDULA	02723700	306.80
6/2	BHAJNERI	BHAJNERI	02719200	983.82
5/12	DOKUN	DOKUN	02723500	531.25

5/12	GUDASADAVERTIA	GUDASADAVERTIA	02729600	215.22
5/12	GUDASADAVERTIA	KALAMAL	02725200	255.50
5/12	GUDASADAVERTIA	JEEVANPURA	02725300	205.70
5/12	GUDASADAVERTIA	DEVPURA	02725400	317.72

The watershed falls in Agroclimatic Zone V Sub humid. The soil texture is Sandy loam with kankar and murram. The average rainfall is 53.17cm . The temperatures in the area are in the range between minimum 20⁰ to 47⁰ degree centigrade maximum during summer and minimum 4.5⁰ to 15⁰ degree centigrade maximum during winter. The major crops in the area are Maize, Jwar, Musterd, Moong, Urad, Til and Graham. 74.58% land is under cultivation. 1.7% land fallow, 25.54% land is wasteland. 10.91 % land is irrigated through_wells.

284_ No of households are BPL(9.51% households) 112 are landless households (3.75% households)

and 2498 household are small and marginal farmers (83.65%household) . Average land holding in the

area is 1.13ha. 33.55% area is single cropped area and 66.44% is double cropped. The main source of

irrigation is well. The average annual rainfall (5 years) in the area is 537 mm. The Major streams in the

Watershed are first & second order. The major festivals in the village are Holi, Diwali & Dehelwalji Mela.

At present these villages having 17185 population with Communities like Meena, Dhakar, Berwa and

Gurjar

Climatic and Hydrological information

1	Average Annual Rainfall(mm)	
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	Year	Average Annual Rainfall(mm)	
1	2003	370.00	
2	2004	503.00	
3	2005	540.00	
4	2006	508.00	
5	2007	708.00	
6	2008	311.00	
7	2009	415.00	
8	2010	559.00	
9	2011	868.00	
10	2012	535.00	
2	Average Monthly rainfall (last ten years)		
	Month	Rainfall(mm)	
i)	June	52.10	
ii)	July	189.40	
iii)	August	206.00	
iv)	September	62.20	
3	Maximum rainfall intensity (mm)		
	Duration	rainfall intensity(mm)	
	i) 15 minute duration	100	
	ii) 30 minute duration	72	
	iii) 60 minute duration	65	
4	Temperature (Degree C)		
	Season	Max	Min
	i) Summer Season	47	20

	<i>ii) Winter Season</i>	23	4.5
	<i>iii) Rainy Season</i>	27.5	19.5
5	Potential Evaporation Transpiration (PET) (mm/day)		
	<i>Season</i>	<i>PET</i>	
	<i>i) Summer</i>		
	<i>ii) Winter</i>		
	<i>iii) Rainy</i>		
6	<i>Runoff</i>		
	<i>i) Peak Rate (cum/hr)</i>		
	<i>ii) Total run off volume of rainy season (ha.m.)</i>		
	<i>iii) Time of return of maximum flood</i>	5 years	10 years In- Ye ar
	<i>iv) Periodicity of Drought in village area</i>	311	311 535

Other Development Schemes in the project area

S.No	Scheme	Name of the department	Key interventions under the Scheme	Targeted Beneficiaries	Provisions under the Scheme
1	MNREGS	R.D	Rural employment	All Residents	100 day employment per year
2	AATMA	Agriculture	Agri. Technique.	Cultivators	New technique intervention
3	MADA	R.D	Water Resource, Road, development	All Citizens	Work dependent
4	MLA/MP Lad	All Dpts.	Development Works	All Citizens	Area development

Infrastructure Facilities in project area-

Dugari and Bhajneri are the big villages of the project area and have reasonable infrastructure facilities which are supposed to have in the rural area. However support and extension mechanism available in education, health, veterinary and cooperative is not very encouraging. community reveal the fact that government functionary work at panchyat level is also fully committed for their duties. Few roads are still in kutcha condition.

The table given below gives an impression about the infrastructure facilities available in the project area.

Infrastructure Facilities –

Infrastructure facility	Dugari	Iaxmipur	Pandul	Bhajneri	Dokun	Gudasadver	Kalamal	Jeevanpur	Devpura
Primary Health Center	Yes							Yes	Yes
Post office	yes							Yes	
Telephone	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Aganwadi	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Primary school	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Secondary school	Yes							Yes	
Ration shop	Yes							Yes	Yes
Tape connection								Yes	
Veterinary hospital								Yes	
Bank								Yes	
GSS	Yes							Yes	
Cooperative								Yes	
Patwar circle	Yes							Yes	Yes

Gravel road	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Damar road	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Medical	Yes							Yes	
Grocery shop	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fertilizer shop	Yes			Yes				Yes	
Rajiv Gandhi Seva Kendra	Yes							Yes	Yes
Computer Shop								Yes	
Dairy							Yes	Yes	Yes
Community well	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Institutional arrangements at project level

Strong Institutions are the key factor for sustainability of any project. As per envisaged in common guidelines, the five institutions at project level are described below.

1. *Project Implementing Agency (PIA)*
2. *Watershed Development Team (WDT)*
3. *Self Help Groups (SHGs)*
4. *Users Group (UGs)*
5. *Watershed Committee (WC)*

Project Implementing Agency (PIA) – Watershed Cell cum Data Center (WCDC) Bundi appointed Assistant Engineer, watershed as the PIA of the IWMP-VII, Nainwa-III watershed project.

<i>Detail of PIA</i>	
<i>Name of PIA</i>	<i>Assistant Engineer(AEn), Watershed, PS, Nainwa</i>
<i>Name of PIA head</i>	<i>Sh Mahaveer Prasad Jain</i>
<i>Name of coordinating person</i>	<i>Sh S.N.Sharma, A.P.O.(LR)</i>
<i>Name of chief functionary</i>	<i>Shri P.C.Kothari, Project manager</i>
<i>Department</i>	<i>Watershed development & Soil Conservation</i>
<i>Office address</i>	<i>Panchayat Samiti Campus, Nainwa. District – Bundi</i>
<i>Phone</i>	<i>9414278237</i>

Watershed Development Team (WDT) - WDT is the pillar of any watershed project. PIA recruited dedicated team of young professionals of four member's team in multidisciplinary field. The brief detail is given below in the table. The table shows that one member in the team are female in field of sociology.

WDT members were appointed by the PIA in control of WCDC by open advertisement but position of WDT (engineer) is still vacant so Jen of Panchayat samiti is looking after and perform the role of WDT. Team is very young and totally new for Watershed project.

WDT Particulars:

1	2	3	4	5	6	7	8
S.No	Name of WDT member	M/F	Age	Qualification	Experience in watershed(Yrs)	Description of professional training	Role/ Function
1	Mr M.P.Jain	M	42	B.E(Ag)	16 Yrs	Training by Watershed Dpt.	N.R.M.activity
2	Mr Brijmohan Meena	M	24	BSc(Ag)	3Yrs	Training by Watershed Dpt.	Agriculture Activity
3	Mrs Shila Dadich	F	23	M.A.(socil.)	3Yrs	Training by Watershed Dpt.	Social Work
4	Mr Atmaram	M	24	Diploma(A.H)	3Yrs	Training by Watershed Dpt.	Animal helth

About WCDC- The unit at district level looking after the IWMP is called WCDC. The office of

WCDC is located in the Jila Parishad, Collectorate Bundi managed by XEN (Land resources).

WCDC is currently looking after 8 IWMP watershed projects in the district.

<i>Detail of WCDC</i>	
<i>Name of WCDC</i>	<i>Watershed cell cum Data Center</i>
<i>District</i>	<i>Bundi</i>
<i>Name of chief functionary</i>	<i>Shri P.C.Kothari</i>
<i>Designation</i>	<i>Project Manager WCDC cum XEN(Land resources)</i>
<i>Total staff available</i>	<i>5</i>
<i>Technical staff</i>	<i>2</i>
<i>Supporting staff</i>	<i>3</i>
<i>Address</i>	<i>Project Manager (IWMP), WCDC, Zila Parishad, Collectorate, Bundi</i>
<i>Telephone No</i>	<i>0747-2445242</i>
<i>E mail</i>	<i>dwdu.bundi@gmail.com</i>

About SLNA – This is the apex body at state level. Directorate of Watershed Development and Soil Conservation (WD & SC) is the playing the role of SLNA in the Rajasthan

<i>Detail of SLNA</i>	
<i>Name of SLNA</i>	<i>Directorate, Watershed Development & Soil Conservation</i>
<i>State</i>	<i>Rajasthan</i>
<i>Name of chief functionary</i>	<i>Mr. M.S.Kala</i>
<i>Designation</i>	<i>Chief Executive Officer cum Director</i>
<i>Address</i>	<i>Pant Krishi Bhawan, Tilak Marg, Jaipur</i>
<i>Date of notification</i>	<i>30.06.2011</i>
<i>Chairperson</i>	<i>Sh S.M.Panday , additional chief secretary , RD & PR, GOR</i>
<i>Telephone No</i>	<i>0141-2227189</i>
<i>Fax No.</i>	<i>0141-2227858</i>
<i>E mail</i>	<i>dir_wdsc@dataone.in</i>

Sub Committee Watershed - (WC)

As per envisaged in the common guidelines that Watershed committee would be formed at Gram Panchayat level in the Gram Sabha in a democratic manner to ensure the active involvement and participation of all segment of society. WDT team will provide the technical support in formation of the watershed committee. In the Rajasthan, Directorate of Watershed and Soil conservation, state government did few amendments in the favor of strengthening Panchayati raj system. WC declared as a subcommittee of the Gram Panchayat and work in control and closed supervision of Gram Panchayat.

1. Sarpanch of Gram Panchayat is declared and included in the watershed committee along with Chairman and secretary of the watershed committee. Sarpanch of Gram Panchayat replace by the chairperson as one of the signatory of the watershed committee.
2. No need for registration of the subcommittee under any legal act.

PIA constituted four WC (Sub committee- Watershed) one each at Gram Panchayat in the Nainwa-III watershed project. The committee constituted in the gram sabha organized in the village. The members of the committee selected through democratic manner. During selection of committee it was taking care of fulfillment of norms of the guidelines. The representatives from SHG, UG, and GP were covered. Women were also included in the watershed committee.

Details of Watershed Committees (WC)

S. N.	Name of WCs	Date of Gram Sabha for WC	Designation	Name	M/F	SC/ST/OBC/General	Landless /MF/SF/BF	Name of UG/SHG
1	Dugeri	10.01.13	President	Urmila Chauhan	F	General	BF	Surpanch
			Secretary	Jalaluddin	M	General	SF	
			Member	Jedish Singh	M	General	SF	Pashupalan
			Member	Motishankar	M	OBC	SF	CHERAGAH
			Member	Bajranga Berwa	M	SC	SF	KRISHI BHUMI
			Member	Ramdev Khetik	M	SC	BF	NALA UPCHAR
			Member	Gopal Reger	M	SC	BF	KRISHI BHUMI
			Member	Bharulal Khetik	M	SC	SF	HORTICULTUR E

							SF	HORTICULTUR E
			Member	Prabhu Lal	M	ST		
			Member	Chotmal Kir	M	OBC	SF	NALA UPCHAR
			Member	Stynrin Mali	M	OBC	SF	CHERAGAH

Details of Watershed Committees (WC)

S.N.	Name of WCs	Date of Gram Sabha for WC	Designation	Name	M/F	SC/ST/O BC/ General	Landless/ MF/SF/ BF	Name of UG/SHG
1	Bhajneri	8.1.13	President	Surma Devi	F	ST	BF	Surpanch
			Secretary	Babulal Meena	M	ST	SF	
			Member	Durgalal	M	Gen.	SF	U.G
			Member	Girraj meena	M	ST	SF	U.G
			Member	Bhalashankar	M	OBC	SF	U.G
			Member	Bhawrlal	M	ST	BF	U.G
			Member	Sanjay Kumar	M	ST	BF	U.G

			<i>Member</i>	<i>Mahveer</i>	<i>M</i>	<i>OBC</i>	<i>SF</i>	<i>U.G</i>
			<i>Member</i>	<i>Modulal</i>	<i>M</i>	<i>SC</i>	<i>SF</i>	<i>U.G</i>
			<i>Member</i>	<i>Herishankar</i>	<i>M</i>	<i>ST</i>	<i>SF</i>	<i>U.G</i>
			<i>Member</i>	<i>GyrsiBai</i>	<i>F</i>	<i>ST</i>	<i>SF</i>	<i>SHG</i>
			<i>Member</i>	<i>Mangilal Mali</i>	<i>M</i>	<i>OBC</i>	<i>SF</i>	<i>UG</i>

Details of Watershed Committees (WC)

<i>S.N.</i>	<i>Name of WCs</i>	<i>Date of Gram Sabha for WC</i>	<i>Designation</i>	<i>Name</i>	<i>M/F</i>	<i>SC/ST/O BC/ General</i>	<i>Landless/ MF/SF/ BF</i>	<i>Name of UG/SHG</i>
	<i>Dokune</i>	<i>5.1.13</i>	<i>President</i>	<i>Ramvilas</i>	<i>M</i>	<i>OBC</i>	<i>SF</i>	<i>Surpanch.</i>
			<i>Secretary</i>	<i>Kamlesh Kumar</i>	<i>M</i>	<i>G</i>	<i>SF</i>	
			<i>Member</i>	<i>Ramprasad Nagar</i>	<i>M</i>	<i>OBC</i>	<i>SF</i>	<i>UG</i>
			<i>Member</i>	<i>Hanumansing</i>	<i>M</i>	<i>G</i>	<i>BF</i>	<i>UG</i>
			<i>Member</i>	<i>Prabhu Dhakar</i>	<i>M</i>	<i>OBC</i>	<i>SF</i>	<i>UG</i>
			<i>Member</i>	<i>Rampraksh Berwa</i>	<i>M</i>	<i>SC</i>	<i>SF</i>	<i>SHG</i>

			<i>Member</i>	<i>MishriLal Meena</i>	<i>M</i>	<i>ST</i>	<i>SF</i>	<i>UG</i>
			<i>Member</i>	<i>Kajod Meena</i>	<i>M</i>	<i>ST</i>	<i>BF</i>	<i>UG</i>
			<i>Member</i>	<i>Rameshwer Berwa</i>	<i>M</i>	<i>SC</i>	<i>SF</i>	<i>UG</i>
			<i>Member</i>	<i>Parsadi Bai</i>	<i>F</i>	<i>ST</i>	<i>SF</i>	<i>SHG</i>
			<i>Member</i>	<i>Dhanna Lal Meena</i>	<i>M</i>	<i>ST</i>	<i>SF</i>	<i>UG</i>
			<i>Member</i>	<i>Mangilal Berwa</i>	<i>M</i>	<i>SC</i>	<i>SF</i>	<i>UG</i>
			<i>Member</i>	<i>Modu Meena</i>	<i>M</i>	<i>ST</i>	<i>SF</i>	<i>SHG</i>

Details of Watershed Committees (WC)

<i>S.N.</i>	<i>Name of WCs</i>	<i>Date of Gram Sabha for WC</i>	<i>Designation</i>	<i>Name</i>	<i>M/F</i>	<i>SC/ST/O BC/ General</i>	<i>Landless/ MF/SF/ BF</i>	<i>Name of UG/SHG</i>
<i>1</i>	<i>DODI</i>	<i>7.01.2013</i>	<i>President</i>	<i>Gita Bai</i>	<i>F</i>	<i>OBC</i>	<i>SF</i>	<i>Surpnch</i>
			<i>Secretary</i>	<i>Mumtej Mohmmad</i>	<i>M</i>	<i>G</i>	<i>SF</i>	
			<i>Member</i>	<i>Raja Ram Berwa</i>	<i>M</i>	<i>SC</i>	<i>SF</i>	<i>UG</i>
			<i>Member</i>	<i>Gopal Sen</i>	<i>M</i>	<i>OBC</i>	<i>SF</i>	<i>UG</i>

		<i>Member</i>	<i>Ompraksh Meena</i>	<i>M</i>	<i>ST</i>	<i>SF</i>	<i>UG</i>
		<i>Member</i>	<i>Hemraj Sani</i>	<i>M</i>	<i>OBC</i>	<i>SF</i>	<i>SHG</i>
		<i>Member</i>	<i>Bajrang Lal Meena</i>	<i>M</i>	<i>ST</i>	<i>SF</i>	<i>UG</i>
		<i>Member</i>	<i>SitaRam Meena</i>	<i>M</i>	<i>ST</i>	<i>SF</i>	<i>SHG/</i>
		<i>Member</i>	<i>Santosh Bai Sharma</i>	<i>F</i>	<i>G</i>	<i>BF</i>	<i>UG</i>
		<i>Member</i>	<i>Babulal Sharma</i>	<i>M</i>	<i>G</i>	<i>SF</i>	<i>UG</i>
		<i>Member</i>	<i>Kishan Lal Meena</i>	<i>M</i>	<i>ST</i>	<i>SF</i>	<i>UG</i>
		<i>Member</i>	<i>Dhanna Meena</i>	<i>M</i>	<i>ST</i>	<i>SF</i>	<i>UG</i>

Problems and scope for improvement of the project area

PIA is working in the project area from a long time and very well aware about the problems which are act as barrier in holistic development of the area. Key problems are mentioned below in context of watershed program.

Unknown Format

The socio economic conditions of the area can be improved through increased production which can be achieved through expansion in cultivated area and productivity enhancement 78.55 ha land is arable wasteland and 996.48 ha is revenue west land can be brought under cultivation.

496.2 ha is only irrigated and with efforts this can be increased to 950 ha . The productivity gap of major crops in the area as compared with district and with areas in the same agro

climatic zones indicate potential to increase the productivity. The demonstration of improved package of practices, improved varieties, increased irrigation facilities and soil conservation measures under the project can bridge this gap. Due to small land holdings in the area focus of the project would be on diversification in agriculture (horticulture, vegetables, green houses, Agro forestry, fodder crops)and diversification in Livelihoods(Agriculture, Animal husbandry, self employment)

1000 Quintal fodder scarcity can be met out through Pasture development .Improved animal Husbandry practices can increase the productivity of livestock.112 no of persons migrate due to unemployment this migration can be checked through creation of employment opportunities in the project area through increase in production and diversification in agriculture and Livelihoods as mentioned above.

Base Line Survey Format for IWMP MIS website

Project Name:- NAINWA-III (I.W.M.P. VII)

Total Geographical Area of Project (Lakh Hectares) .04548 L.Ha

Treatable Area

Wasteland (Lakh Hectares)	0.04548	Rainfed Agricultural Land (Lakh Hectares)	0.02896
Total Cropped Area (Lakh Hectares)	.05646	Net Sown Area (Lakh Hactares)	.03392
Total no. of Water Storage Structure	15	Total no. of Water Extracting Units	1023
Total storage capacity of water storage structures (cubic meters)	125000		

No. of Household

SC	567	ST	572
Others	1847		
Total Population of the project Area	17185	No. of Household of Landless people	112
Total no. of BPL Household	284		
No. of person-days of Seasonal Migration	10080	No. of Marginal Farmer's Household	388

Depth of Ground Water (meters) below Ground level

Pre- monsoon	30-35m	Post-monsoon	25-30m
No. of person-days of Seasonal Migration	10080		

CHAPTER-2

SOCIO -ECONOMIC FEATURES OF

NAINWA-III WATERSHED PROJECT

CHAPTER-2

Socio –Economic Features of Nainwa-III watershed project

This chapter deals with general characteristics and gives an overall impression of Nainwa -III watershed project and help to understand the project at a glance.

2.1 Demographic Pattern

The total household of Nainwa –III watershed project area of the 9 villages in the project area is 4548Ha. The table given below reveal the impression that biggest village is Dugeri with 856 H/Hs (28.56 %) and Pandula is smallest Village with 48 H/Hs (1.6%) in the project area.

Caste analysis of demographic data of project area reveals the fact that majority of population of the project area belong to OBC (53.3%), followed by ST (19.15%), SC (18.97%) and others 8.57(%). SC % of population is maximum in Dugari and minimum in Pandula Village, similarly ST population is maximum in Bhajneri village and minimum in Pandula village .

The BPL population percentage in the project area is 9.5%. The total population of the 9 villages of the Nainwa-III watershed project area is 17185. The male population percentage is

52.24% and female percentage is 47.76%. Sex ratio in project area is 915 female to 1000 male.

2.2 Population & Household Details:

Total Population				
Male	Female	Total	SC	ST
8976	8209	17185	3260	3291

2.3 Household Details						
BPL household	L. Less	Small Farmer	M. Farmer	Total household	SC household	ST household
284	112	2110	388	2986	567	572

2.4 Demographic Pattern

Name of Village	Total	Total family				Total	family	
	H/Hs	SC	ST	OBC	Others	BPL	APL	
DUGARI	1288	206	103	875	104	119	1169	
LAXMIPURA	198	28	101	47	22	22	176	
PANDULA	48	8	0	32	8	7	41	
BHAJNERI	852	232	210	368	42	73	779	
DOKUN	163	26	0	117	20	21	142	
GUDASADAVERTIA	155	24	26	86	19	17	138	
KALAMAL	129	12	63	27	27	11	118	
JEEVANPURA	61	16	29	6	10	5	56	

DEVPURA 92 15 40 34 3 9 83

TOTAL	2986	567	572	1592	255	284	2702
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2.5 Land use – Land use is the most important feature of any watershed project. For Nainwa-III watershed project, land use pattern is quite surprising which prove by the table given below.

Name of Villages	Total area	Arable Land		Non Arable land					
		Cultivable Irrigated	Non Irrigated	Non Cultivable	Pasture	Forest	Revenu/ Gov. Waste	Others	
DUGARI	1463.4	4	223.7	593.89	40.54	67.4	1.75	446.8	89.36
LAXMIPURA	268.55		11.6	239.61	1.4		0	14.98	0.96
PANDULA	306.8		17.5	268.53	0.65		0	18.8	1.32
BHAJNERI	983.82		120.9	538.16	16.7	17.7	0	249.8	40.56
DOKUN	531.25		76.4	219.95	12.9	9.8	0	186.3	25.9
GUDASADAVE									
RTIA	215.22		8.6	180.92	1.7		0	22.7	1.3
KALAMAL	255.5		9.2	228.54	2.2		0	14.7	0.86
JEEVANPURA	205.7		11.7	167.27	0.96		0	24.5	1.27
DEVPURA	317.72		16.6	277.43	1.5	2.4	0	17.9	1.89

TOTAL 4548 496.2 2714.3 78.55 97.3 1.75 996.48 163.42

2.6 Land Use	Total area in Ha.				
	Private	Panchayat	Government	Community	Total
Agriculture Land	3392.32	0	0	0	3392.32
Temporary fallow	78.55	0	0	0	78.55
Permanent Fallow	0	0	996.48	0	996.48
Cultivated Rainfed	2714.3	0	0	0	2714.3
Cultivated irrigated	496.2	0	0	0	496.2
Net Sown Area	3392.32	0	0	0	3392.32
Net Area sown more than once	2254.15	0	0	0	2254.15
Forest Land	1.75	0	0	0	1.75
Waste Land	0	0	996.48	0	996.48
Pastures	0	97.3	0	0	97.3
Others	0	0	165.17	0	165.17

The total sanction area available for treatment is 4548 ha of 9 villages in five gram Panchayat. Analysis of land use data gives an impression that 74.58 % of the total area is cultivable followed by 21.9 % cultivable waste land, 1.37 % non cultivable, 2.1% pasture and .05 % land cover under habitat. The total arable area of the project area is large; it shows that potential for works on arable land development is comparatively more in the Nainwa-III watershed. The area under irrigation is only 10.91% of the total area.

2.7 Agriculture -

Agriculture is the prime occupation of livelihoods of the more than 80% of population of project area. Discussion with farmers gives an impression that agriculture production area is fluctuating and depends on the rains of the particular year.

A PRA exercise carried out with the community members by ensure the involvement of all types of farmer to know about agriculture practices of the project area. If we summarize the discussion, its says that agriculture is alternated between two seasons of Kharif and Rabi. The major crops under Khraif are Maize, Til, Soybean, Moong etc. Area under maize crop is maximum (up to 70%) in condition of initial good rains but it replace by til in case of low rainfall.

<i>Kharif</i>	<i>Maize, Til, Soybean, Moong, Jowar</i>
<i>Rabi</i>	<i>Wheat, Mustard, Gram, Zow</i>

Similarly Wheat, Mustard, Zow, Gram are the major crop of the project area. Wheat is the first choice and cover almost 70% of the double crop area in case of good rains but it replace by mustard and gram if rains available in project area are less.

It was very difficult to get the area sown under Rabi through PRA because community informed that it is purely depends on the availability of rains in the monsoon, time of rains and availability of rains in winter (Maawat). In season of more than average rainfall, wheat is the first choice of farmer otherwise they prefer to go with Gram. They prefer wheat because of good rate in market of wheat, self consumption and fulfillment of requirement of fodder.

Table 2.8 Productivity Gap Analysis (The table can also be given in bar chart form)

Name of the crop	Productivity kg/ha				
	India	Highest Average in Rajasthan	Highest Average of Agro climatic zone	District	Project Area
<i>Wheat</i>	2988	2821	3680	3720	3690

<i>Grham</i>	808	948	975	1180	1065
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<i>Musterd</i>	<i>1177</i>	<i>1155</i>	<i>1250</i>	<i>1450</i>	<i>1380</i>
<i>Maiz</i>	<i>2967</i>	<i>1098</i>	<i>1450</i>	<i>2000</i>	<i>1825</i>

<i>Detail of project area on crop diversification</i>			
<i>Name of Villages</i>	<i>Fruit cultivation</i>	<i>Vegetable cultivation</i>	
		<i>No of farmers</i>	<i>Area</i>

<i>Devpura</i>	<i>No farmer have horticulture orchard</i>	3	1.5
<i>Jeevanpura</i>		6	3
<i>Kalamal</i>		6	3
<i>Gudasadvertia</i>		2	1
<i>Pandula</i>		6	3
<i>Dugari</i>	<i>8 farmers have horticulture orchard</i>	8	4
<i>Dokune</i>	<i>No farmer have horticulture orchard</i>	2	1
<i>Laxmipura</i>		2	1

2.9 Horticulture and Vegetables

Farmers in project area are mainly involved in traditional agriculture practices and believe in food grain and cereals. They are hesitating to move towards crop diversification. The data mention in the table shows that project area has only 3 horticulture orchard. However very few families (progressive farmers) those have assured source of water are growing vegetables.

PIA made their efforts to know the farmers interest about types of fruit plantation which is suitable to the agro climate zone, they took interest to grow orchard of Mango, Papaya, Citrus, Guava and Aowla. Among all mango is the first choice of farmer. Farmers are taking interest in horticulture orchard however it would be challenge for PIA to benefit the farmer in maximum 24000/- per ha with 20 % contribution because majority of farmer field have no fencing at current moment. There is better scope for mobilize the resources of NHM in the project area. Farmers know about vegetable cultivation but they feel reluctant due to lack of market availability in nearby area because Indragrh and Nainwa both are 25-30 km from the project area. However, there would be arrangement for bulk purchase in future

2.10 Land Holding

Land holding data of Nainwa-III watershed project is presented below in the table. Analysis of the data of project villages reveals the fact that approximately 70.66 % of farmer comes under small farmer category followed by marginal farmers at 12.99 %, 12.59 % of big farmers and 3.75 % landless in project area. The total population of small and marginal farmers is 83.65 % of total households which is a huge part. Average land holding of the project area is 1.13 ha land.

Land Holding status of project villages						
S.No	Name of village	Total families	Marginal	Small	Big	Landless
1	DUGARI	1288	178	983	70	57
2	LAXMIPURA	198	16	108	66	8
3	PANDULA	48	6	32	8	2
4	BHAJNERI	852	122	580	125	25
5	DOKUN	163	27	92	39	5
6	GUDASADAVERTIA	155	15	107	29	4
7	KALAMAL	129	8	94	21	6
8	JEEVANPURA	61	6	43	11	1
9	DEVPURA	92	10	71	7	4
10	TOTAL	2986	388	2110	376	112

2.11 Analysis of Category and Farmers land holding					
Category	Total	SC	ST	OBC	Others
Marginal	388	178	79	83	48
Small	2110	889	712	421	88
Big	376	29	172	127	48

<i>Land less</i>	112	83	19	10	0
<i>Total</i>	2986	1179	982	641	184

If we compare the land holding and caste of the project area, data shows the impression that 11.89% marginal farmer belongs to SC/ST category and 74% of SC/ST comes under small farmer and hardly 9.3 % farmer cover under big farmer's category.

2.12 Livestock- *Rajasthan state is at first position in number of animals and has the biggest share of the animals 20% in the country. Livestock in Bundi district occupies a prominent position contributing significantly to the livelihood, mitigation of risks and distress of the farmers. In Rajasthan where drought is a common phenomenon, livestock sector has been able to provide a good coping mechanism and reduced vulnerability in the region which has been experiencing drought like situation consecutively every two to three years*

WDT team carried out the PRA in the project area to analysis the livestock position in the project area. The few significant features found during the discussion are:-

- Majority of community of Nainwa-III watershed prefers cow (27.11%) ir- respective of Buffalo (10.03%). The reason behind the cow rearing is low demand of fodder as compare to buffalo.*
- Large part of community members have non descriptive breed (desi breed) of cow and buffalo. Gir in cow and Murrah in buffalo is the good quality breed, easily available and most preferred by the communities of project area.*
- The population of goat is the maximum in project area, it cover 50.03% of the total population of animal in project area.*

<i>Parameters</i>	<i>Desi</i>	<i>Gir</i>	<i>Cross Breed</i>
<i>Availability of fodder</i>	4	3	1
<i>Productivity</i>	2	4	5
<i>Immunity power</i>	4	5	1
<i>Fat percentage</i>	2	4	2

Facilities available	4	3	1
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More than 80 % of farmers have desi cow in the project area, followed by Gir cow and few progressive farmers have cross breed cow. The choice in cross breed is HF cross and Jersey cross however now farmers are not preferred high breed animal due to its low fat percentage because dairy pay the value of milk on availability of fat percentage. The average productivity of milk for desi cow is 2 to 4 liter, 5 to 8 liter for Gir and 10 to 14 liter for cross breed.

The productivity of buffalo is between 7 to 10 liter depending on the breed and quality of animal. Probably 20% of the cattle reared have more than 20 % of the murrh breed. In spite of large number of livestock, production is less. Hence to improve productivity of cattle is a big challenge for the PIA.

Community prefer to adopt natural insemination technique for breed improvement rather than artificial insemination however results of previous experiences for breed improvement done by other agencies are not very encouraging. It was mainly due to lack of proper institution in the area.

2.13 Livestock detail Of Project Area								
Name of villages	Cow		Buffalo		Goat	Sheep	Others	Total
	Desi	Cross breed	Desi	Cross breed				
DUGARI	512	12	272	12	867	155	82	1912
LAXMIPURA	121	0	66	6	372	22	18	605
PANDULA	167	0	22	8	282	56	64	599
BHAJNERI	402	8	88	10	573	98	78	1257
DOKUN	182	3	62	6	324	64	32	673
GUDASADAVERTIA	186	0	57	4	367	36	42	692
KALAMAL	142	0	41	6	402	30	12	633
JEEVANPURA	187	0	55	2	332	12	18	606

<i>DEVPURA</i>	122	20	22	25	289	132	24	634
<i>TOTAL</i>	2021	43	685	79	3808	605	370	7611

Poor families especially few families prefer to rear Goat. During discussion, community raised their interest for goat rearing and buck of improve breed. They demand for (4 goat +1 buck) model.

2.14 Productivity of Cattle in project area			
S.No	Livestock	Purpose	Productivity (Year)
1	<i>Cow –Deshi</i>	<i>Milk , Bull</i>	<i>1.5-2 Lt</i>
2	<i>Cow-Cross breed</i>	<i>Milk</i>	<i>8-10 Lt</i>
3	<i>Buffalo- Deshi</i>	<i>Milk</i>	<i>4-6 Lt</i>
4	<i>Buffalo- Cross breed</i>	<i>Milk</i>	<i>10-15 Lt</i>
5	<i>Goat</i>	<i>Milk , Meat</i>	<i>0.5-1 Kg</i>
6	<i>Sheep</i>	<i>Wool</i>	<i>1-1.5 Kg</i>

At present, only one dairy cooperative is running in the project area. Approximately 5500 liter milk is collected in one day of 8-10 villages near by Dugeri. It was informed that approximately 40 % of total milk is sold by farmers to Nainwa. During PRA it was found that in project area vast untapped potential for enhance the livelihoods of project communities through dairy.

The proposed activities for improving the productivity of the animal are:-

- *Natural Breed improvement by distribution of superior bull*
- *Health camps*
- *Demonstration of improved practices*
- *Basic health facilities*
- *Quality forage production*
- *Castration of animal*
- *A.I*

- **2.15 Fodder status**

- *PIA organized a series of discussion with project community on the issue of fodder status because the secondary data was not available at village level. The majority of common land has been encroached by the community and they were least interested to discuss this issue.*

<i>Average rainfall</i>	<i>full fill the demand, no need to import</i>
<i>Good rainfall</i>	<i>surplus fodder</i>
<i>Drought</i>	<i>deficit(30-40%) , purchase from outside</i>

-

Fodder status of project area		
S.No	Particular	Area
1	<i>Existing Cultivable area under Fodder</i>	<i>400 ha</i>
2	<i>Production of Green fodder</i>	<i>30 ton/year</i>
3	<i>Production of Dry fodder</i>	<i>7500 ton/year</i>
4	<i>Area under Pastures</i>	<i>97 Ha</i>
5	<i>Production of fodder</i>	<i>9800 ton</i>

-

- *The existing pasture land for fodder in the project area has been encroached by dominating community and not serves the purpose. Demand of fodder is fulfilled by the farmers from their own field and do not depend on pasture. Majority of family cultivating Jowar crop and also grow two to three variety of green fodder “Rajka*
- *“at their field and use crops residue of maize, sugarcane and paddy husk for the fodder.*

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Green fodder is available only in months of august to October in the pasture land otherwise dry fodder is available on common land. It was revealed in the discussion that fodder status depends on the monsoon. If rains are good then project community have no problem regarding fodder and it is at surplus stage but in drought or in condition of less rains , fodder availability is less and community face the problem. For example, fodder is surplus 40-50 % in project area due to good rains in project area from last two years. Community demands the fodder from M.P, Kota and Bundi. In last ten years community faced three- four time’s problems for fodder availability during less years of rainfall.

- **2.16 Farm Mechanization**

<i>Farm equipment status in project area</i>	
<i>Name of equipments</i>	<i>No</i>
<i>Tractor</i>	<i>59</i>
<i>Sprayers</i>	<i>422</i>
<i>Cultivators</i>	<i>48</i>
<i>Seed drill</i>	<i>39</i>
<i>Seed cum fertilizer drill</i>	<i>40</i>
<i>Thresher</i>	<i>36</i>

- *The agriculture equipment industry is a key sector that contributes to agriculture growth and productivity. Mechanized farming is modern scientific methods of cultivation. It improves productivity and production of farm land and reduces cost of cultivation as also human drudgery by facilitating efficient handling of agriculture operations. The status of project area in farm mechanization is very encouraging.*
- *Table shows the impression that position of farm mechanization is not very encouraging. However they have keen interest and understand the importance of it. Big farmers of project area have their own tractors, seed drill and threshers in the project area. Farmer's especially small, marginal and majority of medium farmers do not have their own farm equipments so they hire the farm equipments whenever they require from the same village or nearby area. Farmers are attracting towards tractor drawn seed and fertilizer drill, thresher cum harvester etc. They spent approximately 10000-15000 on hire the equipments for one ha of land.*
- *It looks that input cost increase due to investment on purchasing farm equipments and it could be reduce if farmers group manage the farm equipment at rotation basis.*
- **2.17 NREGA status** – *NREGA is the biggest government scheme for rural development in the rural development. Project area Gram Panchayat performs significant progress in this scheme. They achieved the target of registration of the needy family for work and issued the job card. The detail of job card is given below in the table.*

Job card detail of project area				
S.No	Name of village	Total no of job cards	Total no of employment days generated	Activity taken
1	DUGARI	312	31200	Gravel road, Talai, Plantation, Protection wall
2	LAXMIPURA	78	7800	
3	PANDULA	44	4400	
4	BHAJNERI	39	3900	
5	DOKUN	1432	143200	

6	GUDASADAVERTIA	156	15600
7	KALAMAL	83	8300
8	JEEVANPURA	184	18400
9	DEVPURA	77	7700
10	TOTAL	69	6900

2.18 Migration

Migration is the key problem of the project area because it is located on the national highway and situated near to Kota. During discussion it was found that unemployment among youth is the major reason for migration. Youth community those have studied six to eight class or more have no work in the project villages or nearby area so they migrate to Bundi and Kota in search of employment. They migrate on daily basis or for a particular task for short duration.

Project families those in specialized in a particular field also migrate to Bundi like mason. They get good wage as compared to available wage in the project area. In the PRA, it was informed that families which are land less or have small land holding and depend on monsoon migrate to nearby area in lean period

Status of Migration in project area		
Name of Village	No of families	No of days
DUGARI	57	5130
LAXMIPURA	8	720
PANDULA	2	180
BHAJNERI	25	2250
DOKUN	5	450

<i>GUDASADAVERTIA</i>	<i>4</i>	<i>360</i>
<i>KALAMAL</i>	<i>6</i>	<i>540</i>
<i>JEEVANPURA</i>	<i>1</i>	<i>90</i>
<i>DEVPURA</i>	<i>4</i>	<i>360</i>
<i>TOTAL</i>	<i>112</i>	<i>10080</i>

The migration can be check by creation of employment opportunities, enhancing farm level economy, increases the income of the people engaged in animal husbandry by dairy, poultry and marketing and value addition. (As discussed earlier) and diversification in livelihoods .

2.19 The existing livelihoods Village are given below

Table (a) Major activities (On Farm)		
<i>Name of activity</i>	<i>No of House holds</i>	<i>Average annual income from the</i>
<i>Cultivators</i>	<i>2809</i>	<i>35000</i>
<i>Dairying</i>	<i>59</i>	<i>30000</i>
<i>Poultry</i>	<i>6</i>	<i>35000</i>
<i>Piggery</i>	<i>0</i>	<i>0</i>
<i>Landless Agri. Labourers</i>	<i>112</i>	<i>22500</i>
Table (b) Major activities (Off Farm)		
<i>Name of activity</i>	<i>Households/individuals</i>	<i>Average annual income from the</i>
<i>Artisans</i>	<i>32</i>	<i>65000</i>
<i>Carpenter</i>	<i>17</i>	<i>48000</i>
<i>Blacksmith</i>	<i>10</i>	<i>45000</i>
<i>Leather Craft</i>	<i>22</i>	<i>40000</i>
<i>Porter</i>	<i>28</i>	<i>40000</i>
<i>Mason</i>	<i>37</i>	<i>75000</i>
<i>Others specify (Cycle Repair ,STD,Craft etc)</i>	<i>42</i>	<i>50000</i>

The efforts for increase in income through off farm activities will be made under livelihood component through assistance to SHG or individuals

Table 2.20 Status of Existing SHG

<i>S.No</i>	<i>Name of SHG</i>	<i>Members</i>	<i>Activity involved</i>	<i>Monthly income</i>	<i>Fund available</i>	<i>Assistance available</i>	<i>Source of assistance</i>	<i>Training received</i>
1	Ghatarani	11	Swing mechin	NO	4500	yes	CDPO	No
2	Amba group	11	Masala making	NO	3600	yes	CDPO	No
3	Lakshmibai	11	Masala making	NO	3900	yes	CDPO	No
4	Virat samouh	11	Carpet making	NO	4500	yes	CDPO	No
5	Jagdamba	11	Carpet making	NO	4900	yes	CDPO	No
6	Pregati Samouh	11	Swing mechin	NO	3900	yes	CDPO	No
7	Saraswati Samouh	11	Bamboo Craft	NO	3600	yes	CDPO	No
8	Gitanjali samouh	11	Carpet making	NO	4500	yes	CDPO	No

The table indicates existence of number of groups in the area also these need to be strengthened through trainings and financial assistance

II. Technical Features

Table .2.21 Ground Water

<i>S.No</i>	<i>Source</i>	<i>No.</i>	<i>Functional depth</i>	<i>Dry</i>	<i>Area irrigated</i>	<i>Water availability(days)</i>
<i>i)</i>	<i>Dug wells</i>	<i>681</i>	<i>35mt.</i>	<i>442</i>	<i>48Ha</i>	<i>90</i>
<i>ii)</i>	<i>Shallow tube wells</i>	<i>201</i>	<i>60mt.</i>	<i>18</i>	<i>136Ha</i>	<i>180</i>
<i>iii)</i>	<i>Pumping sets</i>	<i>516</i>				
<i>iv)</i>	<i>Deep Tube Wells</i>	<i>181</i>	<i>90mt.</i>	<i>0</i>	<i>312Ha</i>	<i>240</i>
	<i>Total</i>	<i>1023</i>			<i>496Ha</i>	

Table . 2.22 Availability of drinking water

The project area is quite fortunate in terms of drinking water. The main sources of drinking water in the project area are community bore well and hand pumps. All villages are connected through one to two community bore wells. Hand pumps are also available in all hamlets for 50-60 families. At present, community has no problem of drinking water due to last two good continuous rains but it informed that they faced of drinking water for three to months in case of less rains because majority of wells got or non functioning due to lower down of water table. Gram

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problem
four
dry

Panchayat head quarter are also connected through water supply pipe lines.

S . N o	Name of the village	Drinkin g water require ment Ltrs/da y	Present availability of drinking water Ltrs/day	No. of drinking water sources available	No. functional	No. requires repairs	No. defunct
	DUGARI	224700	182300	118	96	20	3
	LAXMIPURA	17800	11600	9	7	1	1
	PANDULA	9200	7500	5	4	1	0
	BHAJNERI	118200	92300	67	48	12	7
	DOKUN	9800	7900	12	9	2	1
	GUDASADAVERTIA	7500	6400	13	10	2	1
	KALAMAL	8700	7900	7	5	2	0

	JEEVANPURA	9600	8700	12	9	2	1
	DEVPURA	8800	7500	6	5	1	0
	TOTAL	414300	332100	249	193	43	14

2.23 Water Use efficiency

At now, community is not aware about the importance of drip and sprinkler irrigation system. They have a misconception that micro irrigation especially drip irrigation is not suitable for project area the table given below gives us an idea about the existing micro irrigation system. In current scenario, only 21 farmers have micro irrigation system.

The number of micro irrigation system reduced more in number, if we talk about adoption of this technology in field. In such condition use of micro irrigation technology help to increase the more area under irrigation with same amount of water so there is need to motivate the farmers towards micro irrigation.

Bore well is the main source of irrigation in project area and water use efficiency is very low in project area due to flood irrigation practices, water conveyance through kutchra water distribution channel etc so there is a lot of scope for improves the water productivity with farmer friendly technology.

Name of major crop	Area (Hectare)			
	through water saving devices(Drip/Sprinklers)	through water conserving agronomic practices [#]	Any other (pl. specify)	Total
Wheat	20	4		24
Grham	7	1		8

- *The tables above indicate need for judicious use of available Water.*
- *Encouraging optimum use of water through installation of sprinklers on every operational wells*

Table 2.24 Slope details.

Slope of Watershed		
S.No.	Slope percentage	Area in hectares
1	0 to 3%	4009.22
2	3 to 5%	129.59
3	5 to 10%	32.93
4	> 10%	3.65

As most of the area has slope less than 3% construction of contour bunds can solve the problem of water erosion in agriculture fields and protect washing of top soil and manures/fertilisers.

2.25 Water Budgeting

Good Catchment – Normally a funnel shaped catchment in hilly terrain with less vegetation.

Average Catchment – Catchment in the plains where there is no dense growth of vegetation.

Bad Catchment – Catchment with dense growth of vegetation & highly permeable top soil & sub soil.

Total available runoff(cum) use Stranges table

Rain fall 531.7 mm

Type of Catchment	Area in ha.	Yield of runoff from catchment per ha.(cum.) use Stranges table	Total Runoff in cum
Good	817	1575	1286775
Average	3112	1180	3672160
Bad	676	790	534040
Total	4605		5492975

Runoff trapped in existing structures

S.No.	Name	No.	Storage Capacity (cum)
i)	WHS(earthen)	2	14000
ii)	Talab	2	95000
iii)	Farm Ponds	0	0
iv)	Tanka	0	0

v)	Anicuts	11	16000
	Total	15	125000

Runoff to be Trapped in proposed structures:

S.No.	Name	No.	Storage Capacity (cum)
i)	WHS(earthen)	11	33000
ii)	Earthen Talais	10	25000
iii)	Farm Ponds	9	2100
iv)	MMS	29	25000
v)	Masonry Checkdams	10	30000
	Total		115100

Runoff trapped in existing & proposed structures =125000+115100= 240100cum.

% Runoff trapped = total runoff trapped x100/Total available runoff=4.37%

Height of all the structures proposed is between 1.5metre to 2.0metre. There is no structures whose water impounding height is more than 2 metre.

2.26 Development indicators

S. No.	Development Indicators	State	Project Area
1	Per capita income (Rs.)	31279	24950
2	Poverty ratio	15.28	17.38
3	Literacy (%)	67.06	46.7
4	Sex Ratio	926	923

5	infant mortality rate	60	59.89
6	Maternal mortality ratio	318	322

Source: Annual Health Survey 2010-11

2.27 Abstract of cropped Area(ha)	
Area under Single crop	1138.17
Area under Double crop	2254.15
Area under Multiple crop	0

2.28 Productivity Gap Analysis (The table can also be given in bar chart form)

Source: FAOStatistic2011 and Land record collectorate office Bundi

Name of the crop	Productivity kg/ha				
	India	Highest Average in Rajasthan	District	Project Area	Comparision with Dist.
Wheat	2988	2821	3720	3250	-470
Grham	808	948	1180	1070	-110

<i>Musterd</i>	1177	1155	1450	1200	-250
<i>Maiz</i>	2967	1098	2000	1850	-150
<i>Rice</i>	3530	1905	2090	1850	-240

Table 2.29 Erosion details

Erosion status in project Area				
Cause	Type of erosion	Area affected (ha)	Run off(mm/ year)	Average soil loss (Tonnes/ ha/ year)
<i>Water erosion</i>				
a	<i>Sheet</i>	3462		
b	<i>Rill</i>	1015		
c	<i>Gully</i>	71		
<i>Sub-Total</i>		4548		
<i>Wind erosion</i>		0		
Total for project		4548	160	25/T/H/Y

The need is: To check land degradation

- *To reduce excessive biotic pressure by containing the number and increase of livestock*
- *To check cultivation on sloping lands without adequate precautions of soil and water conservation measures*
- *To discourage cultivation along susceptible nallah beds*
- *To check Faulty agriculture techniques*
- *To check Uncontrolled grazing and developed cattle tracks*
- *To check Deforestation of steep slopes*
- **(For delineated watershed projects)** *To check erosive velocity of runoff, store Runoff, to arrest silt carried by runoff and to recharge Ground Water structures life Earthen check dams, gully plugs, Bank Stabilisation, Loose stone check Dams, Gabions, Earthen embankment (Nadi) and Anicuts would be taken up.*

Table 2.20 Erosion details

Erosion status in project Area					
Cause	Type of erosion	Area affected (ha)	Run off(mm/ year)	Average soil loss (Tonnes/ ha/ year)	
<i>Water erosion</i>					
	a	Sheet			
	b	Rill			
	c	Gully			
<i>Sub-Total</i>					
<i>Wind erosion</i>					
Total for project					

The need is:

- *To check land degradation*
 - *To reduce excessive biotic pressure by containing the number and increase of livestock*
 - *To check cultivation on sloping lands without adequate precautions of soil and water conservation measures*
 - *To discourage cultivation along susceptible nallah beds*
 - *To check Faulty agriculture techniques*
 - *To check Uncontrolled grazing and developed cattle tracks*
 - *To check Deforestation of steep slopes*
 - ***(For delineated watershed projects)*** *To check erosive velocity of runoff, store Runoff, to arrest silt carried by runoff and to recharge Ground Water structures like Earthen check dams, gully plugs, Bank Stabilisation, Loose stone check Dams, Gabions, Earthen embankment (Nadi) and Anicuts would be taken up.*
- For Flat lands & cluster projects appropriate intervention shall be mentioned**

Chapter-3

Proposed Development Plan

As per envisaged in the common guidelines, the Nainwa-III watershed project is classified into the three project phases. In view of the expanded scope and expectations under the watershed development program, the project duration could be in the range of four to seven years depending upon the activities of the watershed project.

3.1 Capacity Building

PIA would provide key focus on the capacity building of various stakeholders in whole phase of the watershed project to build their conceptual, managerial, analytical, technical and operational capabilities. PIA believes that Capacity building is the key mechanism to introduce participatory approaches for planning, implementation and management of watershed activities. A series of training program would be organized for various stakeholders according to changing perspective. Special focus would be provided on follow up of each training program to measure the effectiveness and change in degree of organizational and attitudinal change.

CAPACITY BUILDING

	STAKEHOLDERS	Total No	Participants covered	No of Days	No of Trainings	Rate	Amount
1	PRIs						
	District level		30	1	1	500	15000
	Block Level		30	1	1	300	9000
	GP level		45	1	1	300	13500
2	WDT		4	2	3	500	12000
			4	3	1	500	6000
			4	1	6	300	7200

3	SHGs		250	1	6	150	225000
			250	2	3	250	375000
			225	3	2	300	405000
4	UG		200	1	6	150	180000
5	Farmers		100	1	10	150	150000
6	WC members		50	1	5	150	37500
			50	2	2	300	60000
			50	3	1	300	45000
7	Exposure						
	Combined common exposure						370000
	SHGs						40000
	UG						40000
	WC						40000
8	Slogan writing, Display writing &IEC						699000
					48		2729200

Grama Sabhas were conducted for approval of EPA (Village), for selecting the watershed committee and approval of DPR.

S.no	Name of the Gram Panchayat	Date on which Grama Sabha approved EPA
1	<i>Dugeri</i>	<i>10.01.2013</i>
2	<i>Bhajneri</i>	<i>8.01.13</i>
3	<i>Dodi</i>	<i>7.01.2013</i>
4	<i>Dokune</i>	<i>5.01.2013</i>

5	Gudasadvertia	17.08.2012
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1	4	5	6	7	8	9	10	11
S. No	Names of village	Amount earmarked for EPA	Entry Point Activities planned	Estimated cost (Lac)	Expenditure incurred	Balance	Expected outcome	Actual outcome
1	DUGARI	7.02	GLR, Handpump, Solarlight	7.02		7.02		
2	LAXMIPURA	1.29	GLR, , Solarlight	1.29		1.29		
3	PANDULA	1.47	GLR, Handpump	1.47		1.47		
4	BHAJNERI	4.72	GLR, Handpump, Solarlight	4.72		4.72		
5	DOKUN	2.55	GLR, Handpump, Solarlight	2.55		2.55		
6	GUDASADAVERTIA	1.03	GLR, Chabutra	1.03		1.03		
7	KALAMAL	1.23	GLR, , Solarlight	1.23		1.23		
8	JEEVANPURA	0.99	GLR, , Solarlight	0.99		0.99		
9	DEVPURA	1.53	GLR, Handpump,	1.53		1.53		
10	TOTAL	21.83		21.83		21.83		

The PRA exercise was carried out in all the villages on the dates shown below:

S.no	Name of the village/Habitation	Date on which PRA conducted
1	DUGARI	10/1/13
2	LAXMIPURA	7/1/13
3	PANDULA	7/1/13
4	BHAJNERI	8/1/13
5	DOKUN	5/1/13

6	GUDASADAVERTIA	17/8/12
7	KALAMAL	17/8/12
8	JEEVANPURA	17/8/12
9	DEVPURA	17/8/12

Transact walk were carried out involving the community for Social mapping, Resource mapping. Detailed discussions and deliberations with all the primary stakeholders were carried out.

Socio-economic survey was carried out during 17.8.12 to 10.1.13 period covering all the households and primary data on demography, Land holdings, Employment status, Community activities etc. was collected as mentioned in chapter 2.

3.2 PANEL OF RESOURCE INSTITUTIONS

S.NO	Name of Institution	Address	Area of Expertise
1	<i>Krishi Vighyan Kendra, Bundi</i>	<i>Bundi</i>	<i>Agriculture Technology and Management</i>
2	<i>Deputy Director, Veterinary department</i>	<i>Bundi</i>	<i>Livestock Management , Dairy</i>
3	<i>ARAVALI</i>	<i>Kota</i>	<i>Livelihoods</i>
4	<i>Agriculture Department</i>	<i>Bundi</i>	<i>Agriculture Technology and Management</i>
5	<i>State Institute of Agriculture</i>	<i>Jaipur</i>	<i>Agriculture Technology and</i>

	<i>Management</i>		<i>Management</i>
6	<i>Irrigation Management Training Institute</i>	<i>Kota</i>	<i>Water productivity</i>
7	<i>CSWTRI- Sub center</i>	<i>Kota</i>	<i>Soil and Water conservation</i>
8	<i>BAIF</i>	<i>Bundi</i>	<i>Livestock Management</i>
9	<i>CTAE</i>	<i>Udaipur</i>	<i>Soil and Water conservation</i>
10	<i>VISHVAS Sansthan</i>	<i>Bundi</i>	<i>Skill development</i>
11	<i>Catalyst Development Agency</i>	<i>Jaipur</i>	<i>Micro Planning, Livelihoods</i>

Table-, Education & Communication (IEC) activities in the project area (1% of total Project cost.)

<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<i>S . No.</i>	<i>Activity</i>	<i>Executin g agency</i>	<i>Allocatio n out of 1% of total Project cost</i>	<i>Allocation in lacs</i>

7	सफलता की कहानीयों की वीडियोग्राफी/फोटोग्राफी/लघुफिल्म एवं कृषको से साक्षरातकार / वार्ता ।		0-15			0.26	0.42	0.16 32	0.82
8	निबन्ध व वाद-विवाद प्रतियोगिता								
9	रेडियों/दूरदर्शन पर वार्ता व विज्ञापन								
10	सांस्कृतिक त्यौहार / मेले आदि के अवसर पर प्रदर्षनी		0-10						
11	नुक्कड़ नाटक			0.54					0.54
12	कटपुतली प्रदर्षन								
13	रात्रि गोष्ठी		0-20				0.45	0.64 46	1.09
14	भू संरक्षण सप्ताह								
15	चेतना रैली								
16	जलग्रहण विकास का संदेश देने वाले सांस्कृतिक कार्यक्रम								
17	कृषक दिवस का आयोजन एवं क्षेत्र भ्रमण दिवस का								

	आयोजन इत्यादि								
18	कुल	1-00							

PDCOR was assigned the work of preparing various thematic layers using Cartosat-1 and LISS-3 imageries for Creation, development and management of geo-spatial database depicting present conditions of land (terrain), water and vegetation with respect to watershed under different ownerships at village level

Various thematic layers provided by *PDCOR* are :

- Delineation of Macro/Micro watershed boundaries.
- Digitised Khasara maps of the villages falling in project area.
- Network of Drainage lines, existing water bodies, falling in the project area.
- Base maps (transport network, village/boundaries, and settlements).
- Land Use / Land cover map.
- Contours at 1 meter interval, slope map (***in delineated watershed projects***)

Based on GIS thematic layers, Field visits , PRA and analysis of benchmark data (as discussed in chapter 2) final Treatment plan on revenue map for implementation has been framed. Thus each intervention identified has been marked on revenue map (map enclosed in DPR as annexure--7----).The GIS based intervention map.

Livelihood Action Plan (LAP): (9%)

LAP has been prepared by the PIA in consultation with WDT, WC & the members of SHG, SC/ST, women, landless/ assetless households. Details of funds available & their utilisation is as under :

Total project cost Rs.-545.76 Lacs.

Funds available under livelihood component = Rs 49.11 Lacs.

S. No.	Item	Numbers	Revolving fund/Seed money	% of LAP
1	SHG			
a	Existing	8	2.0 lac	4.07
b	New	110	27.46	55.92
	Sub Total	118	29.46	60.00
2	Enterprising individuals	98	4.91	10.0
3	Enterprising SHG/Federations of SHG	8	14.74	30.0
	Total	224	49.11	100

Proposed Activities (On Farm)*		
Name of activity*	No of SHGs	Revolving fund
Fisheries		
Dairying	10	2.50
Poultry	4	1.00
Piggery		
Goatery	20	5.00
Bee keeping		
Sericulture		
Nursery	5	1.25
Maize dehusker	2	0.50
Dal mill		
Oil mill		
Others (specify)		
Total	41	10.25

Proposed Major activities (Off Farm)**		
Name of activity*	No of SHGs	Revolving fund
Artisans	5	1.25
Carpenter	5	1.25
Gold smith		
Leather Craft	5	1.25
Porter	6	1.50
Mason	10	2.50
Eco tourism		
Agro processing		
Blacksmith	6	1.50
Candle making		
Dona Pattal	5	1.25
Sewing / Knitting	18	4.46
Tea Stall	5	1.25
General Store	5	1.25
Mobile repair	2	0.50
Mechanic / Misc. shop	5	1.25
Others (specify)		
Total	77	19.21

List of persons & Proposed Activities for enterprising individuals (10%)

S. No.	Activity Proposed	Name of Person	Category SC /ST /Others	Project fund Revolving	Contribution
1	Cycle Repair	15		0.75	
2	Pump Mechanic	5		0.25	
3	Carpenter	14		0.70	
4	Black Smith	10		0.50	
5	Mason	10		0.50	
6	Tea Stall	15		0.75	
7	Mobile Repair	10		0.50	
8	Lether Craft	15		0.75	
9	Pottry	4		0.21	
		98		4.91	0.73

Proposed Activities for Enterprising SHG/Federations of SHG

S. No.	Name of SHG/ SHG federation	Activity	Project Cost in lacs	Grant in aid 50% of project cost or 2 lacs whichever is less	Bank loan
1		Pattal-Dona	5.00	2.00	3.00
2		Swinging	4.00	2.00	2.00
3		Swinging	4.00	2.00	2.00
4		Carpet Making	4.00	2.00	2.00
5		Carpet Making	4.00	2.00	2.00
6		Carpet Making	4.00	2.00	2.00
7		Pattal-Dona	5.00	2.00	3.00
8		Dairy	4.00	0.74	3.26

CONSOLIDATED WATERSHED TREATMENT PLAN													
Gram Panchyat Dugari,Dodi,Dokune,Bhajneri ,Gudasadvertia						Total amount =545.76 Lakhs							
Villages- Dugari,Laxmipura,Pandula,Dokune,Bhajneri,Gudasadvertia,Kalamal,Jeevanpura,Devpura						Dugeri		Bhajneri		Gudasadvertia		Dodi	
S. No	Name of Activity	Unit	Physical Target	Unit Cost	Financial Target	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
A-SOIL AND WATER CONSERVATION WORKS													
A- Works- Arable Land Development													
1	Field Bund	HA											
	Type-1		534.3	0.15	80.15	176.6	26.49	98.7	14.81	200	30.00	33.75	5.0625
	Type-II		108	0.20	21.60	40	8.00	10	2.00	30	6.00	16	3.2
	Type-III		28	0.22	6.16	8	1.76	10	2.20	10	2.20	0	0
2	Farm Pond	Nos	9	0.35	3.15	6	2.10	1	0.35	1	0.35	1	0.35
3	Talai (Earthen Dam)	Nos	11	0.55	6.05	4	2.20	3	1.65	1	0.55	2	1.1
4	Waste Weir	No	0	0.12	0.00	0	0.00	0	0.00	0	0.00	0	0
5	Waste Weir		0	0.12	0.00	0	0.00	0	0.00	0	0.00	0	0
	Sub total -(Arable)				117.11		40.55		21.01		39.10		9.71
B-Works- Non Arable Land Development													
1	P a s t u r e Development	Ha	20	1.74	34.80	15	26.10	5	8.70	0	0.00	0	0
2	Talai (Earthen Dam)	No										0	0
	Type -I		5	0.88	4.40	1	0.88	1	0.88	1	0.88	1	0.88
	Type-II		4	1.98	7.92	1	1.98	1	1.98	0	0.00	1	1.98
	Type-III		1	2.38	2.38	0	0.00	0	0.00	1	2.38	0	0
	Sub total (Non arable)				49.50		28.96		11.56		3.26		2.86
C-Works- Drainage Line Treatment													
1	Masonry Check Dam	Nos											
1.1	Type-I		4	7.81	31.24	1	7.81	0	0.00	1	7.81	1	7.81
1.2	Type-II		5	11.56	57.80	1	11.56	1	11.56	1	11.56	1	11.56
1.3	Type-III		1	15.11	15.11	0	0.00	1	15.11	0	0.00	0	0
2	Minor Masnory Structure(MMS)	Nos											
	Type-I		12	0.55	6.60	4	2.20	3	1.65	1	0.55	2	1.1
	Type-II		13	1.08	14.04	6	6.48	2	2.16	1	1.08	2	2.16
	Type-III		4	2.55	10.20	0	0.00	1	2.55	1	2.55	1	2.55
3	LSCD	Nos	31	0.13	4.03	6	0.78	4	0.52	7	0.91	7	0.91
	Sub total (DLT)				139.02		28.83		33.55		24.46	0	26.09

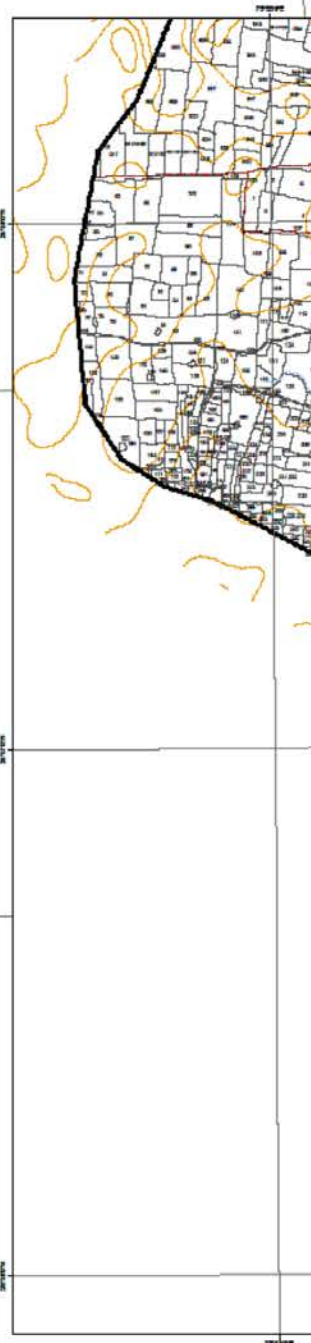
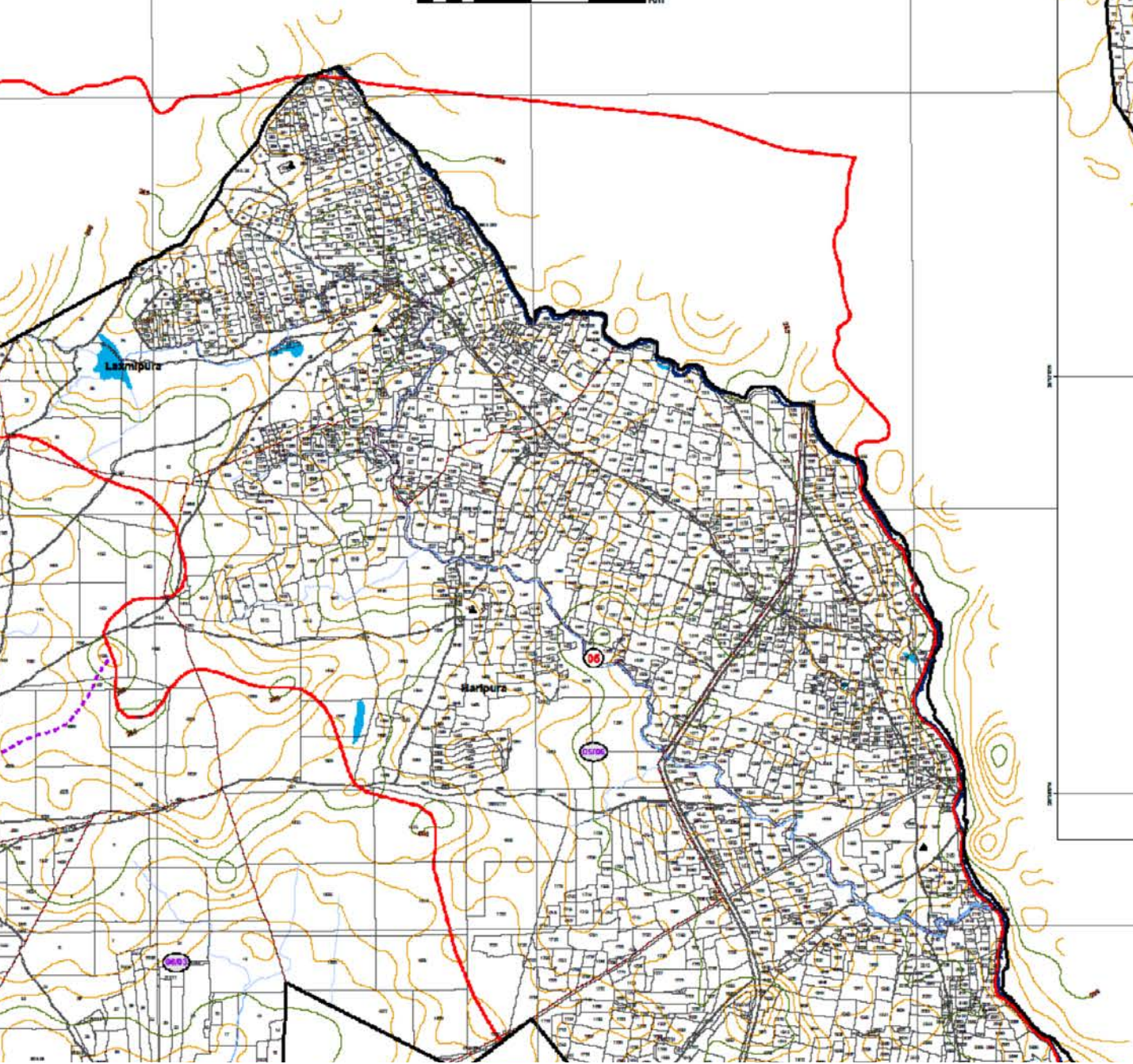
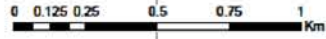
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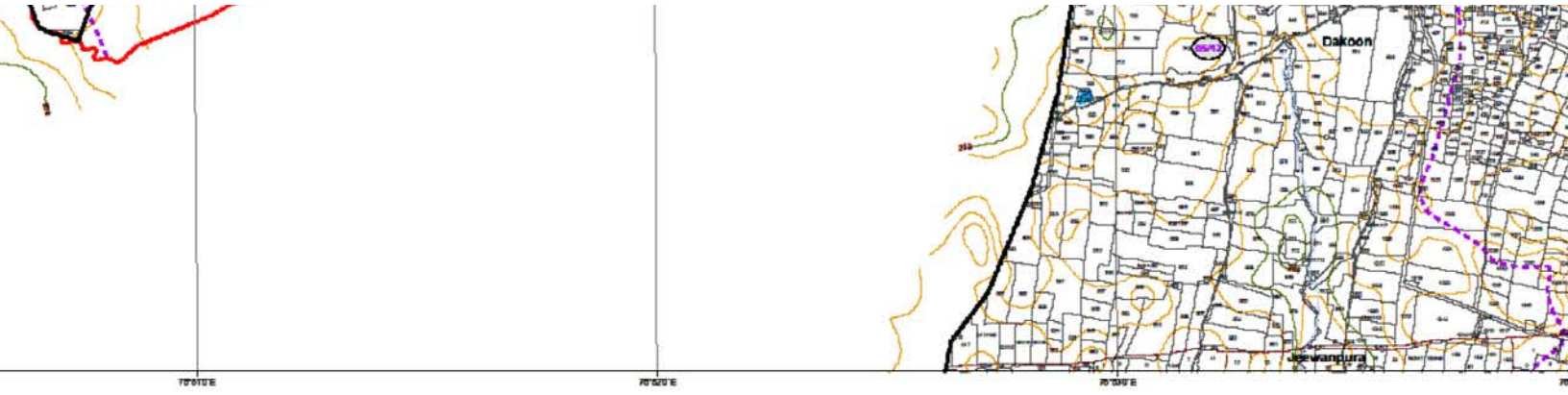
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CONTOUR MAP





MAPS