GOVERNMENT OF RAJASTHAN

RURAL DEVELOPMENT & PANCHAYATI RAJ DEPARTMENT
Watershed Development & Soil Conservation Department
Rajasthan, Jaipur

DETAILED PROJECT REPORT

INTEGRATED WATERSHED MANAGEMENT PROGRAMME

Gopalsar

JODHPUR (IWMP) - 23/2010-11,
BLOCK- BALESAR

Total Effective Area	**:**	**4000 Ha**
Total Sanctioned Cost	**:**	**Rs. 600.00 lac**

PROJECT IMPLEMENTING AGENCY
ASSISTANT ENGINEER
(W.D. & S.C.)
PANCHAYAT SAMITI - BALESAR

CHAPTER – I
INTRODUCTION

Location

Jodhpur (IWMP)-23/10-11 Gopalsar Project is located in Balesar Block, of Jodhpur district. The project area is between the latitudes 72° 33' to 72° 39' East & longitudes 26° 27' to 26° 30' North. It is at a distance of 25 km from its Block head quarters and 85 Km from the District head quarters of Jodhpur. There are 6 nos. of habitations (Revenue Village) in the Project area and other details are given below.

General features of watershed

S. No.	Name of Project(as per GOI)	Jodhpur (IWMP) 23/10-11
a)	Name of Catchment	Gopalsar
b)	Name of watershed area(local name)	Gopalsar
c)	Project Area	4000 ha
d)	Net treatable Area	4000 ha
e)	Cost of Project	600.00 lac
f)	Cost/hectare	0.15 lac
g)	Year of Sanction	2010-11
h)	Watershed Code	16(1,2)
i)	No. of Gram Panchayats in project area	1
j)	No. of villages in project area	6
k)	Type of Project	Desertic
l)	Elevation (metres)	255 mtr wrt MSL
m)	Major streams	Local Nallah
n)	Slope range (%)	0-10%

Macro/micro	Name of Gram Panchayat	Name of Villages Covered	Census code of villages
	1. Gopalsar	1. Gopalsar	0815000501982400
		2. Ramdev Nagar	-
		3. Shahid Megh Singh Nagar	-
		4. Gangasar	-

		5. Jinjinyala	0815000501982600
		6. Kanasar	0815000501983700

The watershed falls in Agro climatic Zone I A, Arid western plain. The soil texture is Sandy to Sandy Loam. The average rainfall is 270 mm. The temperatures in the area are in the range between 45º C during summer and 15º C during winter. The major crops in the area are Bajara, Guar, Moong, Moth, Til etc. Almost 59.9% land is under cultivation 14.2% land fallow, 1.17% land is wasteland. There is some area under irrigation in project area, this area is double cropped due to tubewells & rain water harvesting (in-situ moisture conservation) by earthen structures like KHADEEN, anicuts and the area which is under field/contour Bunding executed in different programmes implemented under watershed development & soil conservation programmes in preceding years.

Out of 892 Total Households 205 households are BPL (23% of Total households) 16 are landless households (1.8% of Total households) and 539 household are small and marginal farmers (60.4% of Total household). Average land holding in the area is 2.25 ha. 95% area of cultivable land is single cropped and 05% is double cropped. The average annual rainfall (5 years) in the area is 263.4 mm. The major festivals in the villages of Project area are Deepawali, Holi, Akhsay-Tritiya, Rakhsabandhan, Dashehra, Gangour etc. At present villages of Project area having 4968 population with Communities like Rajput, Mali, Meghwal, Bheel, Kumhar, Darji and Brahmin.

Climatic and Hydrological information

1. Average Annual Rainfall (mm)

S.No.	Year	Average Annual Rainfall(mm)
1	2010	603
2	2009	73
3	2008	357
4	2007	188
5	2006	39
6	2005	197
7	2004	267
8	2003	511
9	2002	67
10	2001	332

2. Average Monthly rainfall (last ten years)

S.No.	Month	Rainfall(mm)
1	June	31.05
2	July	100.25
3	August	122.70
4	September	8.30

3. Maximum rainfall intensity (mm)

S.No.	Duration	Rainfall intensity(mm)
1	15 minute duration	42 mm
2	30 minute duration	60 mm
3	60 minute duration	70 mm

4. Temperature (Degree C)

S.No.	Season	Max	Min
1	Summer Season	45° C	32° C
2	Winter Season	28° C	4° C
3	Rainy Season	38° C	18° C

5. Potential Evaporation Transpiration (PET) (mm/day)

S.No.	Season	PET
1	Summer	3200 mm
2	Winter	1600 mm
3	Rainy	1800 mm

6. Runoff

1	Peak Rate (cum/hr)	95.25 Cum/per hour		
2	Total run off volume of rainy season (ha.m.)	50.76 ha-m		
3	Time of return of maximum flood	5 years	10 years	In-Year
4	Periodicity of Drought in village area	3	7	

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	DDP	Rural Dev.	Watershed Dev.	Rural population	Central share 0.75 state share 0.25
2	MAHANREGA	Rural Dev.	Rain Water Harvesting, Road Connectivity etc.	Rural population	Central Sponsored

Details of infrastructure in the project areas

Parameters		Status			
1	No. of villages connected to the main road by an all-weather road	6			
2	No. of villages provided with electricity	6			
3	No. of households without access to drinking water	0			
4	No. of educational institutions :	P	S	HS	VI
	Primary(P)/ Secondary(S)/ Higher Secondary(HS)/ vocational institution(VI)	6	1	0	0
5	No. of villages with access to Primary Health Centre	4			
6	No. of villages with access to Veterinary Dispensary	0			
7	No. of villages with access to Post Office	0			
8	No. of villages with access to Banks	0			
9	No. of villages with access to Markets/ mandis	0			
10	No. of villages with access to Agro-industries	0			
	Total quantity of surplus milk	100 Ltr.			
11	No. of milk collection centres	U	S	PA	O
	(e.g. Union(U)/ Society(S)/ Private agency(PA)/ others (O))	0	0	0	0
12	No. of villages with access to Anganwadi Centre	6			
13	Any other facilities with no. of villages (please specify)	0			
14	Nearest KVK	CAZRI JODHPUR			
15	Co-operative society	0			
16	NGOs	0			
17	Credit institutions	0			
	(i) Bank	0			
	(ii)Co-operative Society	0			
18	Agro Service Centre's	0			

Institutional arrangements (SLNA, DWDU, PIA, WDT, WC, Secretary)

DWDU(W.C.D.C.) Details

S. No	Particulars	Details of DWDU
1	PM ,DWDU(W.C.D.C.)	Project Manager, IWMP, ZP, JODHPUR
2	Address with contact no., website	Near RTO, Office, Khad factory, BJS, Jodhour
3	Telephone	0291-2544171
4	Fax	0291-2544171
5	E-mail	pmdwdujodhpur@gmail.com

PIA particulars

S. No	Particulars	Details of PIA
1	Name of PIA	A.En., W,D.& S.C. Panchayat Samiti Balesar
2	Designation	Assistant Engineer
3	Address with contact no., website	Panchayat Samiti Balesar, Jodhpur- iwmp.balesar@gmail.com
4	Telephone	0291-2544171
5	E-mail	iwmp.balesar@gmail.com

WDT Particulars:

S. No	Name of WDT member	M/ F	Age	Qualification	Ex perience in water shed (Yrs)	Description of professional training	Role/ Function
1	Sh. Ramniwas Choudhary	M	23	B.E.(E.E)	-	-	Engineer
2	Sh. Kalu Ram	M	32	B.Sc. Agriculture	3 Yrs.	Agri. Graduate	Agril. Sciencetist
3	Sh. Mahipal Singh	M	25	Diploma (2Yr. Animal Hus.)	-	Animal Husbandry	Live stock Expert
4	Sh. Gunwanti	F	25	B.A. (Sociology)	3 Yrs.	Sociology	Social Scientist

Details of Watershed Committees (WC)

S. No.	Name of WC's	Date of G. S. for WC	Designation	Name	M/ F	SC/ ST/ OBC/ General	Landless / MF/SF/ BF	Name of UG/SHG	Educational Qualification
1	Gopalsar	22.02.11	President	Sh. Champa Ram / Sh. Sumera Ram	M	O.B.C.	BF	U.G.	8th
			Secretary	Sh. Lal Singh / Sh. Khinv Singh	M	Gen.	BF	Secretary	10th
			Member	Sh. Koja Ram / Sh. Binja Ram	M	ST	MF	U.G.	Lit.
			Member	Sh. Sagat Singh / Sh. Panne Singh	M	Gen.	SF	U.G.	5th
			Member	Sh. Vikram Singh / Sh. Jabbar Singh	M	Gen.	BF	U.G.	8th
			Member	Sh. Sher Singh / Sh. Vijay Singh	M	Gen.	SF	U.G.	Lit.
			Member	Smt. Sua Kanwar / Sh. Ranidan	F	Gen.	BF	S.H.G.	Lit.
			Member	Sh. Madho Ram / Sh. Sanwala Ram	M	SC	SF	U.G.	Lit.
			Member	Sh. Gaja Ram / Sh. Mangala Ram	M	SC	SF	U.G.	5th
			Member	Sh. Pep singh / Sh. Vagat Singh	M	Gen.	BF	U.G.	5th
			Member	Smt. Hawa Devi / Sh. Longa Ram	F	SC	SF	S.H.G.	Lit.
			Member	Sh. Bhanwar Puri / Sh. Sohan Puri	M	O.B.C.	BF	U.G.	8th
			Member	Smt. Varju Devi / Sh. Rewat Ram	F	O.B.C.	BF	S.H.G.	Lit.
			Member	Sh. Bhura Ram / Sh. Bhera Ram	M	O.B.C.	SF	U.G.	5th
			Member	Sh. Bhagirath Ram / Sh. Beedda Ram	M	Gen.	BF	U.G.	5th
			Member	Smt. Sire Kanwar / Sh. Bhanwar Singh	F	Gen.	BF	S.H.G.	Lit.
			Member	Sh. Karna Ram / Sh. Jawata RAm	M	ST	MF	U.G.	8th
			Member	Sh. Daulat Singh / Sh. Maan Singh	M	Gen.	BF	U.G.	8th

Details of Various User Groups Constituted for Development of Activities

Tanka User Group

S.No.	Name/Fathers Name	Village	Position
1	Sh. Sagat Singh/ Panne Singh	Ramdev Nagar	Member
2	Sh. Bhanwar Singh / Vijay Singh	Ramdev Nagar	Member
3	Sh. Gayad Singh / Bagat Singh	Ramdev Nagar	Member
4	Sh. Bhojraj Singh / Panne Singh	Ramdev Nagar	Member
5	Sh. Khushal Singh / Binjraj Singh	Ramdev Nagar	Member
6	Sh. Devi Singh / Hem Singh	Ramdev Nagar	Member
7	Sh. Rajender / Udai Singh	Ramdev Nagar	Member
8	Smt. Ramu Kanwar / Kumbh Singh	Ramdev Nagar	Member
9	Sh. Aman Singh / Koju Singh	Ramdev Nagar	Member
10	Sh. Bhoj Raj Singh / Rewant Singh	Ramdev Nagar	Member
11	Sh. Vijay Singh / Khinv Singh	Ramdev Nagar	Member
12	Sh. Malam Singh / Nathu Singh	Ramdev Nagar	Member
13	Sh. Bhom Singh / Sang Singh	Ramdev Nagar	Member
14	Sh. Sultan Singh / Dhakal Singh	Ramdev Nagar	Member
15	Sh. Hukam Singh / Madho Singh	Ramdev Nagar	Member
16	Sh. Malam Singh / Khinv Singh	Ramdev Nagar	Member
17	Sh. Bhom Singh / Gordhan Singh	Ramdev Nagar	Member
18	Sh. Ram Singh / Prem Singh	Ramdev Nagar	Member
19	Sh. Devi Singh / Shakti Singh	Ramdev Nagar	Member
20	Sh. Lakh Singh / Bhabhut Singh	Ramdev Nagar	Member
21	Sh. Madan Singh / Ganga Singh	Ramdev Nagar	Member
22	Sh. Idan Singh / Mangal Singh	Ramdev Nagar	Member

Contour /Earthen Bund User Group

S.No.	Name/Fathers Name	Village	Position
1	Sh. Amb Singh / Jivraj Singh	Ramdev Nagar	Member
2	Sh. Udai Singh / Bulidan Singh	Ramdev Nagar	Member
3	Sh. Jabbar Singh / Ganga Singh	Ramdev Nagar	Member
4	Sh. Kumbh Singh / Gokal Singh	Ramdev Nagar	Member
5	Sh. Jabbar Singh / Panne Singh	Ramdev Nagar	Member
6	Sh. Arjun Singh / Koju Singh	Ramdev Nagar	Member
7	Sh. Fateh Singh / Panne Singh	Ramdev Nagar	Member

Tanka User Group

S.No.	Name/Fathers Name	Village	Position
1	Sh. Lakh Singh / Balwant Singh	Shahid Megh Singh Ngr	Member
2	Sh. Satu Ram / Jugat Ram	Shahid Megh Singh Ngr	Member
3	Sh. Madhu Ram / Lakha Ram	Shahid Megh Singh Ngr	Member
4	Sh. Taga Ram / Madhu Ram	Shahid Megh Singh Ngr	Member
5	Sh. Mohan Ram / Idan Ram	Shahid Megh Singh Ngr	Member
6	Sh. Kumbh Giri / Tulas Giri	Shahid Megh Singh Ngr	Member
7	Sh. Chandan Singh / Udai Singh	Shahid Megh Singh Ngr	Member
8	Sh. Sumer Singh / Ranjit Singh	Shahid Megh Singh Ngr	Member
9	Sh. Narpat Singh / Ganga Singh	Shahid Megh Singh Ngr	Member
10	Sh. Uttam Singh / Kalyan Singh	Shahid Megh Singh Ngr	Member

Anicut User Group

S.No.	Name/Fathers Name	Village	Position
1	Sh. Bhanwar Singh / Mag Singh	Gopalsar	Member
2	Sh. Hari Singh / Sohan Singh	Gopalsar	Member
3	Sh. Ugam Singh / Mug Singh	Gopalsar	Member
4	Sh. Ummed Singh / Lakh Singh	Gopalsar	Member
5	Sh. Jaswant Singh / Jabbar Singh	Gopalsar	Member
6	Sh. Mangu Singh / Lakh Singh	Gopalsar	Member
7	Sh. Khet Singh / Biram Singh	Gopalsar	Member
8	Sh. Bhoj Raj Singh / Nathu Singh	Gopalsar	Member
9	Sh. Lal Singh / Ranidan Singh	Gopalsar	Member
10	Sh. Ganga Singh / Bhur Singh	Gopalsar	Member

Anicut User Group

S.No.	Name/Fathers Name	Village	Position
1	Sh. Gaja Ram / Mangla Ram	Gopalsar	Member
2	Sh. Pokar Ram / Hira Ram	Gopalsar	Member
3	Smt. Gajju Devi / Madhu Ram	Gopalsar	Member
4	Sh. Sanga Ram / Kheta Ram	Gopalsar	Member
5	Sh. Satta Ram / Kheta Ram	Gopalsar	Member
6	Sh. Narayan Ram / Achla Ram	Gopalsar	Member
7	Sh. Nathu Nath / Hameer Nath	Gopalsar	Member
8	Sh. Roop Singh / Ram Singh	Gopalsar	Member
9	Sh. Kalu Singh / Bhur Singh	Gopalsar	Member
10	Sh. Sang Singh / Devi Singh	Gopalsar	Member

Animal Husbandry User Group

S.No.	Name/Fathers Name	Village	Position
1	Sh. Ranidan Singh / Hameer Singh	Kanasar	Member
2	Sh. Bhom Singh / Jog Singh	Kanasar	Member
3	Sh. Dhakal Ram / Hameera Ram	Kanasar	Member
4	Sh. Purkha Ram / Bhala Ram	Kanasar	Member
5	Smt. Mirga Devi / Himmata Ram	Kanasar	Member
6	Sh. Kumbha Ram / Sanwala Ram	Kanasar	Member
7	Sh. Urja Ram / Jagrupa Ram	Kanasar	Member
8	Sh. Banna Ram / Mohmata Ram	Kanasar	Member
9	Sh. Bharu Ram / Budha Ram	Kanasar	Member
10	Sh. Dhanna Ram / Navla Ram	Kanasar	Member

Earthen Bund User Group

S.No.	Name/Fathers Name	Village	Position
1	Sh. Anand Singh / Hameer Singh	Jinjinyala	Member
2	Sh. Inder Singh / Kishan Singh	Jinjinyala	Member
3	Sh. Vikram Singh / Kishan Singh	Jinjinyala	Member
4	Sh. Chatar Singh / Hammeer Singh	Jinjinyala	Member
5	Sh. Rana Ram / Mangla Ram	Jinjinyala	Member
6	Sh. Jasu Ram / Hasta Ram	Jinjinyala	Member
7	Sh. Bhera Ram / Joga Ram	Jinjinyala	Member
8	Sh. Padma Ram / Luna Ram	Jinjinyala	Member
9	Sh. Pep Singh / Bagat Singh	Jinjinyala	Member
10	Sh. Sawai Singh / Devi Singh	Jinjinyala	Member

DLT User Group

S.No.	Name/Fathers Name	Village	Position
1	Sh. Padma Ram / Khinya Ram	Gangasar	Member
2	Sh. Jiya Ram / Basta Ram	Gangasar	Member
3	Sh. Budha Ram / Padma Ram	Gangasar	Member
4	Sh. Jasa Ram / Moda Ram	Gangasar	Member
5	Sh. Kalyan Singh / Sunam Singh	Gangasar	Member
6	Smt. Kiku Kanwar / Koj Raj Singh	Gangasar	Member
7	Sh. Bhagirath / Biram Ram	Gangasar	Member
8	Sh. Satya Narayan / Kesa Ram	Gangasar	Member
9	Sh. Padma Ram / Basta Ram	Gangasar	Member
10	Sh. Padam Singh / Nag Singh	Gangasar	Member

Watershed Committee wise Details of Various Self Help Groups

Shahid Achal Singh Bhomiaji SHG

S.No.	Name/Fathers Name	Village	Position
1	Smt. Kamla Kanwar / Kum Singh	Jinjinyala	President
2	Smt. Gulab Kanwar / Jog Singh	Jinjinyala	Secretary
3	Smt. Ummed Kanwar / Madho Singh	Jinjinyala	Treasuer
4	Smt. Tulach Kanwar / Lakh Singh	Jinjinyala	Member
5	Smt. Mohan Kanwar / Pep Singh	Jinjinyala	Member
6	Smt. Ganesh Kanwar / Padam Singh	Jinjinyala	Member
7	Smt. Meera Kanwar / Sang Singh	Jinjinyala	Member
8	Smt. Raju Kanwar / Chain Singh	Jinjinyala	Member
9	Smt. Saroj Kanwar / Khinv Singh	Jinjinyala	Member
10	Smt. Sua Kanwar / Manohar Singh	Jinjinyala	Member

Baba Ramdev SHG

S.No.	Name/Fathers Name	Village	Position
1	Smt. Chandro Devi / Jiya Ram	Jinjinyala	President
2	Smt. Khamma Devi / Shiva Ram	Jinjinyala	Secretary
3	Smt. Khamma Devi / Ghevar Ram	Jinjinyala	Treasuer
4	Smt. Rukmani Devi / Kailash	Jinjinyala	Member
5	Smt. Hupli Devi / Urja Ram	Jinjinyala	Member
6	Smt. Hawa Devi / Raju Ram	Jinjinyala	Member
7	Smt. Chaku Devi / Shambhu Ram	Jinjinyala	Member
8	Smt. Lehro Devi / Padama Ram	Jinjinyala	Member
9	Smt. Gogi Devi / Padama Ram	Jinjinyala	Member
10	Smt. Ganga Devi / Hari Ram	Jinjinyala	Member
11	Smt. Vimla / Jiya Ram	Jinjinyala	Member

Gajna Mata SHG

S.No.	Name/Fathers Name	Village	Position
1	Smt. Meena Kanwar / Dungar Singh	Kanasar	President
2	Smt. Dhapu Kanwar / Bhanwar Singh	Kanasar	Secretary
3	Smt. Padam Kanwar / Ganpat Singh	Kanasar	Treasuer
4	Smt. Dhapu Kanwar / Inder Singh	Kanasar	Member
5	Smt. Paras Kanwar / Anop Singh	Kanasar	Member
6	Smt. Mohan Kanwar / Dalpat Singh	Kanasar	Member
7	Smt. Mohan Kanwar / Pep Singh	Kanasar	Member
8	Smt. Inder Singh / Viram Singh	Kanasar	Member
9	Smt. Durga Kanwar / Vikram Singh	Kanasar	Member
10	Smt. Umrao Kanwar / Anand Singh	Kanasar	Member

Shree Gopalji Dadoji SHG

S.No.	Name/Fathers Name	Village	Position
1	Smt. Asu Kanwar / Dungar Singh	Sh. Megh Singh Nagar	President
2	Smt. Pappu Kanwar / Bhawani Singh	Sh. Megh Singh Nagar	Secretary
3	Smt. Sohan Kanwar / Lal Singh	Sh. Megh Singh Nagar	Treasuer
4	Smt. Agro Kanwar / Roop Singh	Sh. Megh Singh Nagar	Member
5	Smt. Haru Kanwar / Sumer Singh	Sh. Megh Singh Nagar	Member
6	Smt. Sayar Kanwar / Chain Singh	Sh. Megh Singh Nagar	Member
7	Smt. Bhanwari Kanwar / Jagmal Singh	Sh. Megh Singh Nagar	Member
8	Smt. Ugam Kanwar / Ummed Singh	Sh. Megh Singh Nagar	Member
9	Smt. Kamma Kanwar / Manohar Singh	Sh. Megh Singh Nagar	Member
10	Smt. Pappu Kanwar / Durg Singh	Sh. Megh Singh Nagar	Member
11	Smt. Dheeru Kanwar / Jabbar Singh	Sh. Megh Singh Nagar	Member

Bhagya Shree SHG

S.No.	Name/Fathers Name	Village	Position
1	Smt. Manju Devi / Gopal Das	Jinjinyala	President
2	Smt. Soni Kanwar/ Mangal Singh	Jinjinyala	Secretary
3	Smt. Jethu Kanwar / Sumer Singh	Jinjinyala	Treasuer
4	Smt. Bambha Kanwar / Gulab Singh	Jinjinyala	Member
5	Smt. Sugan / Chagan Lal	Jinjinyala	Member
6	Smt. Pappu Kanwar / Madan Singh	Jinjinyala	Member
7	Smt. Khetu Kanwar / Narpat Singh	Jinjinyala	Member
8	Smt. Paras Kanwar / Anop Singh	Jinjinyala	Member
9	Smt. Kiku Kanwar / Koju Singh	Jinjinyala	Member
10	Smt. Mangi / Jog Puri	Jinjinyala	Member

Shanti SHG

S.No.	Name/Fathers Name	Village	Position
1	Smt. Khama Devi / Jasa Ram	Bhakri Bas	President
2	Smt. Chuni Devi / Deda Ram	Bhakri Bas	Secretary
3	Smt. Phuli Devi / Bagta Ram	Bhakri Bas	Treasuer
4	Smt. Vimla Devi / Jabar Das	Bhakri Bas	Member
5	Smt. Prem Kanwar / Umrao Singh	Bhakri Bas	Member
6	Smt. Lila Devi / Madan Lal	Bhakri Bas	Member
7	Smt. Ramu Devi / Om Prakash	Bhakri Bas	Member
8	Smt. Mandu Devi / Narpat Ram	Bhakri Bas	Member
9	Smt. Haru Devi ./ Raja Ram	Bhakri Bas	Member
10	Smt. Mangu Kanwar / Bagtawar Singh	Bhakri Bas	Member

Jai Bhwani SHG

S.No.	Name/Fathers Name	Village	Position
1	Smt. Ridu Devi / Mana Ram	Bhakri Bas	President
2	Smt. Sua Devi / Chena Ram	Bhakri Bas	Secretary
3	Smt. Santu Devi / Bhanwar Lal	Bhakri Bas	Treasuer
4	Smt. Mima Devi / Jitha Ram	Bhakri Bas	Member
5	Smt. Phuli Devi / Madhu Ram	Bhakri Bas	Member
6	Smt. Shanti Devi / Bhaga Ram	Bhakri Bas	Member
7	Smt. Saro Devi / Sanga Ram	Bhakri Bas	Member
8	Smt. Mandu Devi / Mukhta Ram	Bhakri Bas	Member
9	Smt. Pushpa Devi / Jabra Ram	Bhakri Bas	Member
10	Smt. Kisna Devi / Lala Ram	Bhakri Bas	Member
11	Smt. Shanti Devi / Deva Ram	Bhakri Bas	Member
12	Smt. Rukmo Devi / Jasa Ram	Bhakri Bas	Member
13	Smt. Jyoti Devi / Bhoma Ram	Bhakri Bas	Member
14	Smt. Mandu Kanwar / Aainath Singh	Bhakri Bas	Member

Jai Devi Mata SHG

S.No.	Name/Fathers Name	Village	Position
1	Smt. Radha Devi / Mohan Das	Bhakri Bas	President
2	Smt. Bhanwari Devi / Visa Ram	Bhakri Bas	Secretary
3	Smt. Mohani Devi / Bhura RAm	Bhakri Bas	Treasuer
4	Smt. Kamla Devi / Mona Ram	Bhakri Bas	Member
5	Smt. Naini Devi / Multan Ram	Bhakri Bas	Member
6	Smt. Hawa Devi / Dipa Ram	Bhakri Bas	Member
7	Smt. Dipu Devi / Jiya Ram	Bhakri Bas	Member
8	Smt. Sita Devi / Kumba Ram	Bhakri Bas	Member
9	Smt. Sira Devi / Chima Ram	Bhakri Bas	Member
10	Smt. Mohani Devi / Kalu Ram	Bhakri Bas	Member
11	Smt. Pushpa Devi / Satya Narayan	Bhakri Bas	Member
12	Smt. Gita Devi / Dhana Das	Bhakri Bas	Member
13	Smt. Rukmo Devi / Oma Ram	Bhakri Bas	Member
14	Smt. Pehpa Devi / Dina Ram	Bhakri Bas	Member

Jai Laxmi SHG

S.No.	Name/Fathers Name	Village	Position
1	Smt. Rukma Devi / Sardar Singh	Bhakri Bas	President
2	Smt. Mohani Devi / Babu Das	Bhakri Bas	Secretary
3	Smt. Bhanwari Devi / Manohar Das	Bhakri Bas	Treasuer
4	Smt. Sayar Kanwar / Anop Singh	Bhakri Bas	Member
5	Smt. Khama Kanwar / Gaja Ram	Bhakri Bas	Member
6	Smt. Sayar Kanwar / Guman Singh	Bhakri Bas	Member
7	Smt. Papu Kanwar / Mangi Lal	Bhakri Bas	Member

8	Smt. Pepa Devi / Sagta Ram	Bhakri Bas	Member
9	Smt. Bhomu Devi / Uda Ram	Bhakri Bas	Member
10	Smt. Jhankar / Kewal Ram	Bhakri Bas	Member

Jai Ambe Maiya SHG

S.No.	Name/Fathers Name	Village	Position
1	Smt. Ladu Kanwar / Karna Singh	Bhakri Bas	President
2	Smt. Isi Kanwar / Chatur Singh	Bhakri Bas	Secretary
3	Smt. Usha Kanwar / Mangu Singh	Bhakri Bas	Treasuer
4	Smt. Shanti Devi / Magi Lal	Bhakri Bas	Member
5	Smt. Papu Kanwar / Iswar Singh	Bhakri Bas	Member
6	Smt. Ramu Kanwar / Taga Ram	Bhakri Bas	Member
7	Smt. Gawri Devi / Mula Ram	Bhakri Bas	Member
8	Smt. Shanti Devi / Jetha Ram	Bhakri Bas	Member
9	Smt. Shanti Devi / Gumana Ram	Bhakri Bas	Member
10	Smt. Padma Devi / Pokar Ram	Bhakri Bas	Member

Priyanka SHG

S.No.	Name/Fathers Name	Village	Position
1	Smt. Sugna Kanwar / Hamir Singh	Beri ka Bas	President
2	Smt. Champa Kanwar / Daulat Singh	Beri ka Bas	Secretary
3	Smt. Dhapu Kanwar / Teja Ram	Beri ka Bas	Treasuer
4	Smt. Sugan Kanwar / Malam Singh	Beri ka Bas	Member
5	Smt. Dhapu Kanwar / Khusal Singh	Beri ka Bas	Member
6	Smt. Suraj Kanwar / Hamir Singh	Beri ka Bas	Member
7	Smt. Prem Kanwar / Rugpal Singh	Beri ka Bas	Member
8	Smt. Champa Kanwar / Deep Singh	Beri ka Bas	Member
9	Smt. Hawa Kanwar / Malam Singh	Beri ka Bas	Member
10	Smt. Barju Kanwar / Chain Singh	Beri ka Bas	Member
11	Smt. Mangu Kanwar / Bhoma Singh	Beri ka Bas	Member

Priyanka SHG

S.No.	Name/Fathers Name	Village	Position
1	Smt. Diru Kanwar / Arjun Singh	Beri ka Bas	President
2	Smt. Muli Kanwar / Inder Singh	Beri ka Bas	Secretary
3	Smt. Barju Devi / Subhash Ram	Beri ka Bas	Treasuer
4	Smt. Barju Kanwar / Jabar Singh	Beri ka Bas	Member
5	Smt. Gogu Kanwar / Jabar Singh	Beri ka Bas	Member
6	Smt. Kawran Kanwar / Bhim Singh	Beri ka Bas	Member
7	Smt. Manju Kanwar / Madan Singh	Beri ka Bas	Member
8	Smt. Sayar Devi/ Suja Das	Beri ka Bas	Member
9	Smt. Sua Kanwar / Hamir Singh	Beri ka Bas	Member
10	Smt. Diru Kanwar / Aman Singh	Beri ka Bas	Member
11	Smt. Nijra Kanwar / Sagat Singh	Beri ka Bas	Member

12	Smt. Nijra Kanwar / Bhanwar Singh	Beri ka Bas	

Gram Panchayat wise/ Watershed Committee wise Details of Watershed Committee

Watershed Committe – Gopalsar

S.No.	Name/Fathers Name	Village	Position
1	Sh. Champa Ram / Sh. Sumera Ram	Kanasar	President
2	Sh. Lal Singh / Sh. Khinv Singh	Shahid Megh Singh Nagar	Secretary
3	Sh. Koja Ram / Sh. Binja Ram	Ramdev Nagar	Member
4	Sh. Sagat Singh / Sh. Panne Singh	Ramdev Nagar	Member
5	Sh. Vikram Singh / Sh. Jabbar Singh	Shahid Megh Singh Nagar	Member
6	Sh. Sher Singh / Sh. Vijay Singh	Shahid Megh Singh Nagar	Member
7	Smt. Sua Kanwar / Sh. Ranidan	Gopalsar	Member
8	Sh. Madho Ram / Sh. Sanwala Ram	Gopalsar	Member
9	Sh. Gaja Ram / Sh. Mangala Ram	Gopalsar	Member
10	Sh. Pep singh / Sh. Vagat Singh	Jinjinyala	Member
11	Smt. Hawa Devi / Sh. Longa Ram	Jinjinyala	Member
12	Sh. Bhanwar Puri / Sh. Sohan Puri	Jinjinyala	Member
13	Smt. Varju Devi / Sh. Rewat Ram	Kanasar	Member
14	Sh. Bhura Ram / Sh. Bhera Ram	Kanasar	Member
15	Sh. Bhagirath Ram / Sh. Beedda Ram	Gangasar	Member
16	Smt. Sire Kanwar / Sh. Bhanwar Singh	Gangasar	Member
17	Sh. Karna Ram / Sh. Jawata RAm	Gangasar	Member
18	Sh. Daulat Singh / Sh. Maan Singh	Devgarh	Member

Problems and scope of improvement in the project area

The socio economic conditions of the households of the project area reveal that most of the households are engaged in only farming activities which mainly depend on the Monsoonal rainfall. The rainfall in the project area is very less and very below to the state average, again it occurs only in a limited period and restricted in a few storms. This further limits the opportunity to cultivate and sow the crops in time and in diversified manner with variety of crops. The options before the farmers in rain fed agriculture and given climatic conditions are very limited. The risk appetite of farmers is very low as probability of good rains and its distribution over a crop period is not regular as well as the economic conditions of local farmers is also compromising. The quality of soil in most of the area is poor with a limited organic matter and low nutritional contents. The topsoil faces a lot of risk against water and wind erosion. The texture of the soil is light by and large in entire area. **The rills and gullies** are formed in private and community land at higher slopes initiating from hillocks. The Monsoonal rainfall when occurs in limited storms with higher intensities it turns into runoff and most of it go in waste after fulfilling the retentions of local depressions and some local structures which are constructed by local community efforts and under different developmental schemes. The area faces acute water shortage in summers. The quality of ground water is not good and it not suitable for animal and human use.

The animal husbandry is the part of most of the household's economy. Farmers are rearing cattle, buffalo, goats, seeps, camels etc. but most of these animals are of local breeds which are less productive and uneconomic as well it imposes increased biotic pressure on natural resources of project area. The households are having some surplus milk production but due to poor and unorganised marketing linkages it does not fetches rightful value. The other opportunity of allied activities for the support of livelihood is almost absent. Most of the household are engaged in employment given under MNREGS but it does not suffice to lead a satisfactory life conditions for entire family for the entire period of a year. In such a forcing situation some people having skills in masonry works prefer to migrate into nearby towns to have better earnings.

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. 47 ha land is arable wasteland and 569 ha is fallow can be brought under

cultivation with the interventions of the present project. The productivity of rain fed agriculture can be improved with interventions of soil and water conservation activities with improved moisture regime. The crops can be rescheduled imparting needful trainings to farmers to adopt the proven technologies and package of practices. The cropping pattern as enormous possibilities to improved to attain a fair increment in productivity.

There is no significant source of irrigation in project area, only small areas are irrigated with Tubewells and with efforts this can be increased to 15%. 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) 58690 MT/year fodder scarcity can be met out through Pasture development and improving seed varieties, putting more are under fodder cultivation, fodder treatment and value addition to it, etc.

Improved animal Husbandry practices can increase the productivity of livestock. The quality of animals can be improved by controlling population of stray animals adopting castration of male animals those are of local breeds. Breed improvement can be achieved through artificial inseminations, by distribution of bulls, rams of improved breed. The scientific methods of milk collection, milk storage, value addition to its quality and with assured marketing linkages can prove a promising livelihood support. The females of the area can be organized through self help groups to promote the habits of saving, thrift and credit can be pooled up through revolving funds. Such organizations to be sensitized on gender issues, elimination of social evils, education and health etc.

Some innovative concepts like establishment of Grain Bank, Seed Bank, Fodder Bank, Milk Co operatives, federation of SHG's may add a surety to self sustained rural economy. Increased and positive involvement of Panchayati Raj Institutions, Social Audits, techno-economic monitoring will further ensure impetuosity in attaining expected outcomes.

CHAPTER – II

Socio economic Features, Problems and Scope

The project comprises of seven villages of Gram Panchyat. The literacy level is low in general again it is very low amongst females. The traditional customs and followings are persistent yet. The distribution of demography is scattered according to their land holdings and resides in small habitations/ dhanis. Villages have less connectivity with the market and other needful amenities. The evil of child marriages, consumption of liquor, opium poppy and other such narcotic drugs is also observed during the household survey of the project area. The productivity of the land, animal and household livelihood activities is very low. To fetch the bread and butter for the family people are forced to migrate. Most of the migration is of construction labourers to nearby towns.

The above problems can be minimized by putting the available natural resources to its optimum capacity without damaging them to irreversible level. The interventions of IWMP can take care of the lands and whatever moisture is available can be conserved to enhance the rain fed agriculture productivity. The practice of animal husbandry can be used as strength of the area with the use of breed improvement, improvement of animal health, ensuring the quality fodder and feed. The animal produce, milk may be sold to nearby towns with the improved supply chain and value addition to the produce on the theme of self help groups or cooperatives. The institutional arrangements formed and to be formed in the course of time during project period may improve the governance and the fair distribution of usufructs.

Table 2.1 Population & Household Details:

Total Population				
Male	**Female**	**Total**	**SC**	**ST**
2632	2336	4968	1095	364

Household Details						
BPL household	**L. Less**	**Small Farmer**	**M. Farmer**	**Total household**	**SC household**	**ST household**
205	16	408	131	892	253	81

Table 2.2 Development indicators

S. No.	Development Indicators	State	Project Area
1	Per capita income (Rs.)	16260	8240
2	Poverty ratio	0.22	0.38
3	Literacy (%)	0.604	0.58
4	Sex Ratio	921	913
5	infant mortality rate	NA	0.024
6	maternal mortality ratio	NA	0.018

The table indicates poor socio economic conditions as well as the health conditions.

The total geographical area of the project or cluster selected for the treatments is 4000 ha. Out of which some area has been treated under different schemes in preceding years. Some area like Stony wastes, habitations, roads, local paths, water bodies, sand dunes etc. are not available for treatments as well as some flat lands of slope 0-1% slope does not require any treatments, hence kept aside from effective area of the project. The Gram Panchayat wise details are as follows:

Table 2.3(A) Proposed Land Under Treatment

S. No.	Gram Panchayat	Gram Panchayat Wise Details of Area, in ha				
		Total Geo graphical Area	Area Already Treated	Area not Available for Treatment	Area not Requiring Treatment	Net Effective Area
1	Gopalsar	5038	1000 ha	---	38 ha	4000 ha
Total		**5038**	**1000**		**38**	**4000**

Table 2.3(B) Land Use

Land Use	Total area in Ha.				
	Private	Panchayat	Government	Community	Total
Agriculture Land	2965	0	0	0	2965
Temporary fallow	462	0	0	0	462
Permanent Fallow	107	0	0	0	107
Cultivated Rain fed	2275	0	0	0	2275
Cultivated irrigated	121	0	0	0	121
Net Sown Area	2396	0	0	0	2396
Net Area sown more than once	207	0	0	0	207
Forest Land	0	0	0	0	0
Waste Land	0	0	47	0	47
Pastures	0	375	0	89	464
Others	0	0	524	0	524
Total	**2965**	**375**	**571**	**89**	**4000**

The project area has 47 ha of cultivable wasteland 569 ha of fallow land (total 616 ha) can be brought under cultivation if some irrigation source can be provided through

Construction of WHS like Anicut, Khadin, Tanka, Farm ponds etc. Through demonstration of improved & hybrid rain fed varieties of seeds for the crops of pulses, oil seeds, fodder, cereals etc. Construction of WHS can also increase in area under Rabi crop in pedacast which is Negligible at present.

47 ha. (1.18% of the project area) is under wastelands and can be brought under vegetative cover, with reasonable effort .Activities like Earthen check dams, Vegetative filter strip, V-ditches, staggered trenches, WHS (Anicuts, Khadins), Afforestation of wastelands and Pasture development will be taken up on these lands

Pasture development the land use table shows that there is 464hectare pasture land (11.6%) This emphasizes the need for taking up pastureland development works through sowing of promising species of grasses and forestry plantation. The local habitat of grass like dhaman or sewan which is very hardy and perennial in nature will be established which will improve the availability of good fodder as well as it will work as a binding agent for soil particles which in turn reduce the soil erosion.

Table 2.4 .a Agriculture and Horticulture status and fuel availability.

Cropping Status												
S. No	Season	Crop sown	Rainfed				Irrigated				Total	
			Variety	Area (ha)	Production (Ton)	Productivity (kg/ha)	Variety	Area (ha)	Production (Ton)	Productivity (kg/ha)	Area (ha)	Production (Ton)
1	Kharif	Bajra	Deshi	1682	590	350	Hybrid-9444	22	22.5	1020	1704	612.5
		Guar	Deshi	265	95	375	0	0	0	0	265	95
		Moong	Deshi	120	27	240	0	0	0	0	120	27
		Moth	Deshi	115	21.5	210	0	0	0	0	115	21.5
		Groundnut	Deshi	88	158	1800	G-20	32	38.5	1200	120	196.5
		Til	Deshi	5	0.5	145	0	0	0	0	5	0.5
		Castor	0	0	0	0	Mahyco-404	4	6	1500	4	6
2	Rabi	Wheat	0	0	0	0	Raj-3077	24	34	1410	24	34
		Cummin	0	0	0	0	RZ-19	15	7.7	510	15	7.7
		Mustard	0	0	0	0	BIO-902;T-59	20	24	1200	20	24
3	Zaid	Forage	0	0	0	0	RAJ CHARI-1	4	72	18000	4	72
Total				2154				121			2296	

Table 2.4.b Abstract of cropped Area (ha)

Area under Single crop	2275
Area under Double crop	59
Area under Multiple crop	4

The farmers are using Deshi & traditional varieties of Bajra, guar, moong, month, Til. The varieties for bajra will be used those are developed by RSSC, NSC, CAZRI like HSB 67, HSB 75, WCC 75 etc. The Moong of varieties like K 17, CAZRI-8, Moth of varieties like JADIA, RMO 40, CAZRI etc, Sesame of latest varieties will be introduced with the advice of WDT, resource persons and department of agriculture. The crop rotation and the cropping pattern will be introduced like inter cropping, mixed cropping etc. to enhance the out come. The crop rotation for this area under practice is as follows:

Bajra	-	Fallow
Moong	-	Tarameera
Moong	-	Fallow
Fallow	-	Tarameera
Til	-	Fallow
Caster	-	Mahyco-404
Moth	-	Fallow

The table 2.4.b shows that only 207 ha is (5.17%) is double cropped area and that is also not on assured basis, it is only due to rain harvesting and moisture conservation practices. Also the crop rotation shows that fallow lands are there. This indicates that there is scope for change in crop rotation in fields where there are fallow lands through Soil and Water conservation measures, crop demonstration and diversification in agriculture.

Soil and Water conservation measures besides putting fallow lands under cultivation can change the area under single cropping to double as well as multiple cropping.

Table 2.4.c Productivity Gap Analysis

Name of the crop	Productivity kg/ha				
	India	Highest Average in Rajasthan	Highest Average of Agro climatic zone	District	Project Area
Bajara	825	800	600	450	350
Guar	610	610	550	400	375
Moong	625	530	350	240	240
Month	350	350	300	240	210
Til	450	325	200	150	145

Analysis of the above table indicate that besides national gap there is wide gap in productivity within state and even within same agro climatic zones.

The reasons for this variation are:

- Farmers are using Desi varieties of Bajra, guar, moong, month, Til whereas the recommended varieties as mentioned above will definitely improve the productivity.
- Lack of Availability of good quality seeds of desired crops and the availability of variety in adequate quantities and the time for sowing to the farmers.
- Availability of water for cultivation (0.01% is irrigated)

The productivity gap and reasons of it indicate potential to increase the productivity through crop demonstration. Crop demonstrations would be carried out on improved crops/ varieties, improved agronomic practices. INM, IPM, Mixed cropping, distribution of fodder seed mini kit. Demonstration of improved methods and economics of fodder crops cultivation and also distribution foundation seeds of Forage Crops for further multiplication, introduction of fodder crops in the existing crop rotations.

Table 2.5 Existing area under horticulture/Vegetables/Floriculture (ha)

Activity	Area	Species	Varieties	Recommended varieties	Production (Kg/Ha)
Horticulture	0	--	--	Ber (Gola, Sev)	200
	0			Aonwla	140
Vegetables	0	--	--	----	---
Floriculture	0	--	--	----	---
Medicinal Plants	0	--	--	Sonamukhi, Aloevera,	50 60

Table 2.6 Land holding Pattern in project area

Type of Farmer	Total House Holds	Land holding (ha) irrigation source wise			Land holding (ha)Social group wise				
		Irrigated (source)	Rainfed	Total	General	SC	ST	OBC	BPL
(i) Large farmer	132	105	1340	1445	1080	0	0	365	0
(ii) Small farmer	408	16	755	771	250	235	25	151	110
(iii) Marginal farmer	131	0	80	80	20	29	16	10	5
(iv) Landless person	16	0	0	0	0	0	0	0	0
(V) No. of BPL	205	0	100	100	14	30	10	38	8

households									
Total	**892**	**121**	**2275**	**2396**	**1364**	**294**	**51**	**564**	**123**

35.5% land holdings belong to small and marginal farmers who own 35.5% of total cultivated area. Horticulture/vegetables could be more Beneficial to Small and marginal farmers as well as for large farmers with no irrigation facility. Horticulture/vegetables will be promoted in a part of land with farm pond/Tanka construction.

The following activities will be more beneficial for small land holdings and for diversification and income for large farmers

Horticulture plantation, Medicinal and Aromatic Crops, floriculture*:* As discussed earlier. Horticulture/vegetables could be more economical to Small and marginal farmers with farm pond/Tanka construction. The project area is planned to put some area adjacent to the water tanka and RWHS under medicinal crops like Google, Sonamukhi, Aloevera, Ashwagandha, Asperagus etc.

Agro forestry plantation: To increase the income of farmers and to establish the shelter belt plantation against wind velocity to protect the lands from erosion due to high wind velocities.

Setting of Vermi Compost Units: Keeping in view the side effect of residues of chemicals and fertilizers on human health, the emphasis would be on cultivation of organic produce through motivating farmers and providing assistance for production of organic input, vermi compost, farm yard manure.

Production and distribution of quality seed: There is need to ensure that good quality seed is available for cultivators, for which adequate seed production would be initiated in watershed areas with the assistance of private sector and agriculture department with the improved technologies and package of practices.

Sprinklers and pipelines: For efficient water management practices, emphasis would be on demonstration of sprinklers with adequate financial support and convergence/private partnership.

Establishment of nurseries: Most of the planting material is procured from other parts of the District/ State. The procurement of planting material from distant places causes damage to the planting material and often results in untimely supply. Hence nursery development

activity has been planned in area. The nursery will be raised through SHG with the support of revolving fund of project as well as groups own resources.

Innovative hi-tech/ cash economy oriented activities: Innovative hi-tech/ cash crops/ activities/ projects like mushroom cultivation, floriculture, etc which are not in existence at present, can be implemented by individual farmers / private partnerships as there is enormous scope of mushroom dry or wet in the nearby tourist oriented hotels/ resorts.

Drip irrigation: Drip irrigation will be promoted in all horticulture plantations, vegetables and in nurseries for rational use of irrigation to achieve higher yields and quality produce. Earthen pot/ pitcher irrigation will also be practised at water tank based plantations.

Table 2.7 Livestock Status–animals/milk production/average yield.

S. No.	Description of animals	Population in No.	Yield (milk/ mutton/ Wool)	Equ. cow units	Dry matter requirement per year (7Kg per animal.)	Total requirement in M.T.
1	Cows					
	Indigenous	794	975 ltr/Day	794	5558	20300
	Hybrid	12	90 ltr/Day	12	84	300
2	Buffaloes	125	385 ltr/Day	375	2625	9600
3	Goat	1680	840 ltr/Day	840	5880	21500
4	Sheep	409	Wool 800 kg/Anum	204	1428	5210
5	Camel	35		70	490	1780
6	Poultry	0	0	NA	0	0
7	Piggery	0	0	NA	0	0
Total						**58690**

In spite of the large number of livestock, production is less hence increase in productivity across all species, is a major challenge. To reduce production of unproductive cattle and to control the population of cattle, to improve the productivity by improving the breeds by breeding management following activities will be taken up

- Castration
- Artificial insemination
- Distribution of superior Breeding bulls for use in Cattle and Buffalo
- Breeding & distribution of crossbred rams

Besides breed improvement other animal husbandry practices like better health, hygiene and feeding practices can increase productivity of livestock. Hence Activities like Animal health camps, Urea-Molasses treatment demonstration, demonstration of improved methods of conservation and utilization of Forage crops are proposed. The Storage of fodder will be managed with the use of compressed fodder bricks with nutritional value addition.

Table 2.8 Existing area under fodder (ha)

S. No	Item	Unit	Area/ Quantity
1	Existing Cultivable area under Fodder	Ha	145
2	Production of Green fodder	Tonns/year	60
3	Production of Dry fodder	Tonns/ Year	200
4	Area under Pastures	Ha	255
5	Production of fodder	Tonns/year	170
6	Existing area under Fuel wood	Ha	50
7	Supplementary feed	Kgs/day	35
8	Silage Pits	No	0
9	Availability of fodder	Quintals	22468
10	Deficiency/excess of fodder	Quintals	58690

The above table shows there is fodder deficiency (Requirement is 58690 Qntl. and availability 22468 Qntl.)

To minimize the large and expanding gap between feed and fodder resource availability and demand there is need for

Increase in area under fodder crops

Increase in productivity of fodder crops

Development of pastures

And reduction in large number of livestock production through replacement by few but productive animals

Table 2.9 Agriculture implements

S.No	Implements	Nos.
1	Tractor	30
2	Sprayers-manual/ power	35
3	Cultivators/Harrows	15
4	Seed drill	3
5	Any Other	–

Farm mechanization and seed banks: As discussed earlier 35.50% land holdings belong to small and marginal farmers. The cultivation of 35.50% of total cultivated area so owning of big farm implements by individual farmers is not economical so SHG would be promoted to buy farm implements and rent to farmer. The concept of fodder and Seed bank will be promoted on institutional basis in the project so that resource poor people could be facilitated and ensured timely and locally available seed and fodder material as per their need.

Table 2.10 NREGA Status –No.of Card Holder, activities taken so far, employment status.

Sr. no.	Name of village	Total No. of job cards	Employment Status	Activity taken up so far
1	Gopalsar	397	57%	Naadi,Kutcha Roads
2	Ramdev Nagar	45	79%	Naadi,Kutcha Roads
3	Shahid Megh Singh Nagar	101	65%	Naadi,Kutcha Roads
4	Gangasar	45	81%	Naadi,Kutcha Roads
5	Jinjinyala	104	52%	Naadi,Kutcha Roads
6	Kanasar	84	74%	Naadi,Kutcha Roads

Table 2.11 Migration Details

Name of village	No. of per sons mig rating	No. of days per year of mig ration	Major reason(s) for mig rating	Distance of destination of migration from the village (km)	Occupation during migration	Income from such occupation (Rs. in lakh)
Gopalsar	45	90-120	Better Earning	75-80	Masonary work	0.18-.025 /person
Ramdev Nagar	18	90-120	Better Earning	75-80	Masonary work	0.18-.025 /person
Shahid Megh Singh Nagar	22	90-120	Better Earning	75-80	Masonary work	0.18-.025 /person
Gangasar	15	90-120	Better Earning	75-80	Masonary work	0.18-.025 /person
Jinjinyala	34	90-120	Better Earning	75-80	Masonary work	0.18-.025 /person

Kanasar	12	90-120	Better Earning	75-80	Masonary work	0.18-.025 /person

The migration can be checked by creation of employment opportunities, enhancing farm level economy, increased the income of the people engaged in animal husbandry by dairy, poultry, proper marketing and value addition to the produce (As discussed earlier) and diversification in livelihoods. Well planned animal husbandry activities and dairying is envisaged to be taken as main on farm income generating activity with convergence of other departmental schemes. A scientific and temper proof milk collection unit and milk storage unit (chilling Plant) is envisaged to be installed on SHG concept. The marketing linkages and MOU with Governmental as well as non- Government sector dairying units in Jodhpur will be ensured with intervention of District administration and allied Departments/ public sector units.

The existing livelihoods of project Villages are given below

Table 2.12 (a) Major activities (On Farm)

Name of activity	No. of House holds	Average annual income /per House hold (in lac)
Cultivators	795	0.50
Dairying	13	0.20
Poultry	0	0
Piggery	0	0
Landless Agri. Laborers	16	0.36

Table 2.12(b) Major activities (Off Farm)

Name of activity	Households/ individuals	Average annual income /per House hold (in lac)
Artisans	19	1.00
Carpenter	13	0.75
Blacksmith	01	0.35
Leather Craft	8	0.25
Potter	05	0.25
Mason	79	0.45
Others (Cycle Repair, STD, Craft etc)	02	0.35

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

Table 2.13(a) Status of Existing SHG

S.No	Name of SHG	Members	Activity involved	Monthly income	Fund available	Assistance available	Source of assistance	Training received
1	Bhagyashree	10	Agriculture	---	---	---	---	---
2	Shanti	10	Agriculture	---	---	---	---	---
3	Jai Bhawani	10	Veterinary	---	---	---	---	---
4	Jaidevi Mata	10	Agriculture	---	---	---	---	---
5	Jai Laxmi	10	Agriculture	---	---	---	---	---
6	Jai Ambe Maiya	10	Agriculture	---	---	---	---	---
7	Priyanka	10	Agriculture	---	---	---	---	---
8	Kamleshwari	10	Agriculture	---	---	---	---	---

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

II. **Technical Features**

Table 2.14 Ground Water

S. No	Source	No.	Functional depth	Dry	Area irrigated	Water availability(days)
1	Dug wells	0	O	5	0	---
2	Shallow tube wells	0	O	0	0	---
3	Pumping sets	0	O	0	0	---
4	Deep Tube Wells	7	300-350 Ft	0	140	365
	Total	**7**		**5**	**140**	**365**

Table 2.15 Availability of drinking water

S. No	Name of the village	Drinking water requirement Ltrs/day	Present availability of drinking water Ltrs/day	No. of drinking water sources available	No. functional	No. requires repairs	No. de funct
1	Gopalsar	46000	30000	7	4	1	2
2	Ramdev Nagar	14000	8000	2	2	0	0
3	Shahid Megh Singh Nagar	10000	6000	2	1	0	1
4	Gangasar	19000	11000	3	1	1	1
5	Jinjinyala	28000	20000	4	2	1	1

6	Kanasar	21000	14500	2	2	0	0

Table 2.16 Water Use efficiency

Name of major crop	Area (Hectare)			
	through water saving devices(Drip/ Sprinklers)	through water conserving agronomic practices#	Any other (pl. specify)	Total
Bajra	Nill	Nill	Nill	Nill
Guar	Nill	Nill	Nill	Nill
Moong	Nill	Nill	Nill	Nill
Month	Nill	Nill	Nill	Nill
Til	Nill	Nill	Nill	Nill
Mustard	Nill	Nill	Nill	Nill

- The tables above indicate need for judicious use of available Water.
- Encouraging optimum use of water through installation of sprinklers/ drips on every operational wells and other irrigation source.

Table 2.17 Slope details.

S.No.	Slope percentage	Area in hectares
1	0 to 3%	1260
2	3 to 8%	930
3	8 to 25%	1740
4	> 25%	70

As most of the area has slope between range 8-25%, construction of L.S.C.D./Gabions, V-ditches can solve the problem of water erosion in highly sloppy agriculture fields and protect washing of top soil and manures/fertilisers. The area having less than 3% slope can be improved by

adopting contour bunds as well as scientific tillage practices, agronomical practices and vegetative barriers. The arable lands having slope more than 2% to be treated by constructing earthen bunds, contour/ field bunding fortified with vegetative hedges of perennial grasses and locally suited agro forestry plants.

Water Budgeting

Strange's table is used to calculate the total yield from watershed

Strange's Table

Yield from 1 hectare of Natural (Untreated) catchment

Total Monsoon rainfall in mm	Good Catchment		Average Catchment		Bad Catchment	
	% of utilisable rain water	Utilisable rain water (Cum)	% of utilisable rain water	Utilisable rain water (Cum)	% of utilisable rain water	Utilisable rain water (Cum)
20	0.08	0.16	0.06	0.12	0.04	0.08
40	0.13	0.52	0.0975	0.39	0.065	0.26
60	0.245	1.47	0.1735	1.041	0.1225	0.735
80	0.41	3.28	0.3075	2.46	0.205	1.64
100	0.7	7	0.525	5.25	0.35	3.5
120	0.9	10.8	0.675	8.1	0.45	5.4
140	1.1225	15.715	0.91875	12.8625	0.6125	8.575
160	1.625	26	1.21875	19.5	0.8125	13
180	2.12	38.16	1.59	28.62	1.06	19.08
200	2.7	54	2.025	40.5	1.35	27
220	3.26	71.72	2.445	53.79	1.63	35.86
240	3.81	91.44	2.8575	68.58	1.905	45.72
260	4.45	115.7	3.3375	86.775	2.225	57.85
280	5.19	145.32	3.3925	94.99	2.595	72.66
300	5.9	177	4.425	132.75	2.95	88.5
320	6.72	215.04	5.04	161.28	3.36	107.52
340	7.75	263.5	5.6775	193.035	3.785	128.69

360	8.55	307.8	6.4125	230.85	4.275	153.9
380	9.45	359.1	7.0876	269.3288	4.725	179.55
400	10.25	410	7.6875	307.5	5.125	205
420	11.05	464.1	8.2875	348.075	5.525	232.05
440	12	528	9	396	6	264
460	12.95	595.7	7.7125	354.775	6.475	297.85
480	13.9	667.2	10.425	500.4	6.95	333.6
500	14.7	735	11.025	551.25	7.35	367.5
520	15.5	806	11.625	604.5	7.75	403
540	16.36	883.44	12.2625	662.175	8.175	441.45
560	17.2	963.2	12.9	722.4	8.6	481.6
580	18	1044	13.5	783	9	522
600	19	1140	14.25	855	9.5	570

Good catchment - Hills or plains with little cultivation and moderately absorbent soil
Average catchment - Flat partly cultivated stiff gravely sandy absorbent soil
Bad catchment - Flat and cultivated sandy soil

Table No. 2.18 a. Total available water

Village	Area ha.	Type of catchment	Utilisable rain water/ ha (Cu.m.)	Utilisable rain water from micro w/s (Cu.m.)
Gopalsar	4000	Average	94.99	379960

Table No. 2.18 b. Water tapped in existing structure

S.No.	Name	No.	Storage Capacity (Cu.m.)
i)	Major Irrigation Project	0	0
ii)	Medium Irrigation Project	0	0

iii)	Form Ponds/Tanks	68	9600
iv)	Anicuts/Nadi	12	5300
	Total		14900

The water budgeting indicates potential for water harvesting in the area. Loose stone check dam, Masonry check dam, Contour bunding, Dug out pond, Nallah bunding and water harvesting structure in arable land (Tanka), Khadin etc. activities could be done.

Table No. 2.18 d.Activities planned for water harvesting

Activity	No./ha.	Storage capacity per No. (Cu.m.)	Total water to be harvested (Cu.m.)
Tanka	108	24	2592
Anicut	10	450	4500
Dug out pond	12	110	1320
		Total	8412

Table 2.19 Soil details

S. No.	Major Soil Classes	Area in hectares	
A	**Soil Depth**		
1	Sandy Loam	2800	
2	Loam	1200	
B	**Soil Depth :**		
1	0.00 to 7.50	1250	
2	7.50 to 45.00	1180	
3	> 45.00	1570	
C	**Soil fertility Status**		
		Kg/ha	**Recomm.**
	N	48	75
	P	24	30

	K	15	20
	Micronutrients	625 ppm	950 ppm

The analysis of table shows the need to improve and maintain soil fertility. Soil health card to every farmer every crop season will be provided, which will include the recommendation for Application of micro nutrient and fertilizers as per the crops those would be taken on the field.

Table 2.20 Erosion details

Cause	Type of erosion	Area affected (ha)	Run off(mm/ year)	Average soil loss (Tonnes/ ha/ year)
Water erosion				
a	Sheet	2900	16	8950
b	Rill	750	30	32850
c	Gully	50	48	33350
	Sub-Total	3700		75150
	Wind erosion	300	-----	8500
	Total for project	**4000**		**17150**

The need is:

- To check land degradation
- To reduce excessive biotic pressure by containing the number and controlling population 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
- 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.

CHAPTER - III Proposed Development Plan

A) Preparatory phase activities, Capacity Building Trainings and EPA

The IEC activities like Group meetings, door-to-door campaign, slogans and wall writings etc. are carried out in all the habitations. A series of meetings were conducted with GP members, community and discussed about the implementation of IWMP programme. The PRA exercises also conducted in each and every habitation involving all the stake holders. User groups are also formed to ensure beneficiaries effective and active participation since from beginning, planning and in execution so that the can use them on sustained basis and can maintain even after the completion of project.

Grama Sabhas were conducted for approval of entry point activities, for selecting the watershed committee and approval of DPR.

S. No	Name of the Gram Panchayat	Date on which Grama Sabha approved EPA
1	Gopalsar	22.02.2011

Details of Entry Point Activities under taken:

S. No.	Names of Village	Amount ear marked for EPA	Entry Point Activities planned			Esti mated cost	Exp. Incur red	Bal ance
			Solar lights	RHS	Drin king water			
1	Gopalsar	24.00 L	36 No.	6No.	3No.	24.00L	15.17L	8.83L
2	Ramdev Nagar							
3	Shahid Megh Singh Nagar							
4	Gangasar							
5	Jinjinyala							
6	Kanasar							

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	Gopalsar	13.02.2012
2	Ramdev Nagar	14.02.2012
3	Shahid Megh Singh Nagar	14.02.2012
4	Gangasar	15.02.2012
5	Jinjinyala	16.02.2012
6	Kanasar	17.02.2012

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 period covering all the households and primary data on demography, Land holdings, Employment status, Community activities etc. was collected as mentioned in chapter 2.

State remote sensing department 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 SRSAC 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 2 meter interval, slope map

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 ”A”). The GIS based intervention map, PRA based intervention map are annexed as Annexure “B”.

CHAPTER-V (YEAR WISE BREAK UP)

Name of the Project	**IWMP 23**				**Macro/Micro**	Cluster		**Geographical Area**	5000	Ha
G.P.	Gopalsar				**W C**	Gopalsar		**Effective Area**	4000	Ha
Block	Balesar				**Scheme/Batch**	IWMP		**Total Arable land**		Ha
District.	Jodhpur				**Date of Sanction**			**1. Irrigated**	245	Ha
Village Covered	1	NO.			**Date of Approval of the work plan**			**2. Unirrigated**	2720	Ha
Project outlay	600	LAC						**Total Nonarable land**		Ha
Total Area	4000	Hectare			**No. of SHG's formed**	13		**1. Pasture**	464	Ha
No. of WC's formed	1				**No. of UG's formed**	12		**2. Govt. / waste /OTHER LAND**	571	Ha

YEAR WISE WORK PLAN OF WATERSHED COMMITTEE GOPALSAR

S. N.	NAME OF ACTIVITY	TARGET			FIRST YEAR		SECOND YEAR		THIRD YEAR		FOURTH YEAR		FIFTH YEAR		SIXTH YEAR		TOTAL	
		QTY.	RATE	AMOUNT	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN
I.	**ADMINISTRATIVE COST**	**10%**	**60**															
1	WDT MANDEYA																	
2	W C SEC MANDEYA																	
3	OFFICE EXPENSES (JEEP/STATIONARY & OTHER)																	
	SUB TOTAL			**60.000**														**60.000**
II	**MONITORING**	**1%**	**6.000**	6.000														**6.000**
III	**EVALUATION**	**1%**	**6.000**	6.000														**6.000**
	TOTAL			**72.000**				**0.000**		**0.000**		**0.000**		**0.000**		**0.000**		**72.000**
	W/S PREPARATORY PHASE																	
IV	**ENTRY POINT ACTIVITY**	**4%**	**24.000**			**24.000**												
1	SOLAR LIGHT																	
2	WATER TANKA																	
3	REPAIRING OF TANKA																	
6	OTHER																	
	TOTAL			**24.000**		**24.000**		**0.000**		**0.000**		**0.000**		**0.000**		**0.000**		**24.000**
V	**TRAININGS & CAPACITY BUILDING**	**5%**	**30.000**															
1	**USERS GROUP**																	
	TOTAL			**30.000**														**30.000**
VI	**DETAILED PROJECT REPORT**	**1%**	**6.000**	**6.000**			**1**	**6.000**										**6.000**
	TOTAL		**6.000**	**6.000**			**1**	**6.000**										**6.000**
	TOTAL			**60.000**				**6.000**										**60.000**

S. N.	NAME OF ACTIVITY	TARGET			FIRST YEAR		SECOND YEAR		THIRD YEAR		FOURTH YEAR		FIFTH YEAR		SIXTH YEAR		TOTAL	
		QTY.	RATE	AMOUNT	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN
	W/S WORK PHASE																	
VII	**NRM**	**56%**	**336.000**					**36.000**		**90.000**		**90.000**		**72.000**		**48.000**		**336.000**
1	**ARABLE CONSERVATION WORK**																	
(i)	Earthen Bund	500	14020	70.100			100	14.020	100	14.020	200	28.040	50	7.010	50	7.010	500	70.100
(ii)	WHS (Tanka)	100	70000	70.000			20	14.000	60	42.000	10	7.000	8	5.600	2	1.400	100	70.000
(iii)	Waste weir	30	15100	4.530			1	0.151	18	2.718	2	0.302	8	1.208	1	0.151	30	4.530
(iv)	Gulley Control Structure Nallah Bunding	15	10000	1.500			0	0.000	5	0.500	3	0.300	5	0.500	2	0.200	15	1.500
(v)	Bank Stabilisation	8		28.800			0	0.000	3	6.417	2	14.000	2	0.000	1	8.383	8	28.800
2	**NON ARABLE CONSERVATION WORK**																	
(i)	V Ditch for PD	20	19200	3.840				0.000	10	1.920	10	1.920		0.000	0	0.000	20	3.840
(ii)	Staggered Contour Trenches for PD	20	12800	2.560					10	1.280	10	1.280		0.000	0	0.000	20	2.560
(iii)	Dug out Pond	12	50000	6.000			1	0.500	2	1.000	0	0.000	0	0.000	9	4.500	12	6.000
(iv)	WHS (Tanka)	8	70000	5.600			0	0.000	2	1.400	0	0.000	0	0.000	6	4.200	8	5.600
(v)	Nallah Bunding with ww	10	24600	2.460			0	0.000	3	0.738	0	0.000	0	0.000	7	1.722	10	2.460
3	**DRAINAGE LINE TREATMENT**																	
(i)	LSCD 'A'	18	22800	4.104			0	0.000	2	0.456	5	1.140	8	1.824	3	0.684	18	4.104
(ii)	LSCD 'B'	20	21100	4.220			0	0.000	4	0.844	5	1.055	8	1.688	3	0.633	20	4.220
(iii)	LSCD 'C'	18	19400	3.492			0	0.000	4	0.776	4	0.776	8	1.552	2	0.388	18	3.492
(iv)	LSCD 'D'	15	17600	2.640			0	0.000	3	0.528	4	0.704	6	1.056	2	0.352	15	2.640
(v)	LSCD 'E'	16	15900	2.544			0	0.000	3	0.477	5	0.795	6	0.954	2	0.318	16	2.544
(vi)	Gabion 'A'	10	124400	12.440			1	1.244	1	1.244	2	2.488	6	7.464	0	0.000	10	12.440
(vii)	Gabion 'B'	8	186500	14.920			1	1.865	1	1.865	2	3.730	4	7.460	0	0.000	8	14.920
(viii)	Gabion 'C'	4	361900	14.476			1	3.619	1	3.619	1	3.619	1	3.619	0	0.000	4	14.476
(ix)	Gabion 'D'	4	539300	21.572				0.000	1	5.393	1	5.393	2	10.786	0	0.000	4	21.572
(vi)	Masonry Check Dam	10	60000	60.202			0	0.601	1	2.805	2	17.458	3	21.279	4	18.059	10	60.202
TOTAL				**336.000**				**36.000**		**90.000**		**90.000**		**72.000**		**48.000**		**336.000**
VIII	**PRODUCTION SYSTEM & MICRO ENTERPRISES**	**10%**	**60.000**															
	For Arable Land																	
1	Arable bund	0	0	0.000				0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
2	Agro Forestry	4000	73	2.920			0	0.000	1000	0.730	1000	0.730	1000	0.730	1000	0.730	4000	2.920
3	Horticulture Plantation with fencing & Tanka	10	29900	2.990			0	0.000	5	1.495	2	0.598	1	0.299	2	0.598	10	2.990
4	Horticulture Plantation without fencing (Orchard)	60	10000	6.000				0.000	2	0.200	5	0.500	1	0.100	52	5.200	60	6.000
5	Vermi Compost	10	36000	3.600			0	0.000	1	0.360	1	0.360	1	0.360	7	2.520	10	3.600
6	Crop Demonstration	400	1000	4.000			0	0.000	100	1.000	100	1.000	100	1.000	100	1.000	400	4.000
7	Homested Kitchen Gerden	200	1000	2.000			0	0.000	50	0.500	50	0.500	50	0.500	50	0.500	200	2.000
8	Drip/Sprinkler Irrigation	12	80000	9.600														9.600
9	Medicinal Plants	20	3000	0.600			0	0.000	10	0.300	10	0.300	0	0.000	0	0.000	20	0.600

S. N.	NAME OF ACTIVITY	TARGET			FIRST YEAR		SECOND YEAR		THIRD YEAR		FOURTH YEAR		FIFTH YEAR		SIXTH YEAR		TOTAL	
		QTY.	RATE	AMOUNT	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN
	For Non-arable Land							0.000		0.000		0.000		0.000	0	0.000	0	0.000
1	Seed Sowing	320	2200.000	7.040				0.000	50	1.100	100	2.200	100	2.200	70	1.540	320	7.040
2	Plantation in PD	20	52620.000	10.524				0.000	20	10.524		0.000		0.000	0	0.000	20	10.524
3	Fencing of PD (by SW)	0		0.000				0.000	0	0.000		0.000		0.000	0	0.000	0	0.000
4	Fencing of PD (by DCB)	320		5.820				0.000	320	5.820		0.000		0.000	0	0.000	320	5.820
2	**LIVESTOCK MANAGEMENT**														0			
(i.)	Animal Health Camp	16	25000	4.000			2	0.500	2	0.500	3	0.750	3	0.750	6	1.500	16	4.000
(ii)	Vaccination			0.250				0.000		0.050		0.000		0.100		0.100	0	0.250
(iii)	Purchase of Bull / Pada	1	25000	0.250			1	0.250	0	0.000	0	0.000		0.000		0.000	1	0.250
(iv)	A I			0.406				0.000		0.000		0.050		0.200		0.156	0	0.406
TOTAL				**60.000**				**0.750**		**22.579**		**6.988**		**6.239**		**13.844**		**60.000**
1	**LIVELIHOOD**	**9%**		**54.000**														
	Revolving fund to SHG's (5 to 20 person per SHG) 60%	**130**	**0.250**	**32.400**			5	1.250	**17**	4.250	**20**	5.000	**20**	5.000	68.000	16.900	130	32.400
	Revolving fund to individual entrepreneurs 10%	**22**	**0.250**	**5.400**			**1**	0.250	**2**	0.500	**3**	0.750	**4**	1.000	12.000	2.900	22	5.400
	Grant in aid to entrepreneurs SHG/SHG's federation 30%	**9**	**2.000**	**16.200**			**1**	2.000	**1**	2.000	**1**	2.000	**1**	2.000	5.000	8.200	9	16.200
TOTAL				**54.000**				**3.500**		**6.750**		**7.750**		**8.000**		**28.000**		**54.000**
IX	**CONSOLIDATION PHASE**	**3%**	**18.000**	**18.000**										**10.800**		**7.200**		**18.000**
	GRAND TOTAL			**600.000**				**46.250**		**119.329**		**104.738**		**97.039**		**97.044**		**600.000**

CHAPTER-VII (YEAR WISE BREAK UP) (Through Convergence)

Name of the Project	**IWMP 23**		**Macro/Micro**	Cluster	**Geographical Area**	5000	Ha
G.P.	Gopalsar		**W C**	Gopalsar	**Effective Area**	4000	Ha
Block	Balesar		**Scheme/Batch**	IWMP	**Total Arable land**		Ha
District.	Jodhpur		**Date of Sanction**		**1. Irrigated**	245	Ha
Village Covered	1	NO.	**Date of Approval of the work plan**		**2. Unirrigated**	2720	Ha
Project outlay	600	LAC			**Total Nonarable land**		Ha
Total Area	4000	Hectare	**No. of SHG's formed**	13	**1. Pasture**	464	Ha
No. of WC's formed	1		**No. of UG's formed**	12	**2. Govt. / waste /OTHER LAND**	571	Ha

YEAR WISE WORK PLAN OF WATERSHED COMMITTEE GOPALSAR (Through Convergence)

S. N.	NAME OF ACTIVITY	TARGET			FIRST YEAR		SECOND YEAR		THIRD YEAR		FOURTH YEAR		FIFTH YEAR		SIXTH YEAR		TOTAL	
		QTY.	RATE	AMOUNT	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN
I.	**ADMINISTRATIVE COST**	**10%**	**0**															
1	WDT MANDEYA																	
2	W C SEC MANDEYA																	
3	OFFICE EXPENSES (JEEP/STATIONARY & OTHER)																	
	SUB TOTAL			**0.000**														**0.000**
II	**MONITORING**	**1%**	**0.000**	0.000														**0.000**
III	**EVALUATION**	**1%**	**0.000**	0.000														**0.000**
	TOTAL			**0.000**				**0.000**		**0.000**		**0.000**		**0.000**		**0.000**		**0.000**
	W/S PREPARATORY PHASE																	
IV	**ENTRY POINT ACTIVITY**	**4%**	**0.000**			**0.000**												
1	SOLAR LIGHT																	
2	WATER TANKA																	
3	REPAIRING OF TANKA																	
6	OTHER																	
	TOTAL			**0.000**		**0.000**		**0.000**		**0.000**		**0.000**		**0.000**		**0.000**		**0.000**
V	**TRAININGS & CAPACITY BUILDING**	**5%**	**0.000**															
1	**USERS GROUP**																	
	TOTAL			**0.000**														**0.000**
VI	**DETAILED PROJECT REPORT**	**1%**	**0.000**	**0.000**			**1**	**0.000**										**0.000**
	TOTAL		**0.000**	**0.000**			**1**	**0.000**										**0.000**
	TOTAL			**0.000**				**0.000**										**0.000**

S. N.	NAME OF ACTIVITY	TARGET			FIRST YEAR		SECOND YEAR		THIRD YEAR		FOURTH YEAR		FIFTH YEAR		SIXTH YEAR		TOTAL	
		QTY.	RATE	AMOUNT	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN
	W/S WORK PHASE																	
VII	**NRM**							**36.000**		**90.000**		**90.000**		**72.000**		**48.000**		**336.000**
1	**ARABLE CONSERVATION WORK**																	
(i)	Earthen Bund	400	14400	57.600			0	0.000	10	1.440	50	7.200	289	41.616	51	7.344	400	57.600
(ii)	WHS (Tanka)	40	90000	36.000			0	0.000	10	9.000	17	15.300	1	0.900	12	10.800	40	36.000
(iii)	Waste weir	20	15100	3.020			0	0.000	6	0.906	5	0.755	3	0.453	6	0.906	20	3.020
(iv)	Gulley Control Structure Nallah Bunding	5	20000	1.000			0	0.000	2	0.400	0	0.000	2	0.400	1	0.200	5	1.000
(v)	Khadin	1	455000	4.550			0	0.000	0	0.000	1	4.550	0	0.000	0	0.000	1	4.550
2	**NON ARABLE CONSERVATION WORK**																	
(i)	V Ditch for PD	10	17000	1.700				0.000	10	1.700	0	0.000		0.000	0	0.000	10	1.700
(ii)	Staggered Contour Trenches for PD	0	0	0.000					0	0.000	0	0.000		0.000	0	0.000	0	0.000
(iii)	Dug out Pond	10	100000	10.000			0	0.000	2	2.000	2	2.000		0.000	6	6.000	10	10.000
(iv)	WHS (Tanka)	10	90000	9.000			0	0.000	2	1.800	2	1.800	1	0.900	5	4.500	10	9.000
(v)	Nallah Bunding with ww	10	35100	3.510			0	0.000	3	1.053	3	1.053	2	0.702	2	0.702	10	3.510
3	**DRAINAGE LINE TREATMENT**																	
(i)	LSCD 'A'	0	25000	0.000			0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
(ii)	LSCD 'B'	0	23000	0.000			0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
(iii)	LSCD 'C'	0	21000	0.000			0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
(iv)	LSCD 'D'	0	19200	0.000			0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
(v)	LSCD 'E'	0	17300	0.000			0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
(vi)	Masonry Check Dam	1	0	4.230			0	0.000	0	0.000	0	0.000	0	0.000	0	4.230	0	4.230
	TOTAL			**130.610**				**0.000**		**18.299**		**32.658**		**44.971**		**34.682**		**130.610**
VIII	**PRODUCTION SYSTEM & MICRO ENTERPRISES**																	
	For Arable Land																	
1	Arable bund	0	0	0.000				0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
2	Agro Forestry	0	50	0.000			0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
3	Horticulture Plantation with fencing & Tanka	0	27700	0.000			0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
4	Horticulture Plantation without fencing (Orchard)	0	10000	0.000				0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
5	Vermi Compost	0	37000	0.000			0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
6	Crop Demonstration	0	1000	0.000			0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
7	Homested Kitchen Gerden	0	1000	0.000			0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
8	Medicinal Plants	0	1000	0.000			0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000

S. N.	NAME OF ACTIVITY	TARGET			FIRST YEAR		SECOND YEAR		THIRD YEAR		FOURTH YEAR		FIFTH YEAR		SIXTH YEAR		TOTAL	
		QTY.	RATE	AMOUNT	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN
	For Non-arable Land							0.000		0.000		0.000		0.000	0	0.000	0	0.000
1	V Ditch for PD	10	3100.000	0.310				0.000	10	0.310		0.000		0.000	0	0.000	10	0.310
2	Plantation in PD	10	75100.000	7.510				0.000	10	7.510		0.000		0.000	0	0.000	10	7.510
3	Fencing of PD (by SW)	0		0.000				0.000	0	0.000		0.000		0.000	0	0.000	0	0.000
4	Fencing of PD (by DCB)	10		2.810				0.000	10	2.810		0.000		0.000	0	0.000	10	2.810
2	**LIVESTOCK MANAGEMENT**														0			
(i.)	Animal Health Camp	10	25000	2.500			0	0.000	2	0.500	3	0.750	3	0.750	2	0.500	10	2.500
(ii)	Vaccination			0.500				0.000		0.050		0.000		0.050		0.400	0	0.500
(iii)	Purchase of Bull / Pada	0	25000	0.000			0	0.000	0	0.000	0	0.000		0.000		0.000	0	0.000
(iv)	A I			0.500				0.000		0.000		0.050		0.000		0.450	0	0.500
TOTAL				**14.130**				**0.000**		**11.180**		**0.800**		**0.800**		**1.350**		**14.130**
1	**LIVELIHOOD**																	
i	Revolving fund to SHG's (5 to 20 person per SHG) 60%																	
ii	Revolving fund to individual entrepreneurs 10%																	
iii	Grant in aid to entrepreneurs SHG/SHG's federation 30%			**0.000**			0	0.000		0.000		0.000		0.000	0	0.000	0	0.000
TOTAL				**0.000**				**0.000**		**0.000**		**0.000**		**0.000**		**0.000**		**0.000**
IX	**CONSOLIDATION PHASE**			**0.000**										**0.000**		**0.000**		**0.000**
	GRAND TOTAL			**144.740**				**0.000**		**29.479**		**33.458**		**45.771**		**36.032**		**144.740**

PROPOSED DEVELOPMENT PLAN
JODHPUR 23

S. N.	NAME OF ACTIVITY			Gram Panchayat GOPALSAR				
		Unit	RATE	QTY.	Amt from project fund	Convergence fund	Total Cost	Beneficiary contribution
I.	**ADMINISTRATIVE COST**			**10%**	0.00	0.00	0.00	
1	WDT MANDEYA				0.00	0.00	0.00	
2	W C SEC MANDEYA				0.00	0.00	0.00	
3	OFFICE EXPENSES (JEEP/STATIONARY & OTHER)				0.00	0.00	0.00	
	SUB TOTAL				60.00	0.00	60.00	
II	**MONITORING**			**1%**	6.00	0.00	6.00	
III	**EVALUATION**			**1%**	6.00	0.00	6.00	
	TOTAL				72.00	0.00	72.00	
	W/S PREPARATORY PHASE				0.00	0.00	0.00	
IV	**ENTRY POINT ACTIVITY**			**4%**	24.00	24.00	48.00	
1	SOLAR LIGHT				0.00	0.00	0.00	
2	WATER TANKA				0.00	0.00	0.00	
3	REPAIRING OF TANKA				0.00	0.00	0.00	
6	OTHER				0.00	0.00	0.00	
	TOTAL				24.00	0.00	24.00	
V	**TRAININGS & CAPACITY BUILDING**			**5%**	0.00	0.00	0.00	
1	**USERS GROUP**				0.00	0.00	0.00	
	TOTAL				30.00	0.00	30.00	
VI	**DETAILED PROJECT REPORT**			**1%**	6.00	0.00	6.00	
	TOTAL				6.00	0.00	6.00	
	TOTAL				60.00	0.00	60.00	

	W/S WORK PHASE				0.00	0.00	0.00	
VII	**NRM**			**56%**	0.00	0.00	0.00	
1	**ARABLE CONSERVATION WORK**				0.00	0.00	0.00	
(i)	Earthen Bund	Ha.	14020	**500**	70.10	57.60	127.70	10.22
(ii)	WHS (Tanka)	No.	70000	**100**	70.00	36.00	106.00	8.48
(iii)	Waste weir	No.	15100	**30**	4.53	3.02	7.55	0.60
(iv)	Gulley Control Structure Nallah Bunding	No.	10000	**15**	1.50	1.00	2.50	0.20
(v)	Khadin	No.	0	**8**	28.80	4.55	33.35	2.67
2	**NON ARABLE CONSERVATION WORK**							
(i)	V Ditch for PD	Ha.	19200	**20**	3.84	1.70	5.54	0.44
(ii)	Staggered Contour Trenches for PD	Ha.	12800	**20**	2.56	0.00	2.56	0.20
(iii)	Dug out Pond	No.	50000	**12**	6.00	10.00	16.00	1.28
(iv)	WHS (Tanka)	No.	70000	**8**	5.60	9.00	14.60	1.17
(v)	Nallah Bunding with ww	No.	24600	**10**	2.46	3.51	5.97	0.48
3	**DRAINAGE LINE TREATMENT**							
(i)	LSCD 'A'	No.	22800	**18**	4.10	0.00	4.10	0.33
(ii)	LSCD 'B'	No.	21100	**20**	4.22	0.00	4.22	0.34
(iii)	LSCD 'C'	No.	19400	**18**	3.49	0.00	3.49	0.28
(iv)	LSCD 'D'	No.	17600	**15**	2.64	0.00	2.64	0.21
(v)	LSCD 'E'	No.	15900	**16**	2.54	0.00	2.54	0.20
(vi)	Masonry Check Dam	No.	60000	**10**	60.20	4.23	64.43	5.15
	TOTAL		0	**0**	336.00	130.61	466.61	0.00
VIII	**PRODUCTION SYSTEM & MICRO ENTERPRISES**		60	**10%**	0.00	0.00	0.00	0.00
	For Arable Land			**0**	0.00	0.00	0.00	0.00
1	Arable bund	No.	0	**0**	0.00	0.00	0.00	0.00
2	Agro Forestry	No.	73	**4000**	2.92	0.00	2.92	**0.00**
3	Horticulture Plantation with fencing & Tanka	No.	29900	**10**	2.99	0.00	2.99	
4	Horticulture Plantation without fencing (Orchard)	No.	10000	**60**	6.00	0.00	6.00	
5	Vermi Compost	No.	36000	**10**	3.60	0.00	3.60	0.47
6	Crop Demonstration	No.	1000	**400**	4.00	0.00	4.00	0.52
7	Homested Kitchen Gerden	No.	1000	**200**	2.00	0.00	2.00	0.26
8	Medicinal Plants	No.	3000	**20**	0.60	0.00	0.60	0.08
	For Non-arable Land							
1	V Ditch for PD	Ha.	2200	**320**	7.04	0.31	7.35	0.00
2	Plantation in PD	Ha.	52620	**20**	10.52	7.51	18.03	0.00
3	Fencing of PD (by SW)	Ha.	0	**0**	0.00	0.00	0.00	0.00

4	Fencing of PD (by DCB)	Ha.	0	**320**	5.82	2.81	8.63	
2	**LIVESTOCK MANAGEMENT**			**0**	0.00	0.00	0.00	0.00
(i.)	Animal Health Camp	No.	25000	**16**	4.00	2.50	6.50	0.00
(ii)	Vaccination	No.	0	**0**	0.25	0.50	0.75	0.00
(iii)	Purchase of Bull / Pada	No.	25000	**1**	0.25	0.00	0.25	0.00
(iv)	A I		0	**0**	0.41	0.50	0.91	**0.00**
TOTAL					60.00	14.13	74.13	
					0.00	0.00	0.00	0.00
1	**LIVELIHOOD**			**9%**	54.00	0.00	54.00	0.00
i	Revolving fund to SHG's (5 to 20 person per SHG) 60%				32.40	0.00	32.40	0.00
ii	Revolving fund to individual entrepreneurs 10%				5.40	0.00	5.40	0.00
iii	Grant in aid to entrepreneurs SHG/SHG's federation 30%				16.20	0.00	16.20	0.00
TOTAL					54.00	0.00	54.00	0.00
IX	**CONSOLIDATION PHASE**			**3%**	18.00	0.00	18.00	0.00
	GRAND TOTAL				600.00	144.74	744.74	33.58

VEGETATIVE EARTHEN BUND IN ARABLE LAND

Abstract of Cost

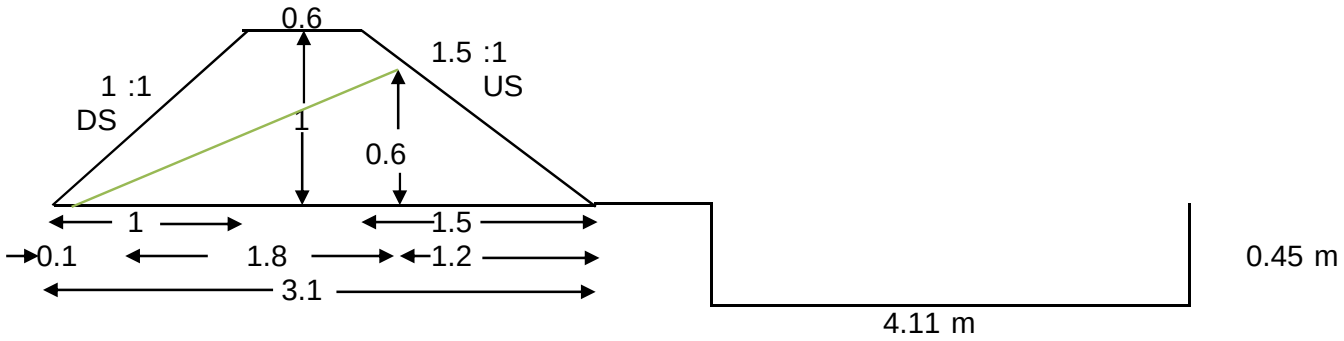
Total Area 100 ha
No. of Waste Weir 10

Name of work	Conservation Measure	Production Measure	Total Cost
Earthen Bund	1402000	28000	1430000
Waste Weir	151000	0	151000.00
	1553000	28000	**1581000.00**
Say			15.81 Lakh

Conservation Measure			1553000.00
Production Measure			28000.00

CROSS-SECTION OF VEGETATIVE BUND IN ARABLE LAND

Top width Based on seepage line check
Slope of seepage line 3:1



$$CS = \frac{(Tw+Bw)\ *Ht}{2}$$

CS = 1.85 Sq.m.

Average Cross section	1.85 Sq.m.
Length	1.00 m.
Quantity	1.85 Cu.m.

DESIGN OF VEGETATIVE BUND IN ARABLE LAND

V.I = 0.305 (XS+Y)

0.305(0.8 x 2+1.0)

V.I = 0.549

V.I	Vertical interval	
X=	Rain Fall Factor	0.8
Y=	Factor due to soil infiltration & Crop cover	1
S=	Percent slope	1

$$He = \frac{(Re \times VI)^{1/2}}{(50)^{1/2}}$$

He= 0.6199 Say 0.60 m

He	Depth of impounding	
Re	24Hour rainfall excess in Cms. for 10 year recurrence interval	35
V.I	Vertical interval	0.549

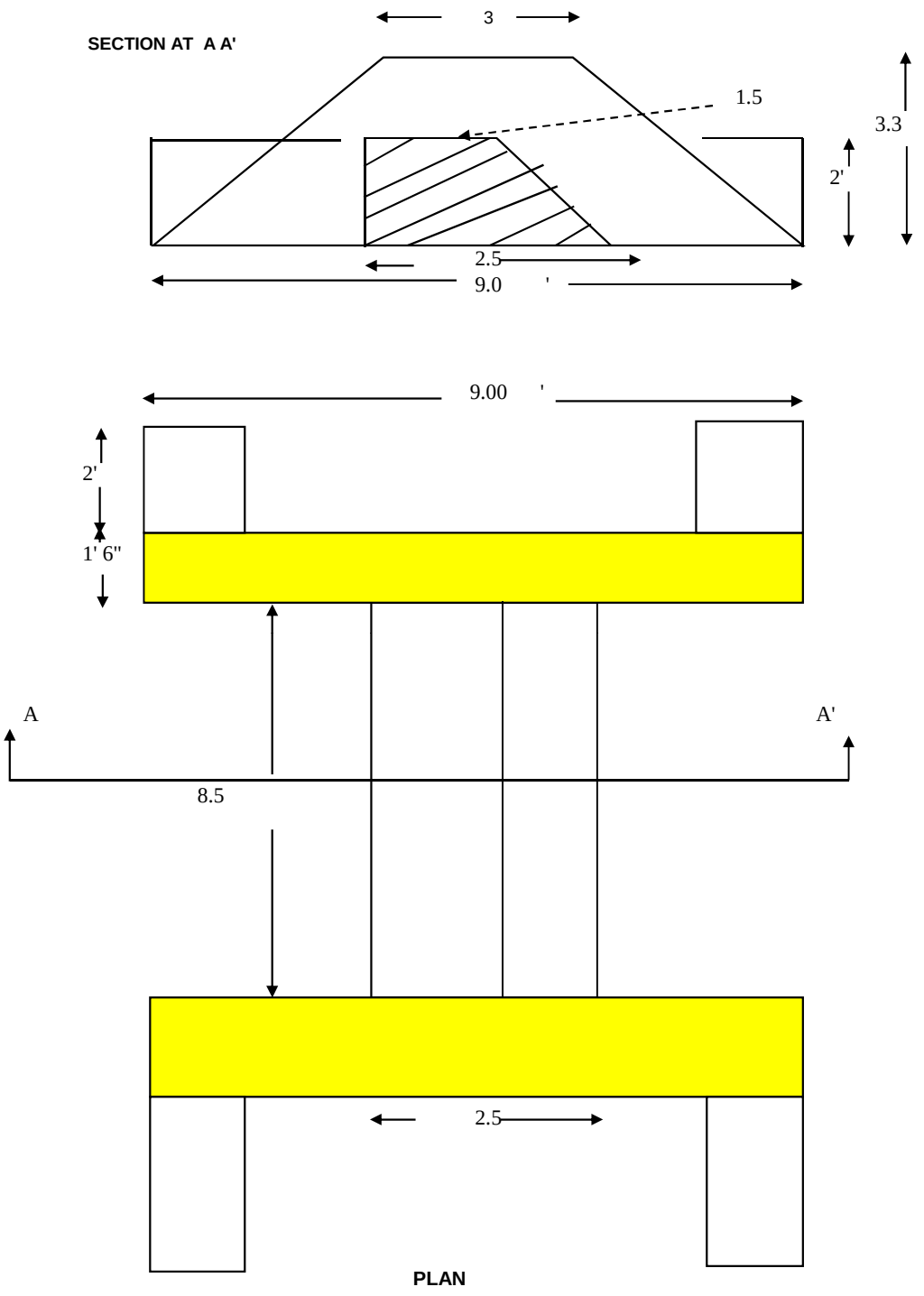
Total Height of Bund	=	0.6	+ 0.4	1.00	m
Top width of Bund	=			0.6	m
Bottom width of Bund	=			3.1	m

$$\text{Cross section of bund} = \frac{(\text{Top width of Bund} + \text{Bottom width of Bund})}{2} \times \text{Height}$$

$$\text{X Section} = \frac{(0.60+3.1)}{2} \times 1.00$$

X Section= 1.85 Sq.m.

Drawing of Waste Weir



Construction of Waste Weir

Construction of Waste Weir

DETAILS OF WORK AND ABSTRACT OF COST

S. No.	Item	No.	Detail			Quantity		Unit	Rate		Amount	
			L	B	D/H	Feet	Metre		Lab	Total	Lab	Total
1	Excavation in hard soil ordinary muram or earth mixed with bajri and kankar or boulder dry or moist & disposal of excavated material within initial lead of 50 m and lift of 1.5 m including dressing etc. complete. Item 2B	2	9.5	2	2	76						
		2	2	2	2	16						
		1	8	2.5	2	40						
						0						
						0						
						132	3.7356	cum.	100.00	100.00	373.56	373.56
2	Cement concrete well mixed in cement mortar (1 : 4 : 8) laid in position complete including curing.Aggregate size upto 50 mm, HB;	2	9.5	2	0.5	19						
		2	2	2	0.5	4						
		1	8	2.5	0.5	10						
						0						
						0						
	Item11C(A)					33	0.9339	cum.	358.10	1903.00	334.43	1777.21
3	Random rubble stone masonary in cement sand mortar (1 : 6)For foundation	2	9.5	1.75	1.5	49.875						
		2	2	1.75	1.5	10.5						
		1	8	2.5	1.5	30						
						0						
	Item24A(I)					90.375	2.55761	cum.	525.30	1914.00	1343.51	4895.27
4	Random rubble stone masonary in cement sand mortar (1 : 6) For superstructure	2	6	1.5	3.25	58.5						
		4	2	1.5	2	24						
		1	8.5	2	1	17						
	9 3											
	Item24A(I)+25 |					99.5	2.81585	cum.	698.30	2090.00	1966.31	5885.13
5	Dry Stone kharanja (15 to 30 cm)	1	8.5	3	0.3	7.65						
						0						
	Item 101A					7.65	0.71069	cum.	134.10	325.00	95.3029	230.973

6	Cement plaster including smooth finishing in cement mortar (1:6) 25 mm thick.	2	13	1.5	1	39						
		4	2	1.5	1	12						
		1	8.5	1.5	1	12.75						
		1	8.5	1	1	8.5						
	Item 67A					72.25	6.71203	sqm.	86.40	167.00	579.919	1120.91
7	Ruled pointing in cement mortar (1:3)	2	6	3.25	1	39						
		4	2	2	1	16	1.4864	sqm.				
		1	8.5	1.25	1	10.625						
	Item 70A					65.625	6.09656	sqm.	51.10	62.00	311.534	377.987
											5004.57	14661

	Quantity	Rate	Amount
Skilled labour	5.96	325	1937
Unskilled labour	14.64	135	1976
Water			1091
			5005

Cement 2

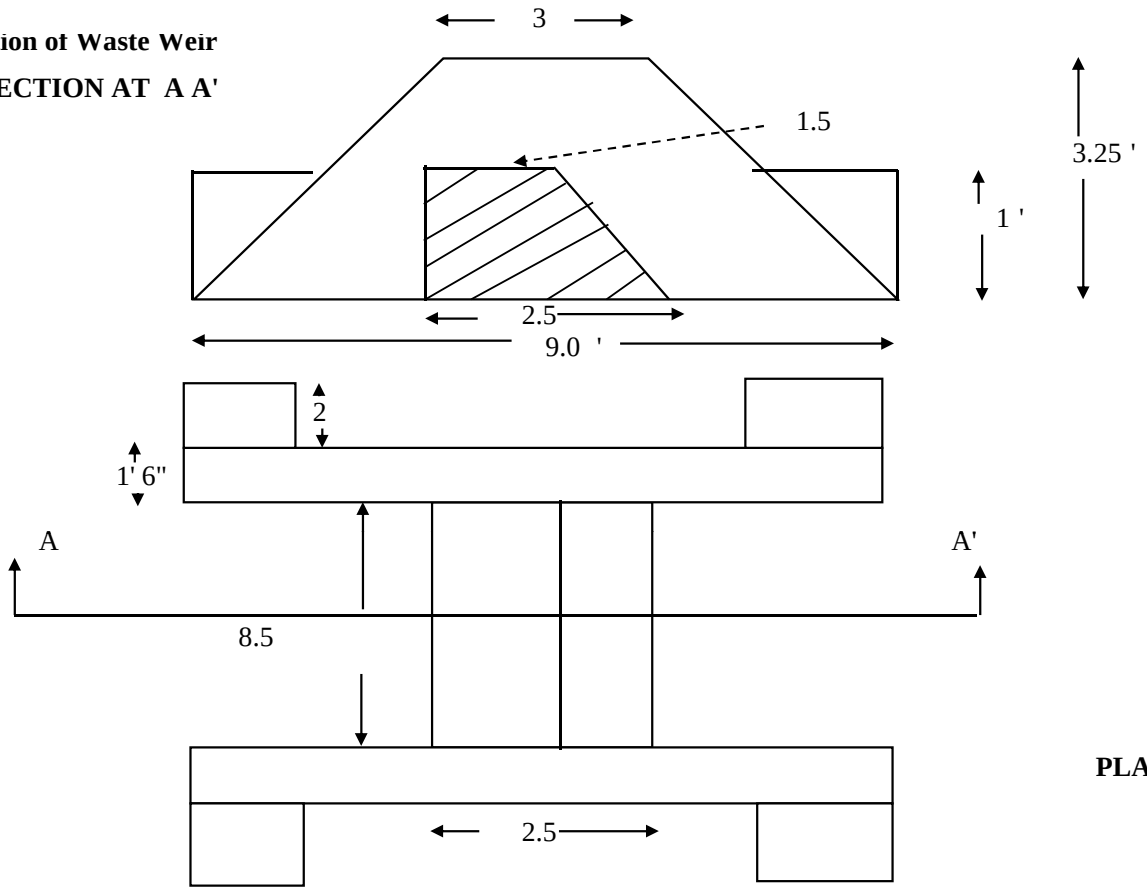
Cement 2

Amount		
Labour	A	5004.57
Material	B	9656.47
Total	C	14661
Add contingency		390
Total (C+D)		15051
	Say	**15100**

S. No	Material	Unit	Quantity	Rate	Amount		
1	Sand	Cu.m.	2.272080	380	863.39		
2	Stone Agg of 40 mm nominal size	Cu.m.	0.8	350	294.179		
3	Stone	Cu.m.	5.4	575	3089.74		
4	Cement	Kg	635.58	220	2796.56	12.712	Bag
					7248.55		
	Other				2407.92		
			Total		9656.47		

Construction of Waste Weir

CROSS SECTION AT A A'



PLAN

ESTIMATE OF VEGETATIVE BUND IN ARABLE LAND

Estimate of One ha.

Length per ha. = 80 mtr

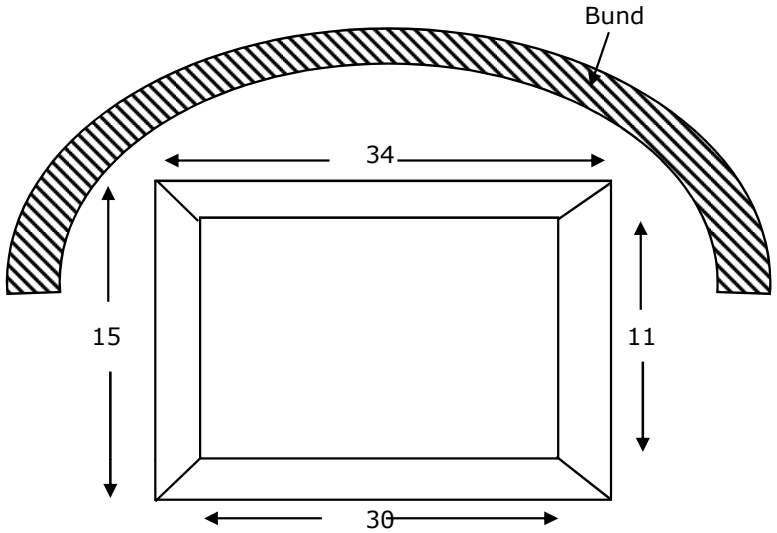
S. no	Name of work	Item no.	No	Length	Width (TW+BW) /2	Hight	Qty	Unit	Rate	Amount
1	Earth work Excavation for making of bund, laying in layers of 15 cm, breaking of clods, sorting of grass pebbles, disposal of excavated material up to 1.5 mt Hight and lead up to 50 m including dressing and compaction	135 ब	1	80	1.85	1	148.00	Cum	92.00	13616.00
2	Sowing of seeds on the constructed bund in three rows	114	3	80			240	meter	0.60	144.00
3	Supply of Stylo/Dhaman seed @ 4 gm / m in three rows	CAZRI Rate	3	80			0.96	Kg	150.00	144.00
										13904.0
									Add 3% contingency	417.12
									Total	14321.1
									Say	**14300.0**

Conservation Measure	14020
Production Measure	280.0

Estimate of Dug out Pond

Outer Length	34	mtr
Inner Length	30	mtr
Outer Width	15	mtr
Inner Width	11	mtr
Depth	1	mtr

Upper Area 510
Lower Area 330



S. no.	Name of work	Item no.	No	Upper Area	Lower Area	Depth	Qty	Unit	Rate	Amount
1	Layout for Pond		2	90	1	1	180.00	Cu.m.	0.70	126.00
2	Excavation of earth in dry or moist and disposal of excavated material within initial lead of 50 m and lift 1.5 m									
2.1	In hard soil	2(ब)	1	510	330	1	420.00	Cu.m.	100.00	42000.00
3	Stone Pitching 15-23 cm thick including supply of stones	124	1	52	1	0.2	10.40	Cu.m.	721.00	7498.40
										49624.40
								Add 3% contingency		1488.7
								Total		51113.1
								Say		**50000.0**

OFFICE OF THE ASSISTANT ENGINEER, IWMP, PANCHAYAT SAMITI-BALESAR

Detailed & Abstract of Estimate for Gabion

Length 10mtr

S. No.	Item	Item Ref.	Unit	Details of Measurement						
				No.	L	B	H	Qty.	Rate	Amount
1	डाग बेलिंग 7.5 से 10 से. मी. गहरा	178(b)	Mtr	2	10			20	1.18	23.60
2	जगंल की सफाई, साधारण वनस्पति तथा झाड़ियों को काटने सहित।	82	Sqm	1	10	2		20	1.50	30.00
3	नींव, खाई, परनाला में 1.5 गहराई तक मिट्टी की खुदाई करना, तल को कूटना, पानी डालना, बगल को संवारना, खुदी मिट्टी को बाहर निकालना, नींव भरने के बाद खाली स्थानों को पुनः मिट्टी से भरना तथा बची हुई मिट्टी को 50 मीटर की दूरी तक निस्तारण करना। सख्त / चिकनी / कंकर मिट्टी में	2(b)	Cum	1/3	10	2	0.9	6	100.00	600.00
4	नींव तथा कुर्सी में पत्थर की वे रद्धा–ढोका चिनाई बिना मसाले मे सूखे पत्थर में।	21(b)		1	10	2	0.9	18		
				1	6	2	0.45	5.4		
				1	6	1.5	0.45	4.05		
				1	6	1	0.6	3.6		
				2	2	1	2	8		
				2x1/2	2	1	2	4		
			Cum					43.05	1186.00	51057.30
	Sub Total									**51710.90**
5	Providing and fixing of wire crates 5 mm dia mesh size 15 x 15 cm	PWD BSR	Sqm	2	10	2.9		58		
				2	6	1.95		23.4		
				2	6	1.6		19.2		
				4	2	3		24		
				2	2	2.75		11		
								135.6		
	जोडे ओवरलेपिंग के लिए 10 प्रतिशत							13.56		
								149.16	65.00	**9695.40**
										61406.30
	जोडे कंटिन्जेन्सी 3 प्रतिशत									1551.33
	Grand Total									**124364**

Or say Rs. 124400.00

OFFICE OF THE ASSISTANT ENGINEER, IWMP, PANCHAYAT SAMITI-BALESAR

Detailed & Abstract of Estimate for Gabion

Length 15mtr

S. No.	Item	Item Ref.	Unit	Details of Measurement						
				No.	L	B	H	Qty.	Rate	Amount
1	डाग बेलिंग 7.5 से 10 से. मी. गहरा	178(b)	Mtr	2	15			30	1.18	35.40
2	जगंल की सफाई, साधारण वनस्पति तथा झाड़ियों को काटने सहित।	82	Sqm	1	15	2		30	1.50	45.00
3	नींव, खाई, परनाला में 1.5 गहराई तक मिट्टी की खुदाई करना, तल को कूटना, पानी डालना, बगल को संवारना, खुदी मिट्टी को बाहर निकालना, नींव भरने के बाद खाली स्थानों को पुनः मिट्टी से भरना तथा बची हुई मिट्टी को 50 मीटर की दूरी तक निस्तारण करना। सख्त / चिकनी / कंकर मिट्टी में	2(b)	Cum	1/3	15	2	0.9	9	100.00	900.00
4	नींव तथा कुर्सी में पत्थर की वे रद्धा–ढोका चिनाई बिना मसाले मे सूखे पत्थर में।	21(b)		1	15	2	0.9	27		
				1	9	2	0.45	8.1		
				1	9	1.5	0.45	6.075		
				1	9	1	0.6	5.4		
				2	3	1	2	12		
				2x1/2	3	1	2	6		
			Cum					64.575	1186.00	76585.95
	Sub Total									**77566.35**
5	Providing and fixing of wire crates 5 mm dia mesh size 15 x 15 cm	PWD BSR	Sqm	2	15	2.9		87		
				2	9	1.95		35.1		
				2	9	1.6		28.8		
				4	3	3		36		
				2	3	2.75		16.5		
								203.4		
	जोडे ओवरलेपिंग के लिए 10 प्रतिशत							20.34		
								223.74	65.00	**14543.10**
										92109.45
	जोडे कंटिन्जेन्सी 3 प्रतिशत									2326.99
	Grand Total									**186546**

Or say Rs. 186500.00

OFFICE OF THE ASSISTANT ENGINEER, IWMP, PANCHAYAT SAMITI-BALESAR

Detailed & Abstract of Estimate for Gabion

Length 20mtr

S. No.	Item	Item Ref.	Unit	Details of Measurement						
				No.	L	B	H	Qty.	Rate	Amount
1	डाग बेलिंग 7.5 से 10 से. मी. गहरा	178(b)	Mtr	2	15			30	1.18	35.40
2	जगंल की सफाई, साधारण वनस्पति तथा झाड़ियों को काटने सहित।	82	Sqm	1	15	2		30	1.50	45.00
3	नींव, खाई, परनाला में 1.5 गहराई तक मिट्टी की खुदाई करना, तल को कूटना, पानी डालना, बगल को संवारना, खुदी मिट्टी को बाहर निकालना, नींव भरने के बाद खाली स्थानों को पुनः मिट्टी से भरना तथा बची हुई मिट्टी को 50 मीटर की दूरी तक निस्तारण करना। सख्त / चिकनी / कंकर मिट्टी में	2(b)	Cum	1/3	20	3	0.9	18	100.00	1800.00
4	नींव तथा कुर्सी में पत्थर की वे रद्धा–ढोका चिनाई बिना मसाले मे सूखे पत्थर में।	21(b)		1	20	3	0.9	54		
				1	10	2.5	0.45	11.25		
				1	10	2	0.45	9		
				1	10	1.5	0.6	9		
				2	5	1.5	2	30		
				2x1/2	5	1.5	2	15		
			Cum					128.25	1186.00	152104.50
	Sub Total									**153984.9**
5	Providing and fixing of wire crates 5 mm dia mesh size 15 x 15 cm	PWD BSR	Sqm	2	20	3.9		156		
				2	10	2.95		59		
				2	10	2.1		42		
				4	5	3		60		
				2	5	2.75		27.5		
								344.5		
	जोडे ओवरलेपिंग के लिए 10 प्रतिशत							34.45		
								378.95	65.00	**24631.75**
										178616.7
	जोडे कंटिन्जेन्सी 3 प्रतिशत									4619.55
	Grand Total									**361853**

Or say Rs. 361900.00

OFFICE OF THE ASSISTANT ENGINEER, IWMP, PANCHAYAT SAMITI-BALESAR

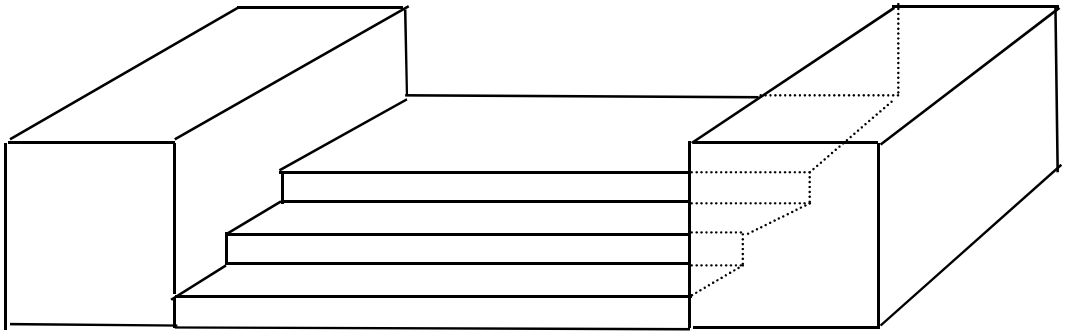
Detailed & Abstract of Estimate for Gabion

Length 30mtr

S. No.	Item	Item Ref.	Unit	Details of Measurement						
				No.	L	B	H	Qty.	Rate	Amount
1	डाग बेलिंग 7.5 से 10 से. मी. गहरा	178(b)	Mtr	2	30			60	1.18	70.80
2	जगंल की सफाई, साधारण वनस्पति तथा झाड़ियों को काटने सहित।	82	Sqm	1	30	2		60	1.50	90.00
3	नींव, खाई, परनाला में 1.5 गहराई तक मिट्टी की खुदाई करना, तल को कूटना, पानी डालना, बगल को संवारना, खुदी मिट्टी को बाहर निकालना, नींव भरने के बाद खाली स्थानों को पुनः मिट्टी से भरना तथा बची हुई मिट्टी को 50 मीटर की दूरी तक निस्तारण करना। सख्त / चिकनी / कंकर मिट्टी में	2(b)	Cum	1/3	30	3	0.9	27	100.00	2700.00
4	नींव तथा कुर्सी में पत्थर की वे रद्धा–ढोका चिनाई बिना मसाले मे सूखे पत्थर में।	21(b)		1	30	3	0.9	81		
				1	20	2.5	0.45	22.5		
				1	20	2	0.45	18		
				1	20	1.5	0.6	18		
				2	5	1.5	2	30		
				2x1/2	5	1.5	2	15		
			Cum					184.5	1186.00	218817.00
	Sub Total									**221677.8**
5	Providing and fixing of wire crates 5 mm dia mesh size 15 x 15 cm	PWD BSR	Sqm	2	30	3.9		234		
				2	30	2.95		177		
				2	30	2.1		126		
				4	5	3		60		
				2	5	2.75		27.5		
								624.5		
	जोडे ओवरलेपिंग के लिए 10 प्रतिशत							62.45		
								686.95	65.00	**44651.75**
										266329.6
	जोडे कंटिन्जेन्सी 3 प्रतिशत									6650.33
	Grand Total									**539309**

Or say Rs. 539300.00

DESIGN OF LOOSE STONE CHECK DAM (LSCD)



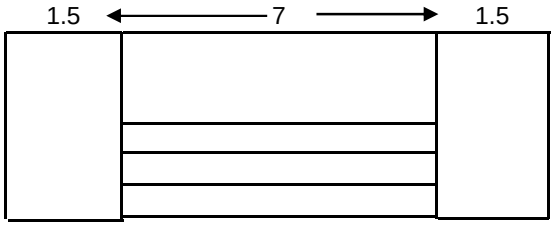
Length of Head wall	No of Lscd	Per Unit Cost	Total Cost
7	25	22800	570000
6	35	21100	738500
5	25	19400	485000
4	20	17600	352000
3	24	15900	381600
	129		2527100

Lacs 25.271

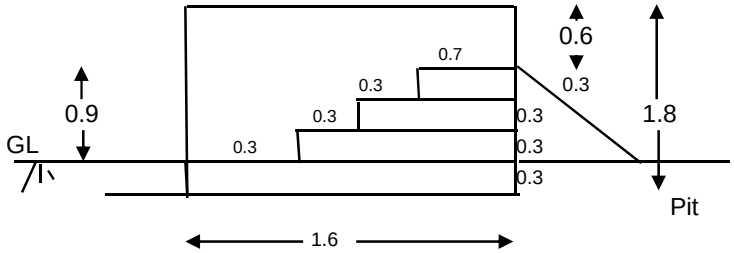
ESTIMATE OF LOOSE STONE CHECK DAM (LSCD)

Head Wall Length = 7 m

Plan



Elevation

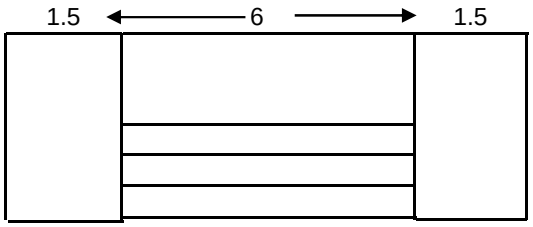


S. no.	Name of work	Item no.	No	Length	Width	Height	Qty	rate	amount
1	Earth work Excavation in hard soil up to 1.5 mt Height and deposited excavated material lead op to 150	2B	1	7.0	1.6	0.3	3.4	100.0	336.0
		2B	2	1.5	1.6	0.3	1.4	100.0	144.0
2	Dry stone masonry	21B	1	7.0	1.6	0.3	3.4		
			1	7.0	1.3	0.3	2.7		
			1	7.0	1.0	0.3	2.1		
			1	7.0	0.7	0.3	1.5		
			1	1.5	1.6	1.8	4.3		
			1	1.5	1.6	1.8	4.3		
							18.3	1186.0	21703.8
									22183.8
				Add 3% Contingency					**665.5**
						Total			**22849.3**
						Say			**22800.0**

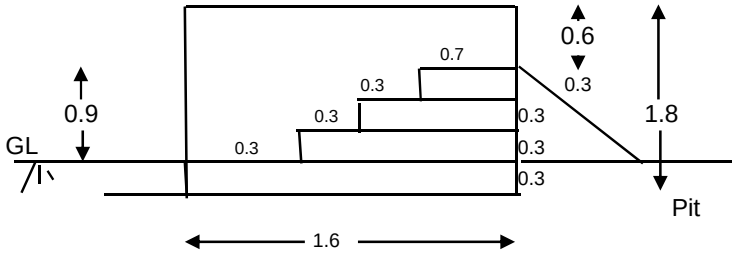
ESTIMATE OF LOOSE STONE CHECK DAM (LSCD)

Head Wall Length 6 m

Plan



Elevation

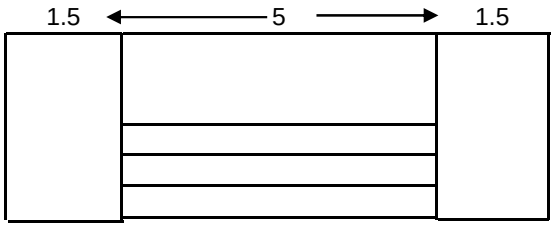


S. no.	Name of work	Item no.	No	Length	Width	Height	Qty	rate	amount
1	Earth work Excavation in hard soil up to 1.5 mt Height and deposited excavated material lead op to 150	2B	1	6.0	1.6	0.3	2.9	100.0	288.0
		2B	2	1.5	1.6	0.3	1.4	100.0	144.0
2	Dry stone masonry	21B	1	6.0	1.6	0.3	2.9		
			1	6.0	1.3	0.3	2.3		
			1	6.0	1.0	0.3	1.8		
			1	6.0	0.7	0.3	1.3		
			1	1.5	1.6	1.8	4.3		
			1	1.5	1.6	1.8	4.3		
							16.9	1186.0	20067.1
									20499.1
						Add 3% Contingency			615.0
						Total			**21114.1**
						Say			**21100.0**

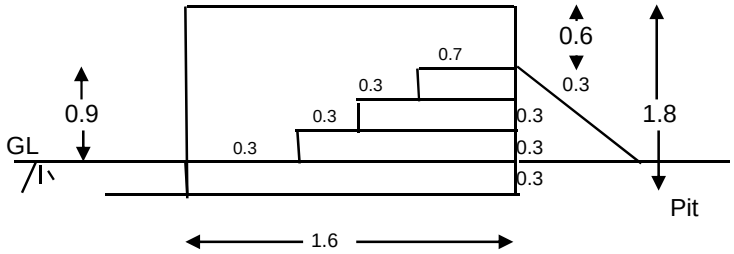
ESTIMATE OF LOOSE STONE CHECK DAM (LSCD)

Head Wall Length = 5 m

Plan



Elevation

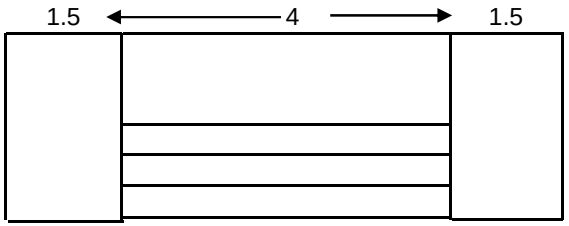


S. no.	Name of work	Item no.	No	Length	Width	Height	Qty	rate	amount
1	Earth work Excavation in hard soil up to 1.5 mt Height and deposited excavated material lead op to 150	2B	1	5.0	1.6	0.3	2.4	100.0	240.0
		2B	2	1.5	1.6	0.3	1.4	100.0	144.0
2	Dry stone masonry	21B	1	5.0	1.6	0.3	2.4		
			1	5.0	1.3	0.3	2.0		
			1	5.0	1.0	0.3	1.5		
			1	5.0	0.7	0.3	1.1		
			1	1.5	1.6	1.8	4.3		
			1	1.5	1.6	1.8	4.3		
							15.5	1186.0	18430.4
									18814.4
						Add 3% Contingency			564.4
						Total			**19378.9**
						Say			**19400.0**

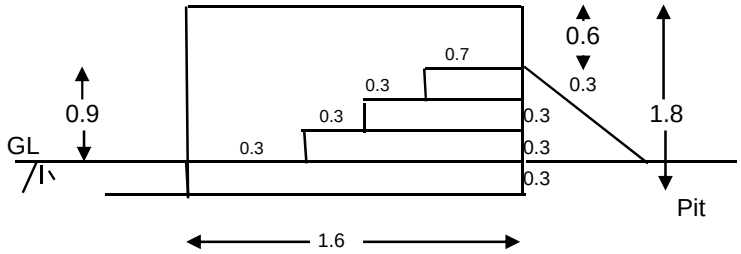
ESTIMATE OF LOOSE STONE CHECK DAM (LSCD)

Head Wall Length = 4 m

Plan



Elevation

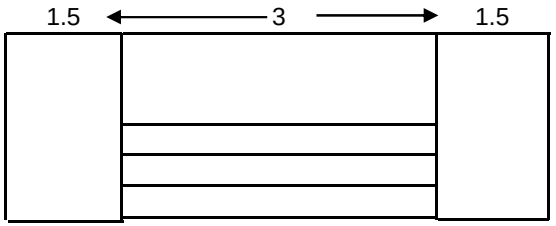


S. no.	Name of work	Item no.	No	Length	Width	Height	Qty	rate	amount
1	Earth work Excavation in hard soil up to 1.5 mt Height and deposited excavated material lead op to 150	2B	1	4.0	1.6	0.3	1.9	100.0	192.0
		2B	2	1.5	1.6	0.3	1.4	100.0	144.0
2	Dry stone masonry	21B	1	4.0	1.6	0.3	1.9		
			1	4.0	1.3	0.3	1.6		
			1	4.0	1.0	0.3	1.2		
			1	4.0	0.7	0.3	0.8		
			1	1.5	1.6	1.8	4.3		
			1	1.5	1.6	1.8	4.3		
							14.2	1186.0	16793.8
									17129.8
						Add 3% Contingency			513.9
								Total	**17643.7**
								Say	**17600.0**

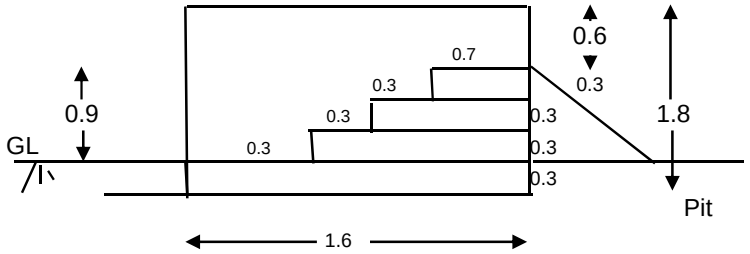
ESTIMATE OF LOOSE STONE CHECK DAM (LSCD)

Head Wall Length = 3 m

Plan



Elevation



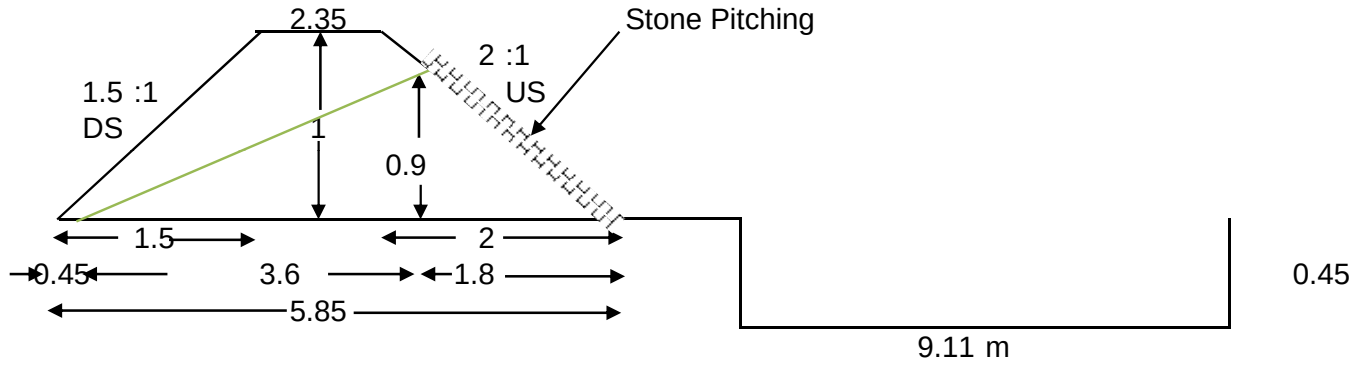
S. no.	Name of work	Item no.	No	Length	Width	Height	Qty	rate	amount
1	Earth work Excavation in hard soil up to 1.5 mt Height and deposited excavated material lead op to 150	2ब	1	3.0	1.6	0.3	1.4	100.0	144.0
		2ब	2	1.5	1.6	0.3	1.4	100.0	144.0
2	Dry stone masonry	21ब	1	3.0	1.6	0.3	1.4		
			1	3.0	1.3	0.3	1.2		
			1	3.0	1.0	0.3	0.9		
			1	3.0	0.7	0.3	0.6		
			1	1.5	1.6	1.8	4.3		
			1	1.5	1.6	1.8	4.3		
							12.8	1186.0	15157.1
									15445.1
						Add 3% Contingency			463.4
						Total			**15908.4**
						Say			**15900.0**

MODEL ESTIMATE OF NALLAH BUNDING

S. no.	Name of work	Item no.	No	X Sec	Length	Depth	Qty	Unit	Rate	Amount
1	Excavation of earth in dry or moist and disposal of excavated material within initial lead of 50 m and lift 1.5 m									
1.1	In H.S.	119(c)	1	4.10	20	1	82.00	Cu.m.	92.00	7544.00
2	Stone Pitching 15-23 cm thick including supply of stones	124	1	0.8	20	0.21	3.36	Cu.m.	721.00	2422.56
										9966.56
								Add 3% contingency		299.0
								Total		10265.6
								Say		**10000.0**

CROSS-SECTION OF NALLAH BUNDING

Top width Based on seepage line check
Slope of seepage line 4:1



$$CS = \frac{(Tw+Bw) * Ht}{2}$$

CS = 4.1 Sq.m.

Average Cross section 4.10 Sq.m.

Silvi Pasture Development

Abstract of Cost

V-Ditches

DCB Fencing

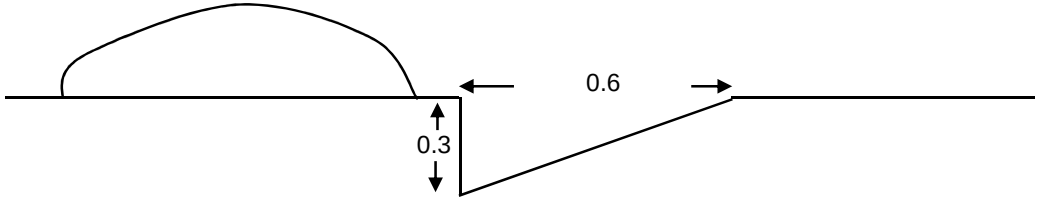
Area = 10 ha.

Name of work	Conservation Measure	Production Measure	Total Cost
V. Ditch	192000	22000	214000.00
Plantation	0	526200	526200.00
Fencing DCB	0	291500	291500.00
Total	192000	839700	**1031700.00**
Say			10.32 Lakh

Estimate for V.Ditch in Pasture

Area	Length	Width	Interval	No of row	Length
Ha	mtr	mtr	mtr		mtr
10	1000	100	6	167	16667

Dhaman require on V-ditch =0.002 kg/m 33 Kg
Spacing 5 mtr
Dhaman require between v-ditches =10 kg/ha 100 Kg



S. no.	Name of work	Item no.	No	Length	Width	Height	Qty	Unit	Rate	Amount
1	Jungal clearance	107	1	500	50	1	25000	Sqm	1.4	35000
2	Excavation in hard soil or earth mixed with bajri and kankar or boulder dry or moist & disposal of excavated material within initial lead of 30 m and lift of 1.5 m including dressing etc. complete.	2(B)	0.5	16667	0.60	0.3	1500.00	Cum	100	150000.0
			Kg							
3	Making of balls of grass seed(1:1:2:2) 1 grass seed :1 FYM : 2 sand : 2 clay	3/1/9 forest	133				133.00	Per 6 kg material	17	376.8
4	Sowing of balls of grass seed by dibbling method at 30 cm spacing	3/2/9 forest	133				133	Per 6 kg material	109	2416.2
5	Cost of seed			CAZARI Jodhpur			133	Kg	150	19950
										207743.0
								Add 3% contingency		6232.3
	Conservation Measure	192000						Total		213975.3

Production Measure	22000.0

Say **214000.0**

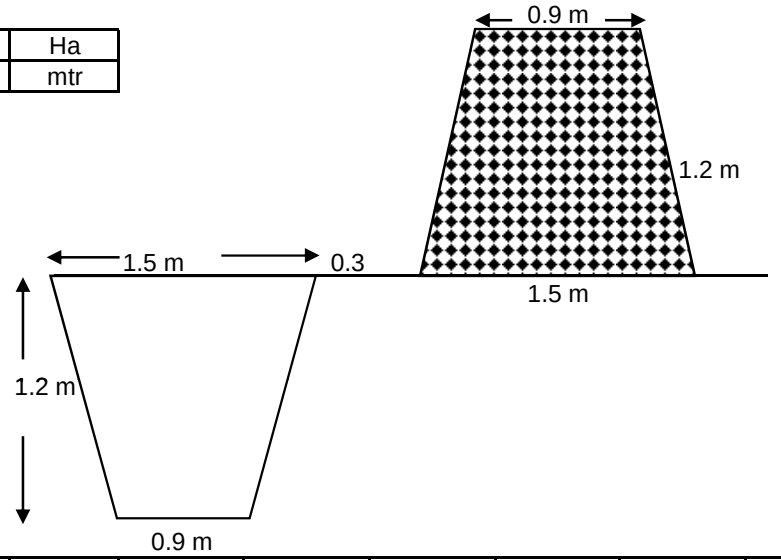
Model estimate of Plantation Work in Pasture land

Plant to pant Spacing	4 m	**No of plant**	**4166.67**
Row to row Spacing	6 m	**Gap filling 20%**	**833.3333**
Available Area	**10** Ha	**Total no of Plants**	**5000**

S.No	Description	Item no	Total		Length	Width	Height	Qty	Unit	Rate	Amount	(Amount for 10 ha.)
			Year	No./Year								
1	Digging of pit(kankar boulder soil)	112 ('C)		1	0.45	0.45	0.45	1	No	14.6	14.60	73000
2	Cost of Plant	As per forest						1	No.	5	5.00	25000
3	Planting of plant	113(A)						1	No.	4	4.00	20000
4	Making thavla	117(A)	2	1				1	No.	2.6	5.20	26000
5	Weeding & Hoeing	116	3	1				3	No.	1.3	3.90	19500
6	Insecticide treatment	Market rate	3		0.03 ml			0	Ltr	300	2.70	13500
7	Watering of plants	115	3	5				15	no	1.9	28.50	142500
8	Transportation of water 5 Km	108	3	5				225	/1000Ltr	42.2	9.50	47475
9	Watch & ward	Minimum wages	3	12				36	Month	3240	23	116640
10	Transportation of plants from nursery to planting site	LS	1	1				1		1	1.00	5000
11	Pruning of plants	forest bsr	1	1				1.00	/ plants	0.89	0.89	4450
12	Protection of plants from frost / loo using grass or other locally available material by making jhonpa of 0.6 m		1	1				1.00	/ plants	3.56	3.56	17800
	TOTAL											**510865**
									Contingency 3%			15326
									Grand total			**526191**
											Say	**526200.0**

Estimate of Ditch Cum Bund Fencing

Area	10	Ha
Length	1580	mtr



S. no.	Name of work	Item no.	No	Length	Width	Hight	Qty	Unit	Rate	Amount
1	Layout for DCB		2	1580	1	1	3160.00	Cu.m.	0.70	2212.00
2	Excavation of earth in dry or moist and disposal of excavated material within initial lead of 50 m and lift 1.5 m									
2.1	In hard soil 50%	2(2)	1	790	1.2	1.2	1137.60	Cu.m.	100.00	113760.00
2.2	In Disintegrated rock 50%	2(3)	1	790	1.2	1.2	1137.60	Cu.m.	146.00	166089.60
3	Sowing of seed on ridge	114	1	790	1	1	790.00	Rm	0.60	474.00
	Cost of seeds	LS					5.00	Kg	50.00	250.00
										282785.60
								Add 3% contingency		8483.6
								Total		291519.2
								Say		**291500.0**

Silvi Pasture Development

Abstract of Cost

Staggered Contour Trenches

DCB Fencing

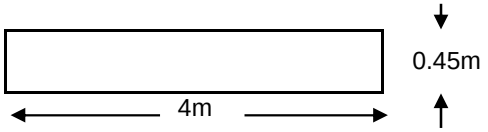
Area = 10 ha.

Name of work	Conservation Measure	Production Measure	Total Cost
Staggered Contour Trenches	128500	9000	137500.00
Agro Forestry	0	363800	363800.00
Fencing DCB	0	291500	291500.00
Total	128500	664300	**792800.00**
Say			7.93 Lakh

Model Estimate

Staggered Contour Trenches

Particulars	Value	Unit
Length	4	m
Width	0.45	m
Depth	0.45	m
No. of trenches per ha	125	no.



Area = **10.00 ha**

S.no	Activity	Item	No	Length	Width	Hight	Qty	Unit	Rate	Amount
1	Layout for Trenches		1	5000			5000	meter	0.7	3500
2	Earth work Excavation in hard soil up to 1.5 mt Hight and deposited excavated meterial lead op to 50 m									
2.1	In hard soil 50%	2(2)	1	2500	0.45	0.45	506.25	cum.	100	50625
2.2	In Disintegrated rock 50%	2(3)	1	2500	0.45	0.45	506.25	cum.	146	73912.5
3	Sowing of seeds on the constructed ridge in two rows		2	5000			10000	meter	0.6	6000
4	Supply of Stylo/Dhaman seed @ 4 gm / m in two lines		2	5000			20	Kg	150	3000
										133537.5
									Add 3% contengecy	4006.125
										137543.63
									Say	**137500.0**

Conservation Measure	128500
Production Measure	9000

Model estimate of Plantation Work in Pasture land

Available Area = **10 Ha** **No of plant** **2500**

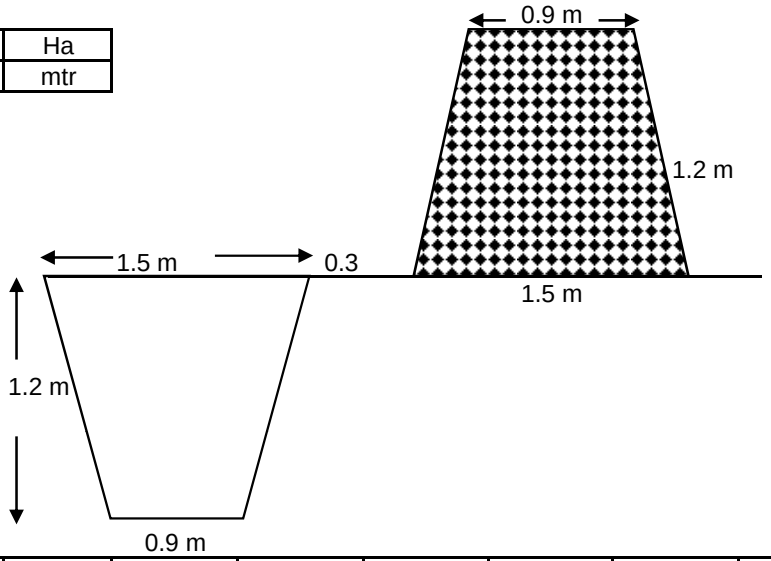
No.of Staggered Contour Trenches = **1250** **Gap filling 20%** **500**

Total no of Plants **3000**

S.No	Description	Item no	Total		Length	Width	Height	Qty	Unit	Rate	Amount	(Amount for 10 ha.)
			Year	No./Year								
1	Digging of pit(kankar boulder soil)	112 ('C)		1	0.45	0.45	0.45	1	No	14.6	14.60	43800
2	Cost of Plant	As per forest						1	No.	5	5.00	15000
3	Planting of plant	113(A)						1	No.	4	4.00	12000
4	Making thavla	117(A)	2	1				2	No.	2.6	5.20	15600
5	Weeding & Hoeing	116	3	1				3	No.	1.3	3.90	11700
6	Insecticide treatment	Market rate	3		0.03 ml			0.009	Ltr	300	2.70	8100
7	Watering of plants	115	3	5				15	no	1.9	28.50	85500
8	Transportation of water 5 Km	108	3	5				225	/1000Ltr	42.2	9.50	28485
9	Watch & ward	Minimum wages	3	12				36	Month	3240	39	116640
10	Transportation of plants from nursery to planting site	LS	1	1				1		1	1.00	3000
11	Pruning of plants	forest bsr	1	1				1.00	/ plants	0.89	0.89	2670
12	Protection of plants from frost / loo using		1	1				1.00	/ plants	3.56	3.56	10680
	TOTAL											**353175**
									Contingency 3%			10595
									Grand total			**363770**
											Say	**363800.0**

Estimate of Ditch Cum Bund Fencing

Area	10	Ha
Length	1580	mtr



S. no.	Name of work	Item no.	No	Length	Width	Hight	Qty	Unit	Rate	Amount
1	Layout for DCB		2	1580	1	1	3160.00	Cu.m.	0.70	2212.00
2	Excavation of earth in dry or moist and disposal of excavated material within initial lead of 50 m and lift 1.5 m									
2.1	In hard soil 50%	2(2)	1	790	1.2	1.2	1137.60	Cu.m.	100.00	113760.00
2.2	In Disintegrated rock 50%	2(3)	1	790	1.2	1.2	1137.60	Cu.m.	146.00	166089.60
3	Sowing of seed on ridge	114	1	790	1	1	790.00	Rm	0.60	474.00
	Cost of seeds	LS					5.00	Kg	50.00	250.00
										282785.60
								Add 3% contingency		8483.6
								Total		291519.2
								Say		**291500.0**

Silvi Pasture Development

Abstract of Cost

Staggered Contour Trenches

Stone Wall Fencing

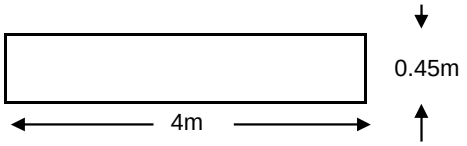
Area = 10 ha.

Name of work	Conservation Measure	Production Measure	Total Cost
Staggered Contour Trenches	128400.072	9000	137400.00
Plantation	0	363800	363800.00
Stone wall Fencing	0	451100	451100.00
Total	128400.072	823899.928	**952300.00**
Say			9.52 Lakh

Model Estimate

Staggered Contour Trenches

Particulars	Value	Unit
Length	4	m
Width	0.45	m
Depth	0.45	m
No. of trenches per ha	125	no.
Dhaman require between SCT =7 kg/ha	60	Kg
Dhaman require on SCT =0.002 kg/m	10	Kg



Area = **10.00 ha**

S.no	Activity	Item	No	Length	Width	Hight	Qty	Unit	Rate	Amount
1	Layout for Trenches		1	5000			5000	meter	0.7	3500
2	Earth work Excavation in hard soil up to 1.5 mt Hight and deposited excavated meterial lead op to 50 m									
2.1	In hard soil 50%	2(2)	1	2500	0.45	0.45	506.25	cum.	100	50625
2.2	In Disintegrated rock 50%	2(3)	1	2500	0.45	0.45	506.25	cum.	146	73912.5
			Kg							
3	Making of balls of grass seed(1:1:2:2) 1 grass seed :1 FYM : 2 sand : 2 clay	3/1/9 forest	70				70	Per 6 kg material	17	1190
4	Sowing of balls of grass seed by dibbling method at 30 cm spacing	3/2/9 forest	70				70	Per 6 kg material	109	7630
										133357.5
								Add 3% contengecy		4000.725
										137358
								Say		**137400**

Conservation Measure	128400
Production Measure	9000

Silvi Pasture Development Work

Abstract of Cost

V-Ditches Area = 10 ha.

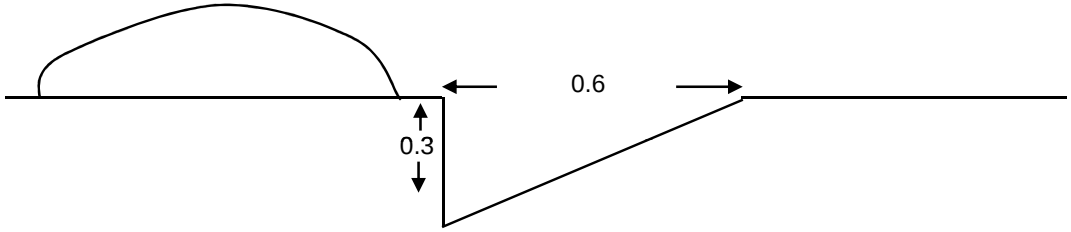
Stone wall Fencing

Name of work	Conservation Measure	Production Measure	Total Cost
V. Ditch	224700	2200	226900.00
Agro Forestry	0	526200	526200.00
Fencing of Stone wall	0	451100	451100.00
Total	224700	979500	**1204200.00**
Say			12.04 Lakh

Estimate of V.Ditch in Pasture Development

Area	Length	Width	Interval	No of row	Length
Ha	mtr	mtr	mtr		mtr
10	1000	100	6	167	16667

Dhaman require on V-ditch =0.002 kg/m	33	Kg
Spacing	5	mtr
Dhaman require between v-ditches =10 kg/ha	100	Kg



S. no.	Name of work	Item no.	No	Length	Width	Hight	Qty	Unit	Rate	Amount
1	Jungal clearance	83	1	500	50	1	25000	Sqm	1.9	47500
2	Excavation in hard soil or earth mixed with bajri and kankar or boulder dry or moist & disposal of excavated material within initial lead of 30 m and lift of 1.5 m including dressing etc. complete.	2(B)	0.5	16667	0.60	0.3	1500.00	Cum	100	150000.0
			Kg							
3	Making of balls of grass seed(1:1:2:2) 1 grass seed :1 FYM : 2 sand : 2 clay	3/1/9 forest	133				133.00	Per 6 kg material	17	376.8

4	Sowing of balls of grass seed by dibbling method at 30 cm spacing	3/2/9 forest	133				133	Per 6 kg material	109	2416.2
5	Cost of seed		CAZARI Jodhpur				133	Kg	150	19950

	220243.0
Add 3% contingency	6607.3
Total	226850.3
Say	**226900.0**

Conservation Measure	224700
Production Measure	2200

Model estimate of Plantation Work in Pasture land

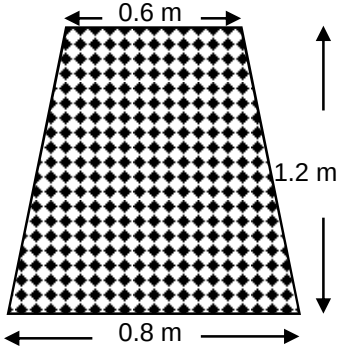
Plant to pant Spacing	4 m	**No of plant**	**4166.67**
Row to row Spacing	6 m	**Gap filling 20%**	**833.33**
Available Area	**10** Ha	**Total no of Plants**	**5000**

S.No	Description	Item no	Total		Length	Width	Height	Qty	Unit	Rate	Amount	(Amount for 10 ha.)
			Year	No./Year								
1	Digging of pit(kankar boulder soil)	112 ('C)		1	0.45	0.45	0.45	1	No	14.6	14.60	73000.00
2	Cost of Plant	As per forest						1	No.	5	5.00	25000.00
3	Planting of plant	113(A)						1	No.	4	4.00	20000.00
4	Making thavla	117(A)	2	1				1	No.	2.6	5.20	26000.00
5	Weeding & Hoeing	116	3	1				3	No.	1.3	3.90	19500.00
6	Insecticide treatment	Market rate	3		0.03 ml			0	Ltr	300	2.70	13500.00
7	Watering of plants	115	3	5				15	no	1.9	28.50	142500.00
8	Transportation of water 5 Km	108	3	5				225	/1000Ltr	42.2	9.50	47475.00
9	Watch & ward	Minimum wages	3	12				36	Month	3240	23	116640.00

10	Transportation of plants from nursery to planting site	LS	1	1				1		1	1.00	5000.00
11	Pruning of plants	forest bsr	1	1				1.00	/ plants	0.89	0.89	4450.00
12	Protection of plants from frost / loo using grass or other locally available material by making jhonpa of 0.6 m dia. Of plant height and covering the plant.		1	1				1.00	/ plants	3.56	3.56	17800.00
	TOTAL											510865.00
									Contingency 3%			15325.95
									Grand total			526190.95
											Say	**526200**

Estimate of Stone Wall Fencing

Area	10	Ha
Length	1580	mtr



S. no.	Name of work	Item no.	No	Length	Width	Hight	Qty	Unit	Rate	Amount
1	Stone wall fencing Random rubble loose stone fencing	111	1	1580	0.7	1.2	1327.2	Cu.m.	330	437976

	437976.0
Add 3% contingency	13139.3
Total	451115.3
Say	**451100**

Abstract of cost of Tanka with Plantation work

For General & OBC Category

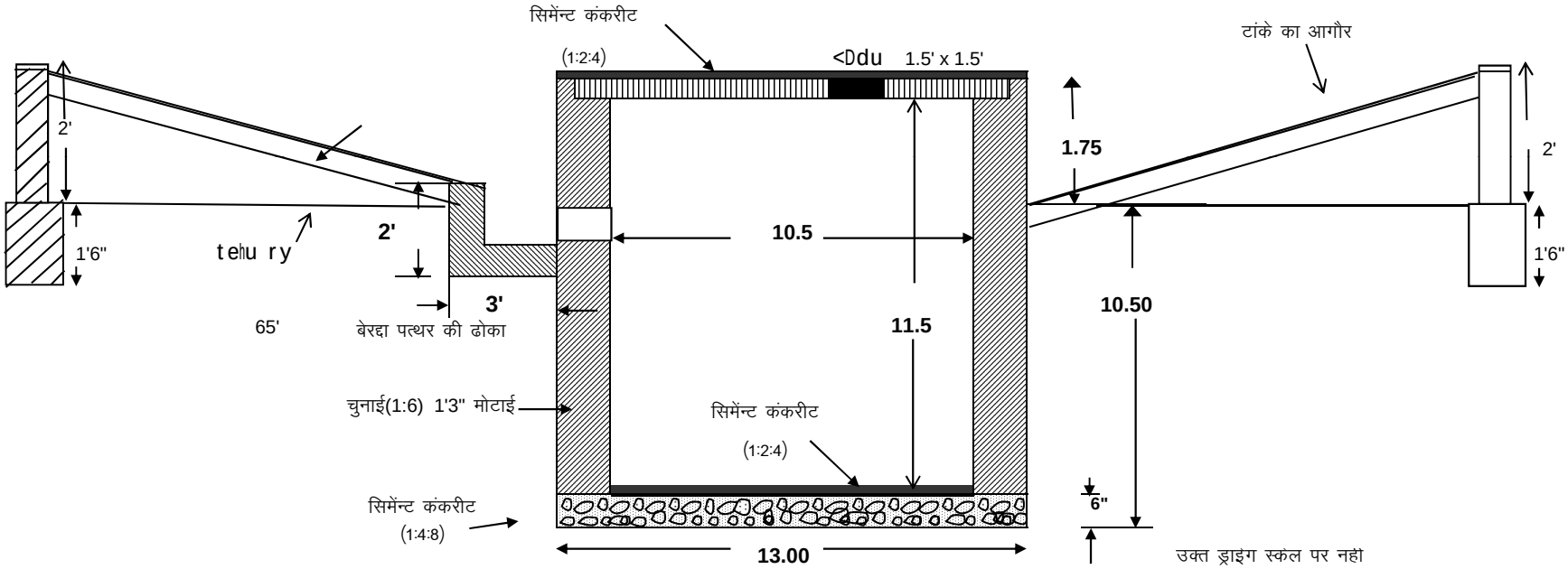
Sr. no	Name of work	Estimated cost	Project 90%	Contribution 10%	Total	Measures
1	Cost of tanka	70000	63000	7000	70000	Conservation measure for water harvesting
			60%	**40%**		
2	Cost of Horticulture plantation	10400	6240	4160	10400	Production
3	Barbed Wire Fencing	19500	11700	7800	19500	Production
	Total 2+3	29900	17940	11960	29900	
	Total Cost of tanka unit	**99900**	**80940**	**18960**	**99900**	
	No. of Farmers					
	1	***99900***	***80940***	***18960***	***99900***	

For SC/ST/ BPL

Sr. no	Name of work	Estimated cost	Project 95%	Contribution 5%	Total	Measures
1	Cost of tanka	70000.00	66500	3500	70000	Conservation measure for water harvesting
			80%	**20%**		
2	Cost of Horticulture plantation	10400	8320	2080	10400	Production
3	Barbed Wire Fencing	19500	15600	3900	19500	Production
	Total 2+3	29900	23920	5980	29900	
	Total Cost of tanka unit	**99900.00**	**90420.00**	**9480.00**	**99900.00**	
	No. of Farmers					
	1	***99900***	***90420***	***9480***	***99900***	
				Total Cost	***199800***	

1	**Conservation Measure**	**140000**
2	**Production Measure**	**59800**
a	**From project**	**41860**
b	**From Contribution**	**17940**
3	**Total Contribution**	**28440.00**

Vkd dh Mkbx


सिमेंन्ट कंकरीट
(1:2:4)
<Ddu 1.5' x 1.5'
टांके का आगौर
2'
1'6"
tehu ry
2'
3'
65'
बेरद्दा पत्थर की ढोका
10.5
1.75
2'
1'6"
10.50
11.5
चुनाई(1:6) 1'3" मोटाई
सिमेंन्ट कंकरीट
(1:2:4)
सिमेंन्ट कंकरीट
(1:4:8)
6"
13.00
उक्त ड्राइंग स्कंल पर नहों

Model estimate Barbed wire fencing

Area 0.17 Ha

Length 164.9 mtr. Spacing 4 m
Say 165 mtr.
No of post As per length= Length/spacing 41.00
Additional post require after every 10 Posts 4
45.00

Length of Post 7.5 Feet 2.286 m
Width of post 1 Feet 0.3 m
Quantity of one post 0.6858 Sq.m

S.No	Description	Item no.	No	Length of single wire	Total length	Kg/mtr	Quantity	Unit	Rate	Amount
1	Supply of barbed wire fencing 14 gauge		5	165	825	0.08	66	Kg	46	3036
2	Supply of Jodhpur stone slab for post		45				30.86	Sq.m	450	13887.45
3	Rehandling of posts to pit	LS	45				45.00	No	15	675.00
4	fixing of post in 45 cm. deep pit	2B	45	0.45	0.3	0.45	2.73	Cum	100	273.38
5	Cost of binding wire						6	Kg	45	270.00
6	Stretching of barbed wire and fixing it with the post with thin wire	5.5/forest					825	mtr	0.92	759
7	interlacing the barbed wire with locally available bushy material at a spacing of 15 cms	5.6/forest			45		45	mtr	5.48	246.6
										18900.83

Add 3% contingency 567.02
19467.85
Say **19500.0**

Design of Water Harvesting Structure (tanka)

Collection of Water = Area * rainfall* 80%	Capacity as per Structural design
Catchment Area = $\pi/4 * D^2$ D= 11.70	Cum= $\pi/4 * D_t^2$ * Hight
= 107.46 Sqm	D_t= Inner diameter of tanka
Rainfall = 0.3 Mtr	D_t= 3.2 3.2004
	Hight = 3.20
Collection of water = 25.79 Cum	
	25.7261 Cum
Capacity Cum*1000	Capacity Cum*1000
= 25790	= 25726.1

Hence rainfall on catchment area can fillup the tanka by water

Production

Total capacity of tanka	25726.1 Ltr
Use of water for drinking purpose 40%	10290.4 Ltr
Available water for plantation 60%	15435.7 Ltr
One watering require	15 Ltr
No. of watering per Year	20 No
Total Ltr require per plant per year	300 Ltr

No of plant can survive = Available water for Plantation/ water require per plant per year

= 51.45

say 50 plant

Model estimate of Horticulture Plantation in Arable land

Area- **0.17** **Ha**

No. of Plants - **50**

S. No	Description	Item No.	Total		Length	Width	Height	Qty	Unit	Rate	Amount	Amount for 50 Plants
			Year	No./Year								
1	Earth work Excavation in hard soil dry or moist and disposal of excavated meterial within initial lift of 1.5 mt height and lead of 50 metre.Digging of pit	2(B)		1	0.6	0.6	0.6	1.00	No.	16.1	16.10	805.00
2	Apply of manure											
	(A) Compost Khad							5.00	kg.	0.4	2.00	100.00
	(B) S.S.P. (16%)							1.00	kg.	4	4.00	200.00
	(C) Endosulphan (4%)				100 gm			0.10	kg.	30	3.00	150.00
3	Plant cost	LS		1				1.00	No	20	20.00	1000.00
4	Planting of plant	113(B)						1.00	No.	3.2	3.20	160.00
5	Watering of plants (15 litre)	115	3	21				63.00	No.	1.9	119.70	5985.00
6	Making of Thawla atleast 50 cm radius	117(B)	2	1				2.00	No.	1.9	3.80	190.00
7	Weeding & hoeing of plants 45 cm radius and 15 cm deep	116	3	1				3.00	No.	1.3	3.90	195.00

S. No	Description	Item No.	Total		Length	Width	Height	Qty	Unit	Rate	Amount	Amount for 50 Plants
			Year	No./Year								
8	Spray											
	(A) Endosulphan (35 ec)		3	0.01	Ltr			0.03	Ltr.	262	7.86	393.00
	(B) Sulpher		3	0.02	Kg			0.06		200	12.00	600.00
9	Transportation of Plant from Jodhpur 70 km including loading and unloading	LS						1.00	no	2	3.00	150.00
10	Protection of plants from frost / loo using grass or other locally available material by making jhonpa of 0.6 m dia. Of plant height and covering the plant.	Forest bsr	1	1				1.00	no	3.56	3.56	178.00
	TOTAL										**195.56**	**10106.00**
										Add 3% contingency		**303.18**
										Total		**10409.2**
											say	**10400.0**

RWHS Model Estimate

S. No	Item Ref. No.	Item	No.	L	B/Radius R1	B/Radius R2	H	Qty.	Unit	Total Rate	Labour Cost	Material Cost	Total Cost
1	2	नींव, खाई, परनाला में 1.5 गहराई तक मिट्टी की खुदाई करना, तल को कूटना, पानी डालना, बगल को संवारना, खुदी मिट्टी को बाहर निकालना, नींव भरने के बाद खाली स्थानों को पुनः मिट्टी से भरना तथा बची हुई मिट्टी को 50 मीटर की दूरी तक निस्तारण करना।											
a	a	साधारण / मुलायम मिट्टी में	1	0.785	4	0	0.75	9.42					
		होदी	1	0.6	0.6		0.45	0.16		82	786	0	786
								9.58	**cum**				
b	b	सख्त / चिकनी / कंकर मिट्टी में	1	0.785	4	0	2.45	**30.77**	**cum**	**100**	**3077**	**0**	**3077**
							3.65						
2	11 C (a)	सीमेन्ट कांक्रीट नींव या फर्श में 40 मि. मी. नामीय माप की पत्थर गिट्टी / ईट गिट्टी, सीमेन्ट – रेत मसाला में 1 सीमेन्ट : 4 रेत : 8 गिट्टी अनुपात में मिलाकर डालना तथा कुटाई करना, तराई समेत।	1	0.785	4	0	0.15	1.88					
		पत्थर की गिट्टी के साथ						**1.88**	**cum**	**1903**	**675**	**2911**	**3585**
3	24 A (a)	नींव तथा कुर्सी मे पत्थर की वे रद्धा–ढ़ोका सीमेंट–बजरी 1 : 3, 1 : 6 या 1 : 8 मसाले मे, मय बगल की झिरी बन्द करना तथा तराई आदि।	1	0.785	3.96	3.2	3.45	14.74					
		सीमेंट बजरी 1:6											
		Ded. Wire Mesh jali	4	0.3	0.15		0.38	0.068					
							Net Masonry	**14.67**	**cum**	**1914**	**7706**	**20371**	**28076**
4	31	पत्थर के सिरदल (लिटंल) की आपूर्ति कर, चिनाई मे उपयोग की गई मसाले मे उसे लगाना।	2	3.96	0.38	0	0.15	0.45	**sqm**	**4304**	**599**	**1344**	**1943**
5	36A	अव्वल दर्जे की पत्थर की पट्टियों की छत डालना, ऊपर तथा नीचे से जोडों मे पत्थर की चीप के साथ 1:4 अनुपात में सीमेंट मसाले से भरना।	0.785	3.8	0	0	0	11.34					
		होदी	1	0.6	0.6			0.360					
			3	0.6	0.45			0.810					
		Deducting MS Lid	1	0.45	0.45			0.203					
							Net roofing	**12.30**	**sqm**	**705**	**3687**	**4986**	**8674**
6	58 a	50 मी. मी. मोटाई में सीमेंट कंक्रीट 1:2:4 मिश्रण जिसमें 1 सीमेंट 2 बजरी 4 पत्थर की या ईंट की 12 . मी. नाभीय गिट्टी के साथ मिलाकर डालना, कूटना, दबाना तथा तराई आदि समेत ।पत्थर की गिट्टी	0.785	3.96	0	0	0	**12.31**	**sqm**	**230**	**1247**	**1584**	**2831**
7	67 a	सीमेंट प्लास्टर दीवार पर 1:4 अनुपात मे सीमेंट–बजरी मिलाकर कर जोडों को कुरेदने तथा तराई सहित 25 मि.मी. में।											
		Inner wall	3.14	3.2	3.65	0	0	36.68					
		Base	0.785	3.2	0	0	0	8.04					
		Top surface	0.785	3.96	0	0	0	12.31					
		होदी	1	0.6	0.6			0.36					
			3	2	1.5			9					

							Net Plaster	**66.38**	**sqm**	**167**	**5736**	**5351**	**11086**
8	70 a	पत्थर के काम पर सपाट या रूल्ड टीप 1:3 अनुपात मे सीमेंट बजरी मसाले मे मय तराई के।	3.14	3.96			0.6	7.46					
		Deducting Jali	4	0.3	0.15			0.18					
							Net Pointing	**7.28**	**sqm**	**62**	**372**	**79**	**451**
9	LS	S&F Lid	1						**LS**	**700**	**50**	**650**	**700**
10	79	ग्रिल/गेट आदि मे लोहै का कार्य जिसमें सपाट, कोनिया, टी तथा नालीदार (चेनल), को काटना, चढ़ाना तथा लगाना आदि।	4					2kg/jali					
								8	**Kg**	**63.2**	**95**	**410**	**506**
11	78	लोहै की खिड़की मे लोहै की जाली 14 से 24 गेज की लगाना तथा आपूर्त्ति करना तथा 20*3 मि.मी. वीड़िग के साथ लगाकर स्क्रू से कसना।	4	0.3	0.15			0.18					
								0.18	**sqm**	**461**	**19**	**64**	**83**
12	6	नींव मे घाड़ला या ककंर या झाझरा के 20 मि.मी. नामीनल नापीय सामग्री को बिछाना तथा पानी डालकर उसकी कुटाई करना दुरमुट से।	0.785	13.75		3.96	0.2	27.22					
								27.22	**cum**	**184**	**1002**	**4007**	**5009**
13	168	75 मि.मी. व्यास के पी.वी.सी. पाईप का डालना सोल्वेंट सीमेंट से ज्वाईन्ट करना रबर रिंग तथा ल्यूवरीकेन्ट की कीमत सहित 75 मि.मी. व्यास के लिए।		8				**8**	**m**	**147**	**430**	**746**	**1176**
								Total			**25479**	**42504**	**67983**
		जोडेःकनटिनजेन्सी 3 प्रतिशत											**2039**
								Grand Total			**25479**	**42504**	**70022**
												Say	**70000**

MODEL ESTIMATE FOR A VERMI-COMPOST UNIT

S. No.	Particulars	Quantity	Unit	Rate (Rs)	Amount (Rs)
1	Wooden Ballies (3 m long)	20	No.	70	1400
2	Wooden Ballies (4 m long)	25	No.	80	2000
3	Shade mats for covering the roof	125	Sq. m.	40	5000
4	Binding wire for tying wooden ballies and mats	20	Kg	45	900
5	Labour charges for erection of shades	15	No.	135	2025
6	Shovels, spades, crowbars, iron baskets	LS			2000
7	Weighing scale (100 Kg capacity)	1	No.	2500	2500
8	Cow dung	10	Ton	1100	11000
9	Worms @ 3 kg per ton	30	Kg	100	3000
10	Formation of vermi-bed with agro-waste, cow-	20	bed	300	6000
11	Miscellaneous				175
	Total Cost				36000

No. of Units	25
Cost for 25 Units	900000

9.00 Lacs

Category	No. of Units	Contribution	Cost from project	Cost from project (per unit)
Gen, OBC	20	288000	432000	
SC ST	5	36000	144000	
Total	25	324000	576000	23040

Returns from Vermi-compost units

Benefits

1	Sale of vermi-compost	250	Ton	4000	1000000
2	Sale of worms @ 5 kg per ton	1250	Kg	50	62500
	Total				1062500
	Net benefit	1062500	-	900000	162500

Name of Work	Masonry Check Dam		6.23
Watershed	Jodhpur-23		
Scheme	IWMP		
Panchayat Samiti	Balesar		
District	Jodhpur		
Micro w/s No.			
Catchment Area	640	Ha.	
Non Arable Land	340	Ha.	
Arable Land	300	Ha.	
Forest Land	0	Ha.	
% Slope of Nallah	1.32		1.3226
Max. Length of travel of water	3100	mt.	
Diff. Of Elev. Bet. Most remote pt.& outlet	41	mt.	
Maximum rainfall intensity	7	cm/hr	
Length of Anicut (Mt)	19	mt.	
Top Width of Anicut = 0.8	1	mt.	
Length of HWE(Calculated) = 4.02			
Length of HWE (LEFT)	5	mt.(As per site condition)	
Length of HWE (RIGHT)	5	mt.(As per site condition)	
Height of Head Wall	2		

OVER TURNING — It is more than 1.5, hence the structure is safe against overturning.

SLIDING — It is more than 1.0, so the structure is safe against sliding.

RUPTURE — This value is more than 1/3 and less than 2/3 of the base width, it means resultant is passing through the middle third, so there is no chances of developing any tension in the masonary, hence the structure is safe from rupture in tension.

Depth of Foundation(As per Site Condition) 1.2 m

	Depth	Loose Soil	hard soil	Disint rock	Soft rock	Kanti
H. W.	1.2	**0.2**	**0.2**	**0.5**	**0.3**	
H.W.E. (lleft)	3.7	**0**	**0.2**	**0.5**	**3**	
H.W.E. (right)	3.7	**0**	**0.2**	**0.5**	**3**	
S.W.	>>>	**0**	**0.2**	**0.5**	**0.5**	
Wing wall	>>>	**0**	**0.2**	**0.5**	**0.5**	
Toe wall	>>>	**0.2**	**0.2**	**0.2**	**0.6**	
Apron 50 cm	>>>	**0.2**	**0.2**	**0.1**		
Cut off wall	>>>	**0**	**0**			
Berm	>>>	**0**				

MATERIAL COMPONENT

CEMENT	285	PER BAG
SAND	390	PER CU.M.
AGGREEGATE 40 MM HG.	507	PER CU.M.
20 MM HG.	700	PER CU.M.
STONE	650	PER CU.M.

RATE OF ITEMS

Dag belling	0.88	per m
E/W for bund / Embankment	92	per cu.m.
Compaction	0	per cu.m.
Excavation in hard soil	82	per cu.m.
Excavation in ordinary murrum	82	per cu.m.
Excavation in compacted murrum	146	per cu.m.
Excavation in compacted kanti	193	per cu.m.
Excavation in hard rock blasted	160	per cu.m.
Cement concrete (1:4:8)	1903	per cu.m.
Masonary in foundation (1:6)	1914	per cu.m.
Masonary in Super structure (1:6)	2090	per cu.m.
plaster (1:4)	167	per Sq.m.
Coping	230	per Sq.m.
Pointing	62	per Sq.m.
Kharanjha	968	per cu.m.

Item	Source	Katcha	Pucca	Total	Rate
Cement		5	55	60	312.45 / Ton
Sand		2	0	2	34.65 / Cu.m.
Aggregate					
50 mm		5	5	10	270 / Cu.m.
20 mm		5	5	10	270 / Cu.m.
Stone		5	5	10	270 / Cu.m.

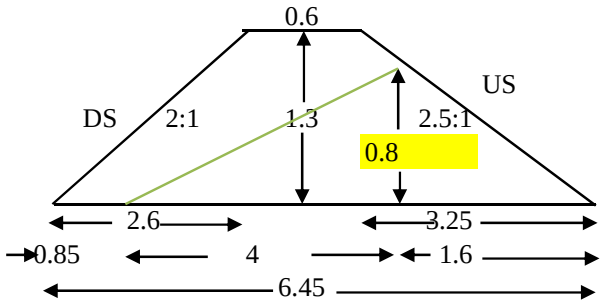
Earthen bund

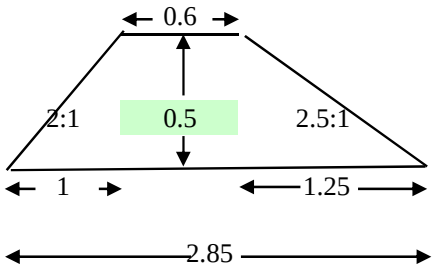
Name of work : Masonry Check Dam Watershed : Jodhpur-23

Left	15
Right	15

Maximum cross section Minimum cross section

Top width = Based on seepage line check
Slope of seepage line 5:1





$$CS = \frac{(Tw+Bw) * Ht}{2}$$

CS = 3.525 Sq.m.

$$CS = \frac{(Tw+Bw) * Ht}{2}$$

CS = 1.725 Sq.m.

Average Cross section	2.625	Sq.m.
Length	30	m.
Quantity	78.75	Cu.m.

TECHNICAL NOTE

Name of work : Masonry Check Dam **Watershed : Jodhpur-23**

Tehsil : Balesar **District : Jodhpur** **Macro / Micro watershed No.** 0

A. Basic data :-

1. Catchment area	=	640	ha.
2. Maximum rainfall intensity	=	7	cm/hr.
3. General nature of catchment area :			
a. Agriculture land	=	300	ha.
b. Non arable land	=	340	ha.
c. Forest land	=	0	ha.
4. Height of crest above G. L.	=	2	m
5. Flood lift	=	0.87	m
6. Free board	=	0.15	m
7. Top width of head wall	=	0.8	m
8. Bottom width of head wall	=	2.6	m
9. Length of crest	=	19	m
10. Percentage slope	=	1.32	%
11. Submerged area of Anicut	=	2.54	ha.
12. Storage capacity of Anicut	=		ha.
13. Wells benefited	=	6	Nos.
14. Farmers benefited	=	8	Nos.
15. Area to be benifitted	=	34	ha.

Catchment area is less than 1300 ha., so Rational formula is applicable.

Q = 0.0276*C*I*A

Where -

Q = Peak rate of runoff in Cu.m./sec

C = Weighted coefficient of runoff

I = Intensity of runoff in cm/hr. for a duration equal to time of concentration and for a given frequency.

A = Catchment area in ha.

Time of concentration Tc = 0.0195*(K)^0.77

Where -

K = (Lt)^1.5/(He)^0.5

Lt = maximum length of travel by runoff water in m.

He = Difference in elevation between most remote point and outlet point in m.

K = 26955.7

Tc = 0.0195*26955.7^0.77

= 50.31 minute I (for Tc = 50.31 min) = 7.9 cm/hr.

Q = 0.0276*0.19*7.9*640

= 26.51 Cumec.

B. DEPTH OF FLOW OR FLOOD LIFT :-

Q = 1.71*L*h^1.5

Therefore h^1.5 = Q/(1.71*L)

h^1.5 = 26.51/(1.71*19)

h = 0.87 m.

Taking free board as 0.15 m.

Total (d) = 1.02 m

C. LENGTH OF OVER FLOW REQUIRED :-

L = 4.75*Q^0.5

= 4.75*^0.5

L = 24.46 m

But as per site condition consider length of head wall = 19 m

Height of head wall taken as per site plan = 2 m

Depth of Foundation from G. L. = 1.2 m

Total height of the structure, H = 4.22 m

D. HEAD WALL

The up stream face is vertical and down stream face is slanted 0.8 : 1

Top width of head wall	=	h/{(p-1)}^0.5
	=	0.76
(As per departmental practices	=	((H+d)^0.5)/2
	=	0.87

Therefore min. top width is considered = 1 m

Base width of Head wall (b)	=	Top width + 0.8 * H
	=	1+0.8*2
	=	2.6 m

E. HEAD WALL EXTENSION

Length		=	H+d+1
		=	2+1.02+1
		=	4.02 m
As per site condition left HWE		=	5 m
Right HWE		=	5 m
Width of HWE		=	0.6 m
Height of HWE	= H + d	=	2+1.02
		=	3.02 m

F. SIDE WALL

Length		=	b + H + d +Tw - Th. of HWE
		=	2.6+3.02+0.45-0.6
		=	5.5 m
Width	= 0.6+0.4*(H+h)	=	0.6+0.4*(2+0.87)
		=	1.75 m
Width at junction of w.w.	= 0.6+0.4*0.87		0.95 m
Height	= H+d	=	2+1.02
		=	3.02 m

G. WING WALL

Length	= 2.25*d	=	2.25*1.02
		=	2.3 m
Width		=	0.6 m
Height	= 1.5*d	=	1.5*1.02

		=	1.53 m

H. APRON

Length		=	19 m
Width	0.75*(H+d)+H	=	0.75*(2+1.02)+2
		=	3.02 m
Thickness		=	0.6 m

(0.3 m concrete bed with 0.3 m stone kharanja in cement mortar (1 : 6)

I. TOE WALL

Length	=	19 m
Width (tw)	=	0.45 m
Height	=	0.3 m

J. CUT OFF WALL

Length	=	19 m
Width	=	0.6 m
Depth	=	1 m

K. DEPTH OF FOUNDATION

As per site condition Depth	=	1.2 m

S. No.	Force	Vertical Forces (V)	Horizontal Forces (F)	Force acting at a distance from B.	Moment at B
1	2	3	4	5	6
1	W1=a*H*L*S =1*2*2300 = 4600	4600		2.1	9660
2	W2=0.5*(b-a)*H*L*S = 0.5*(2.6-1)*2*19*2300 = 1840	1840		1.07	1968.8
3	Fa = w*a*h = 1000*1*0.87 = 870	870		2.1	1827
4	P1=w*h*H = 1000*0.87*2 = 1740		1740	1	-1740
5	P2=0.5*w*H^2 = 0.5*1000*(2)^2 = 2000		2000	0.67	-1340
6	P3=(C*w*b*(H+h))/2 =(0.5*1000*2.6*(2+0.87))/2 = 1865.5	-1865.5		1.73	-3227.315
	TOTAL	8305.5	3740		

Restoring Moment (Mr) = 13455.8
Over turning Moment (Mo) = 6307.32
Resultant Moment (EM) = 7148.49

Where -

L = Length of Anicut (m)
S = Specific weight of masonary = 2300 Kg/Cu.m.
w = Specific weight of water = 1000 Kg/Cu.m.

CHECKS :-

(1.) OVERTURNING

Factor of safety against overturning

= Restoring Moment (Mr) / Overturning Moment (Mo)

= 13455.8/6307.32

= 2.133362506

It is more than 1.5, hence the structure is safe against overturning.

(2.) SLIDING :-

Factor of safety against sliding = U*Sigma V / Sigma F

Where U is coefficient of sliding = 0.70

= 0.70*8305.5/3740

= 1.55

It is more than 1.0, so the structure is safe against sliding.

(3.) RUPTURE :-

Position of resultant X = Sigma M / Sigma V

= 7148.49/8305.5

= 0.861 meter from B.

This value is more than 1/3 and less than 2/3 of the base width, it means resultant is passing through the middle third, so there is no chances of developing any tension in the masonary, hence the structure is safe from rupture in tension.

(4.) SAFETY AGAINST COMPRESSION (CRUSHING)

Eccentricity e = b/2 -$\bar{X}$

Compressive stress at toe & heal respectively

$$P = \frac{\text{Sigma V}*[1+6*e/b]}{b}$$

P max = 8305.5*[1+6*0.439/2.6]/2.6 = 6430.62 Kg/Sq.m.

P min = 8305.5*[1-6*0.439/2.6]/2.6 = -41.77 Kg/Sq.m.

DETAILS OF WORK

Name of work : Masonry Check Dam **Village : Jodhpur-23**
P. S. : Balesar **District : Jodhpur**

S.No.	Particular		Quantity		
☆	Dag belling (5 to 7.5 cm deep)				
			= 4*19 + 2*5 + 2*5 + 2*5.5 + 4*2.3=	**116.2**	m.
☆	E /W for bund / embankment in dry or moist soil including laying in layers of 15 cm. Breaking of clods,sort ing of grass,pabbles etc and dressing in required profile when compacted manually or by plain roller with initial lead of 50 Mt. And lift of 1.5 Mt(excluding charges of .watering and compaction) hard soil 55%(i.e.25.06)				
				78.75	Cu.m.
☆	Excavation in Loose soil dry or moist & disposal of excavated material within initial lead of 50 m and lift of 1.5 m including dressing etc. complete				
	H. W.	=	19*2.6*0.2	9.88	
	H.W.E. (lleft)	=	5*0.75*0	0.75	
	H.W.E. (right)	=	5*0.75*0	0.75	
	S.W.	=	5.5*(1.75+0.95)*0.5*0	1.49	
	Wing wall	=	2.3*0.75*0	0.35	
	Toe wall	=	19*0.45*0.2	1.71	
	Apron	=	19*3.02*0.2	11.476	
	Cut off wall	=	20*0.75*0	3	
				29.406	Cu.m.
☆	Excavation in hard soil ordinary muram or earth mixed with bajri and kankar or boulder dry or moist & disposal of excavated material within initial lead of 50 m and lift of 1.5 m including dressing etc. complete.				
	H. W.	=	19*2.6*0.2	938.6	

H.W.E. (lleft)	=	5*0.75*0.2	0.75
H.W.E. (right)	=	5*0.75*0.2	0.75
S.W.	=	5.5*(1.75+0.95)*0.5*0.2	1.49
Wing wall	=	2.3*0.75*0.2	0.35
Toe wall	=	19*0.45*0.2	1.71
Apron	=	19*3.02*0.2	11.476
Cut off wall	=	20*0.75*0	0
			955.13 Cu.m.

☆ Excavation in disintegrated rock and or soft rock or hard kankar or compacted murrum, dry or moist including dresssing & disposal of excavated material with initial lead of 50 m and lift of 1.5 m

H. W.	=	19*2.6*0.5	24.7
H.W.E. (lleft)	=	5*0.75*0.5	1.875
H.W.E. (right)	=	5*0.75*0.5	1.875
S.W.	=	5.5*(1.75+0.95)*0.5*0.5	3.7125
Wing wall	=	2.3*0.75*0.5	0.8625
Toe wall	=	19*0.45*0.2	1.71
Apron	=	19*3.02*0.1	5.738
Cut off wall	=	20*0.75*0	0
			40.473 Cu.m.

☆ Excavation in compacted kanti, or jhagia and or hard rock, dry or moist not requiring blasting including dressing & disposal of excavated material and stacking of useable stones with initial lead of 50 m & lift of 1.5 m

H. W.	=	19*2.6*0.3	14.82
H.W.E. (lleft)	=	5*0.75*3	11.25
H.W.E. (right)	=	5*0.75*3	11.25
S.W.	=	5.5*(1.75+0.95)*0.5*0.5	3.7125
Wing wall	=	2.3*0.75*0.5	0.8625
Toe wall	=	19*0.45*0.6	5.13
Apron	=	19*3.02*0	0
Cut off wall	=	19*3.02*0	0
			47.025 Cu.m.

☆	Excavation in hard rock blasted (dry or moist) including dressing & disposal of excavated material and stacking of useable stones with initial lead of 50 m & lift of 1.5 m				
	H. W.	=			
	H.W.E. (lleft)	=			
	H.W.E. (right)	=			
	S.W.	=			
	Wing wall	=			
	Toe wall	=			
	Apron	=			
	Cut off wall	=			
					Cu.m.
☆	Cement concrete well mixed in cement mortar (1 : 4 : 8) laid in position complete including curing.Aggregate size upto 40 mm, HB				
	H. W.	=	19*2.6*0.2	9.88	
	H.W.E. (lleft)	=	5*0.75*0.2	0.75	
	H.W.E. (right)	=	5*0.75*0.2	0.75	
	S.W.	=	5.5*(1.75+0.95)*0.5*0.2	1.49	
	Wing wall	=	2.3*0.75*0.2	0.35	
	Toe wall	=	19*0.45*0.2	1.71	
	Apron	=	19*3.02*0.2	11.48	
	Cut off wall	=			
				26.41	Cu.m.
☆	Random rubble stone masonary in cement sand mortar (1 : 6)For foundation				
	H. W.	=	19*2.6*1	49.4	
	H.W.E. (lleft)	=	5*0.75*1	3.75	
	H.W.E. (right)	=	5*0.75*1	3.75	
	S.W.	=	5.5*(1.75+0.95)*0.5*1	14.85	
	Wing wall	=	2*2.3*0.75*1	3.45	
	Toe wall	=	19*0.45*1	8.55	
	Cut off wall	=	20*0.75*1	15	
				98.75	Cu.m.

☆	Random rubble stone masonary in cement sand mortar (1 : 6) For superstructure			
	H. W.	=	19*(2.6+1)*0.5*2	68.4
	H.W.E. (lleft)	=	5*0.6*3.02	9.06
	H.W.E. (right)	=	5*0.6*3.02	9.06
	S.W.	=	5.5*[{(1.75+0.6)/2+(0.95+0.6)/2}/2]*(3.02+1.53)/2	12.2
	Wing wall	=	2.3*0.6*1.53	2.11
	Toe wall	=	19*0.45*0.3	2.57
				103.4 Cu.m.
☆	Stone kharanja in cement mortar (1 : 6) for bed floor including curring etc. complete			
			19*3.02*0.3	**17.21** Cu.m.
☆	Cement plaster including smooth finishing in cement mortar (1:4) 25 mm thick.			
	H. W.	=	19*2	38
	H.W.E. (lleft)	=	5*3.02	15.1
	H.W.E. (right)	=	5*3.02	15.1
	S.W.	=	2 * {(1 * 1.02) + (1.02 + 2 + 1.02)/2*(2.6 - 1) + (2 + 1.02 + 1.53)/2*(3.02 + 0.45)}	24.29
	Wing wall	=	2.3*1.53	3.52
	Toe wall	=	19*0.3	5.7
				101.71 Sq.m.
☆	Ruled pointing in cement mortar (1:3)			
	H. W.	=	19*2.56	**48.64** Sq.m.
☆	Cement concrete coping in cement mortar 1 : 2 : 4 , 50 mm thick.			
	H. W.	=	19*1	19.00
	H.W.E. (lleft)		5*0.6	3

H.W.E. (right)	5*0.6	3
S.W.	2 * {(0.6*(2.6 + 3.02 + 0.45)}	7.28
Wing wall	2.3*0.60	1.38
Toe wall	19*0.45	8.55
		42.21 Sq.m.

ABSTRACT OF COST

S.No.	Item	Quantity	Rate	Amount
1	Dag belling (5 to 7.5 cm deep)	116.2	0.88 / R m.	102.26
	E /W for bund / embankment in dry or moist soil including laying in layers of 15 cm. Breaking of clods,sort ing of grass,pabbles etc and dressing in required profile when compacted manually or by plain roller with initial lead of 50 Mt. And lift of 1.5 Mt(excluding charges of .watering and compaction) hard soil	78.75	92 / Cu.m.	7245
	Compaction of earth work on embankment by manual ramming or plain roller	0	0 / Cu.m.	0
	Excavation in Loose soil dry or moist & disposal of excavated material within initial lead of 50 m and lift of 1.5 m including dressing etc. complete	29.406	82 / Cu.m.	2411.29
	Excavation in hard soil ordinary muram or earth mixed with bajri and kankar or boulder dry or moist & disposal of excavated material within initial lead of 50 m and lift of 1.5 m including dressing etc. complete.	955.13	82 / Cu.m.	78320.66
	Excavation in disintegrated rock and or soft rock or hard kankar or compacted murrum, dry or moist including dresssing & disposal of excavated material with initial lead of 50 m and lift of 1.5 m	40.473	146 / Cu.m.	5909.06

	Excavation in compacted kanti, or jhagia and or hard rock, dry or moist not requiring blasting including dressing & disposal of excavated material and stacking of useable stones with initial lead of 50 m & lift of 1.5 m	47.025	193 / Cu.m.	9075.83
	Excavation in hard rock blasted (dry or moist) including dressing & disposal of excavated material and stacking of useable stones with initial lead of 50 m & lift of 1.5 m	0	160 / Cu.m.	0
	Preparation of foundation of structure including removal of all loose stones and silt and final washing by manual labour.	0	/ Cu.m.	0
	Cement concrete well mixed in cement mortar (1 : 4 : 8) laid in position complete including curing.Aggregate size upto 50 mm, HB	26.41	1903 / Cu.m.	50258.23
	Random rubble stone masonary in cement sand mortar (1 : 6)For foundation	98.75	1914 / Cu.m.	189007.5
	Random rubble stone masonary in cement sand mortar (1 : 6) For superstructure	103.4	2090 / Cu.m.	216106
	Stone kharanja in cement mortar (1 : 6) for bed floor including curring etc. complete	17.21	968 / Cu.m.	16659.28
	Cement plaster including smooth finishing in cement mortar (1 : 4) 25 mm thick.	101.71	167 / Sq.m.	16985.57

Ruled pointing in cement mortar (1 : 3)	48.64	62 / Sq.m.	3015.68
Cement concrete coping in cement mortar 1 : 2 : 4 , 50 mm thick.	42.21	230 / Sq.m.	9708.3
		Total Rs.	**604804.66**

MATERIAL CONSUMPTION STATEMENT

Name of work : Masonry Check Dam

Name of Village : Jodhpur-23

S.No.	Particulars	Qty.	Cement (Bags)	Sand (Cu.m)	Aggregate		Stone (Cu.m)
					50 mm	12 mm	
1	Cement concrete (1:4:8) Aggregate size upto 50 mm, HB. @ (3.2,0.45,0.9)	26.41 Cu.m	84.512	11.88	23.77		
2	R.R. Stone masonary (1:6) (Foundation / Superstructure. @(1.395,0.3,1.10)	202.15 Cu.m	282	60.65			222.37
3	Cement plaster (1:4) 25 mm thick. @(0.224,0.032)	101.71 Sq.m	22.78	3.25			
4	Raised & cut pointing @(0.028,0.003)	48.64 Sq.m	1.36	0.15			
5	Stone kharanja in cement mortar (1:6) @(1.07,0.3,1.1)	17.21 Cu.m	18.41	5.16			18.93
6	Cement concrete coping (1:2:4) 50 mm thick @(0.312,0.022,0.045)	19 Sq.m	5.93	0.42		0.86	
	TOTAL		**414.992**	**81.51**	**23.77**	**0.86**	**241.3**

Say 415 Bags

Material Component :-

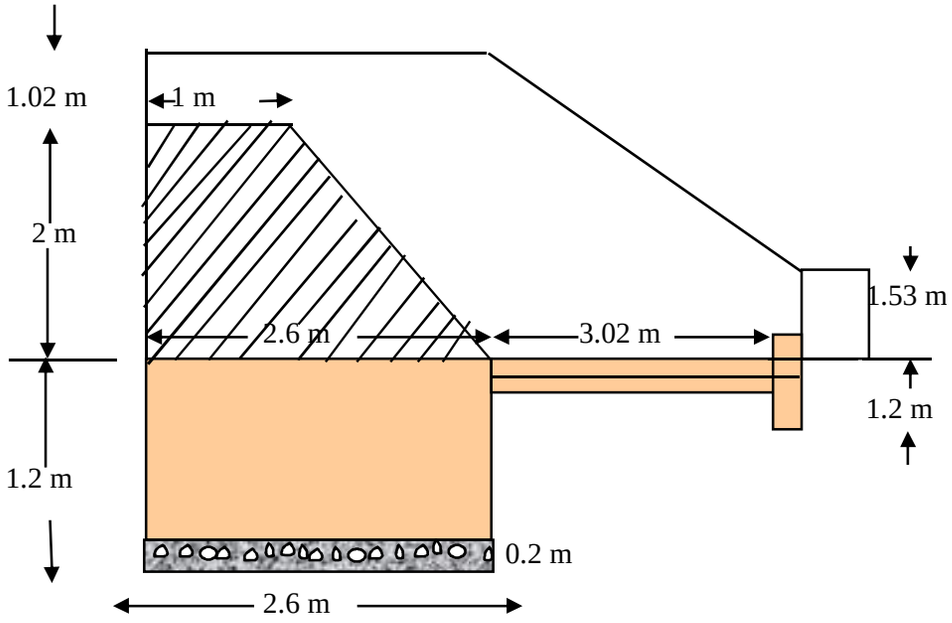
1	Cement	415	Bags @	285	Per Bag =	Rs	118275
2	Sand	81.51	Cu.m. @	390	Per Cu.m =	Rs	31788.9
3	Aggregate						
	50 mm	23.77	Cu.m. @	507	Per Cu.m =	Rs	12051.39
	12 mm	0.86	Cu.m. @	700	Per Cu.m =	Rs	602
4	Stone	241.3	Cu.m. @	650	Per Cu.m =	Rs	156845
						Total Rs =	**319562.29**

EMPLOYMENT GENERATION

Labour Component :-	Rs.	**285242.37**
	Total Rs.	**604804.66**
Contingency and Suoervision charges (@ 3%)	Rs.	**18144.14**
	Grand Total Rs.=	**622948.8**
	Say Rs	6.23 Lakh

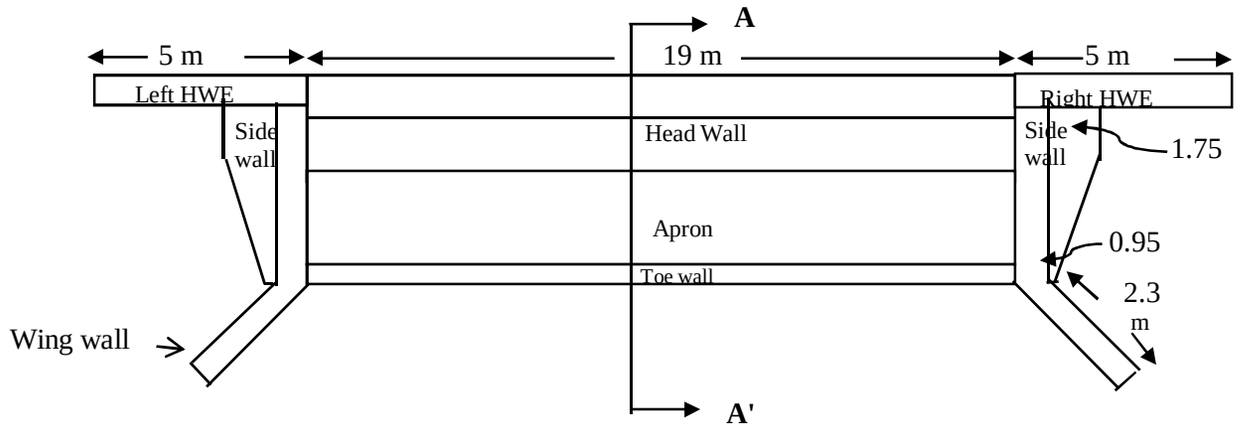
Drawing of Anicut **Village :- Jodhpur-23**

SIDE VIEW



Sec. at A A'

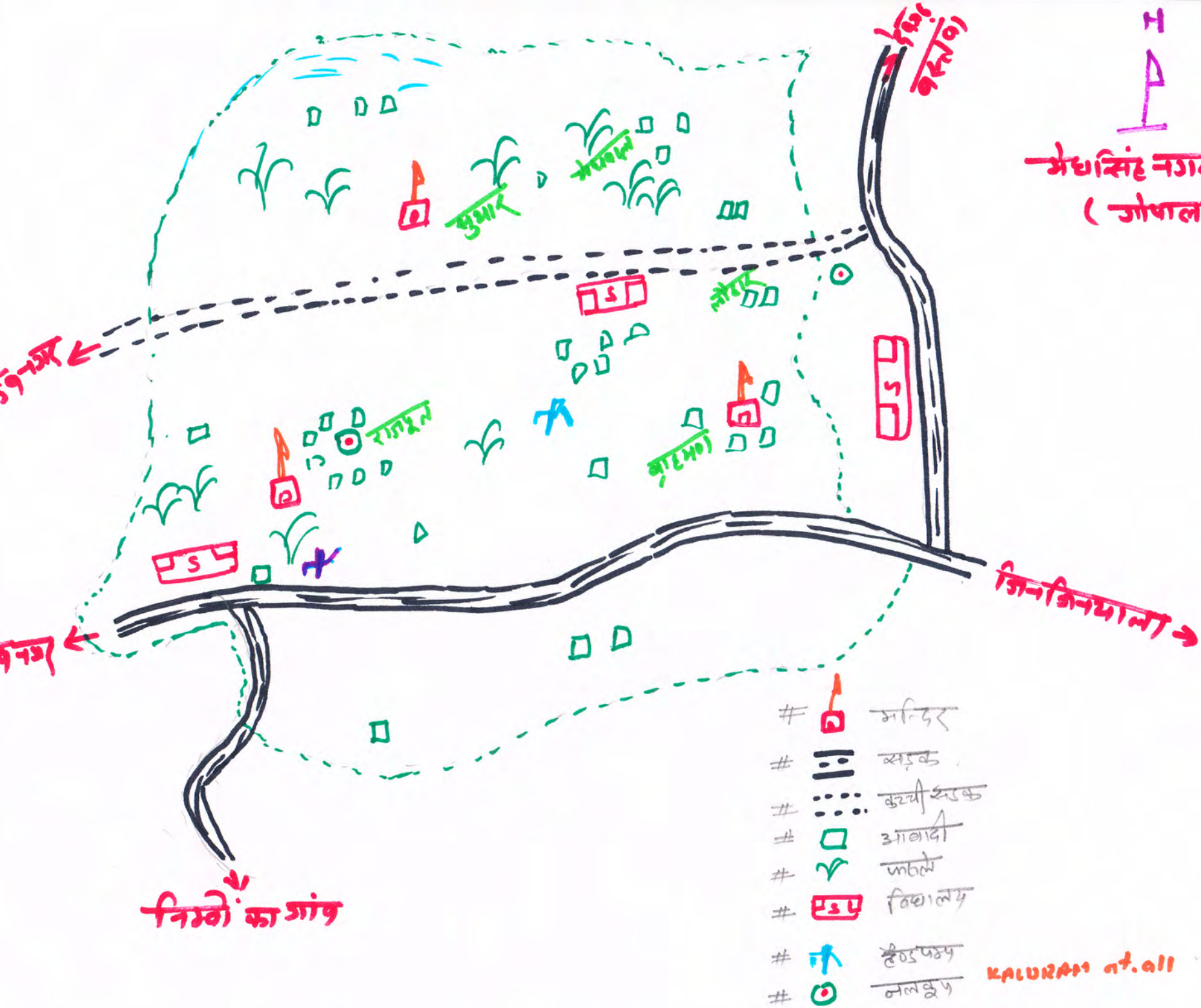
PLAN

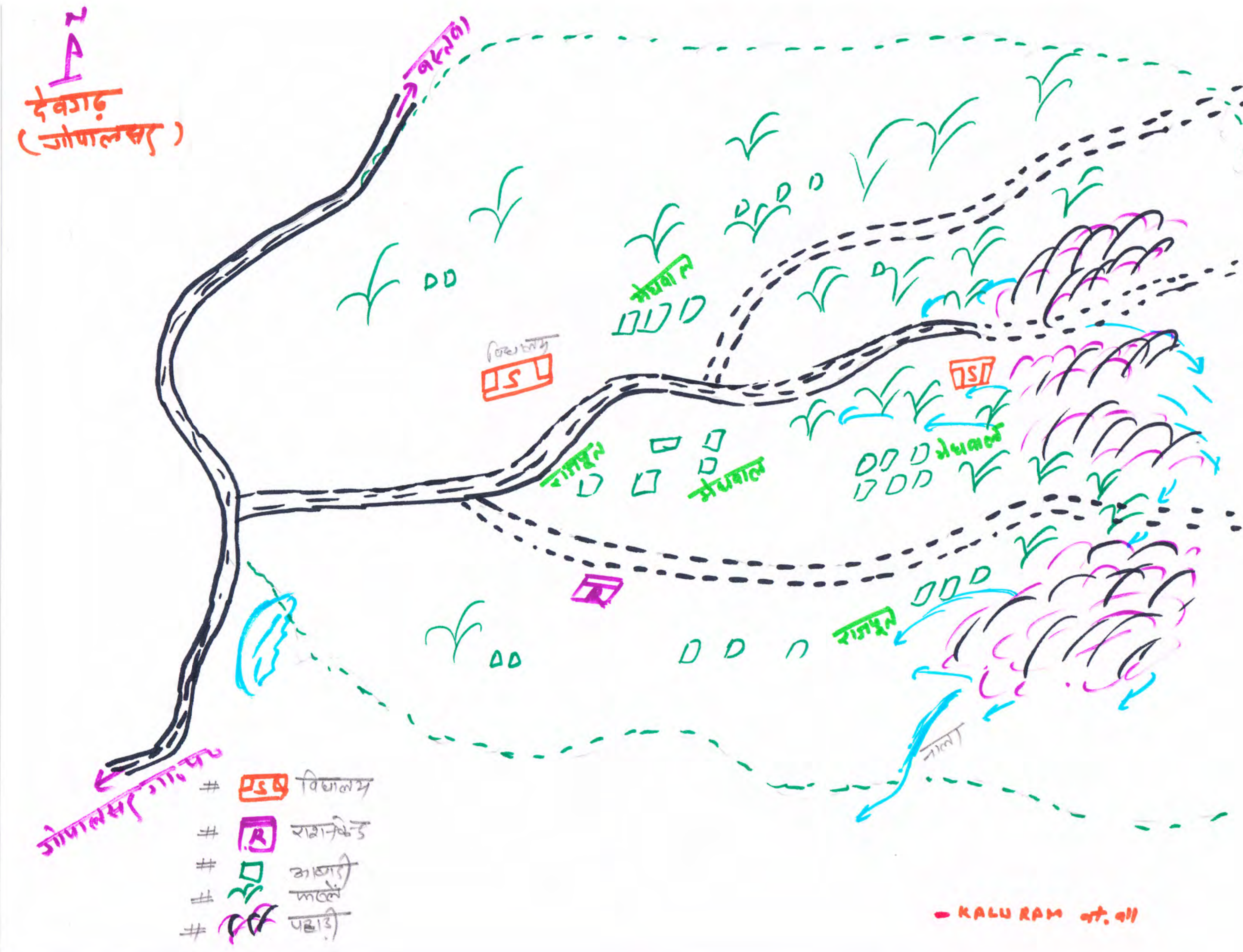


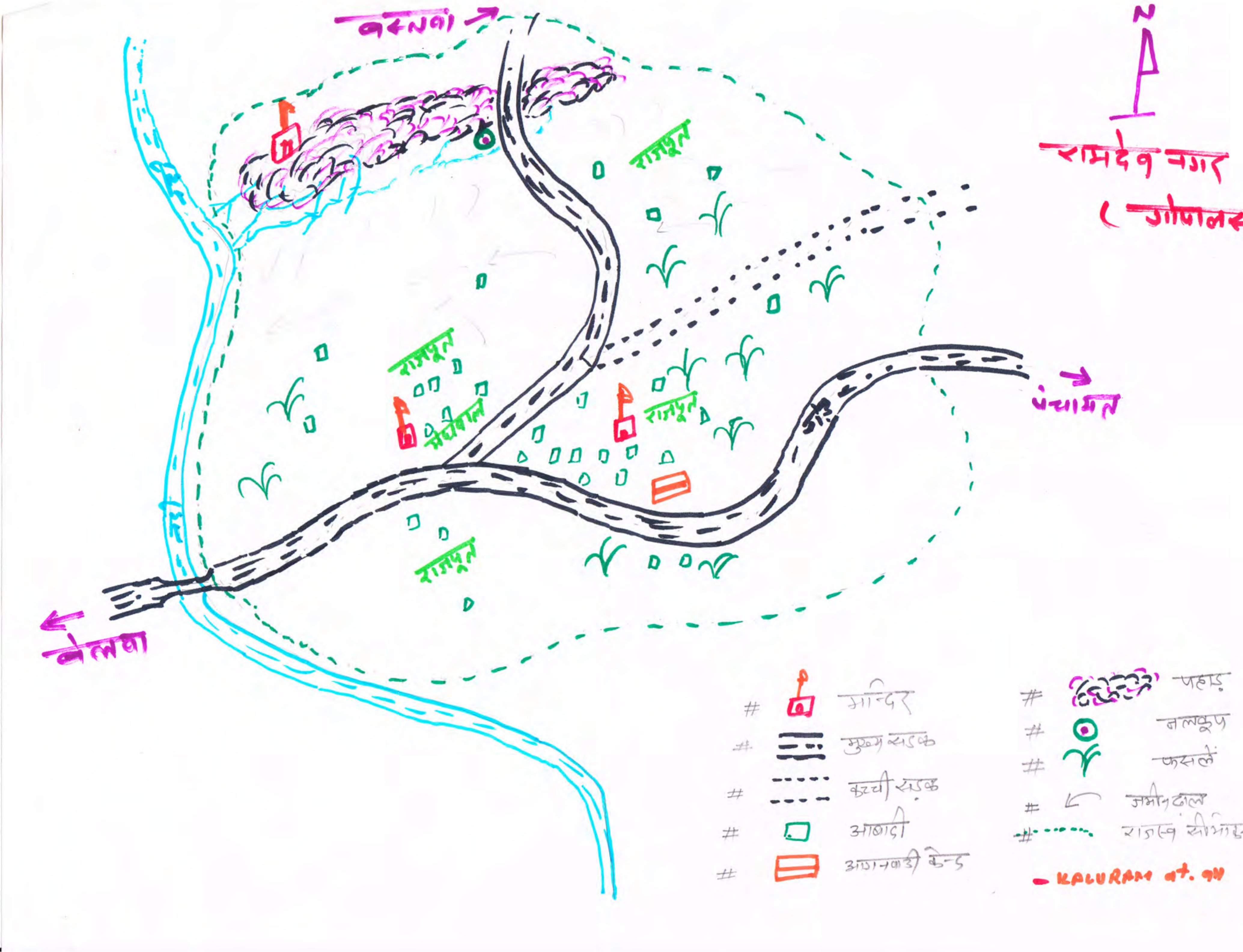

सहायक अभियन्ता(PIA), IWMP
पंचायत समिति, बालेसर, जोधपुर
पी.आर.ए. कार्यक्रम
ग्राम पंचायत - गोपालसर
जोधपुर - 23


सेव
सहायक अभियन्ता(PIA), IWMP
पंचायत समिति, बालेसर, जोधपुर
पी.आर.ए. कार्यक्रम
ग्राम पंचायत - गोपालसर
जोधपुर - 23

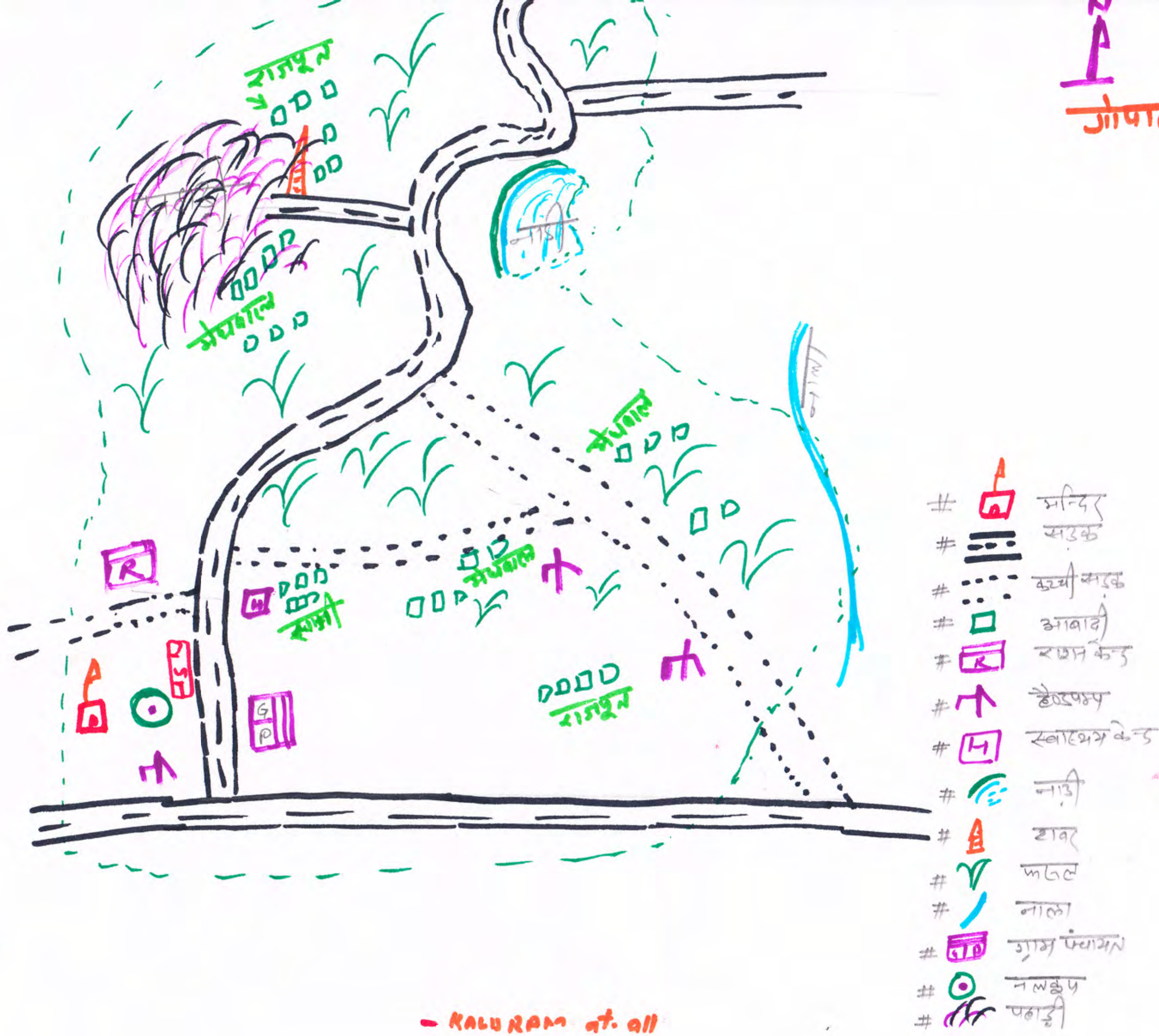
সাধারণ মানচিত্র


मेघसिंह नगर
(जोधपुर)
सुथार
मेघवाल
सोनार
राजपूत
जाटमणी
जिनजिनयाला
निम्बो का गांव
मन्दिर
सड़क
कच्ची सड़क
आबादी
जंगले
विद्यालय
हैण्डपम्प
नलकूप
KALURAM at. all


N
देवगढ़
(गोपालपुरा)
विद्यालय
S
मेघवाल
राजपूत
मेघवाल
मेघवाल
राजपूत
R
S
नाला
गोपालपुरा
S विद्यालय
R राशनकेन्द्र
आबादी
फसलें
पहाड़ी
KALU RAM

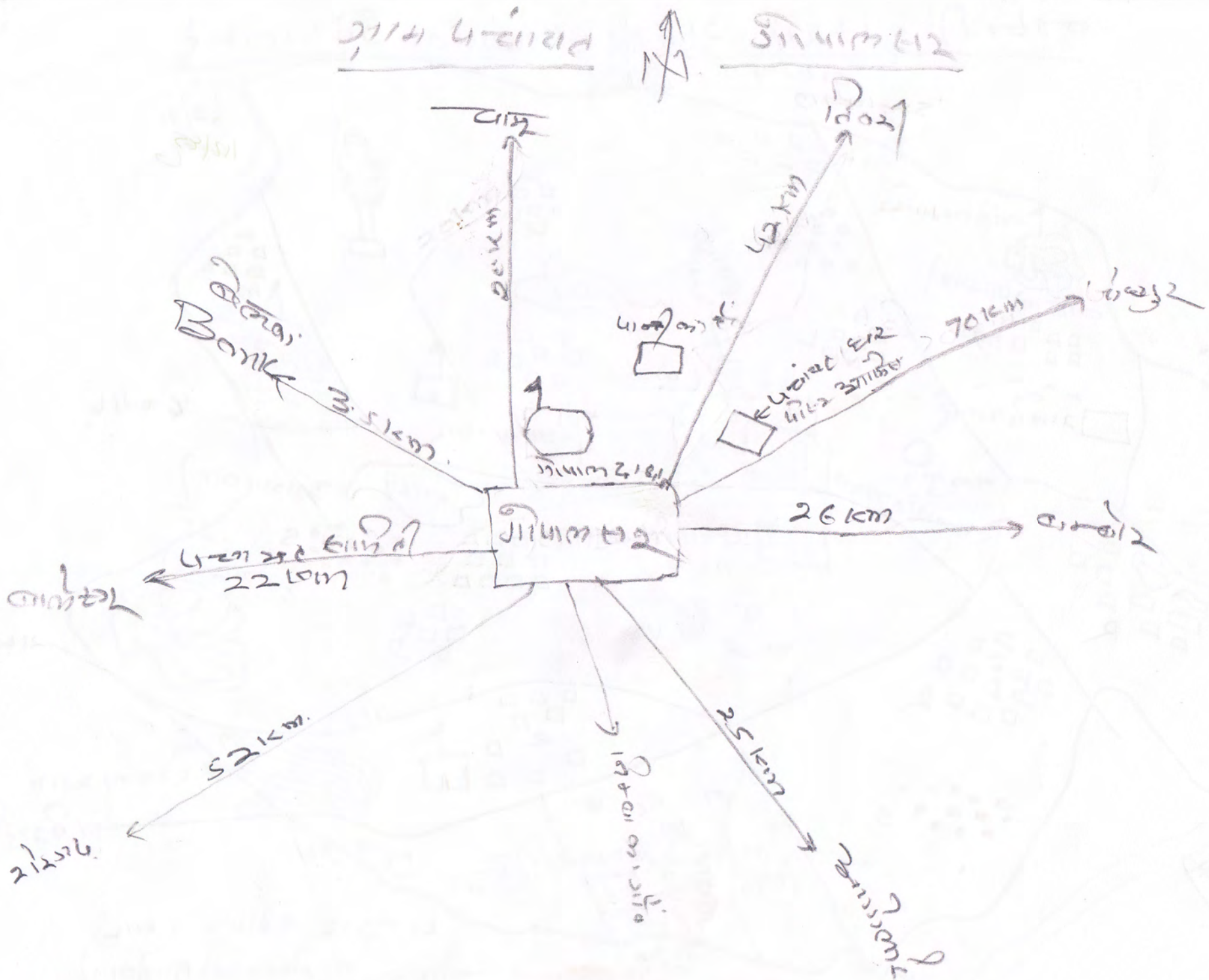

रामदेव नगर
पंचायत
राजपूत
राजपूत
राजपूत
राजपूत
मेघवाल
मन्दिर
मुख्य सड़क
कच्ची सड़क
आबादी
आंगनवाड़ी केन्द्र
पहाड़
नलकूप
फसलें
KALURAM

गोपालसर



– KALU RAM et. all

KALU ROAD art.gh



GEOREFERENCED KHASRA MAP WITH CONTOUR

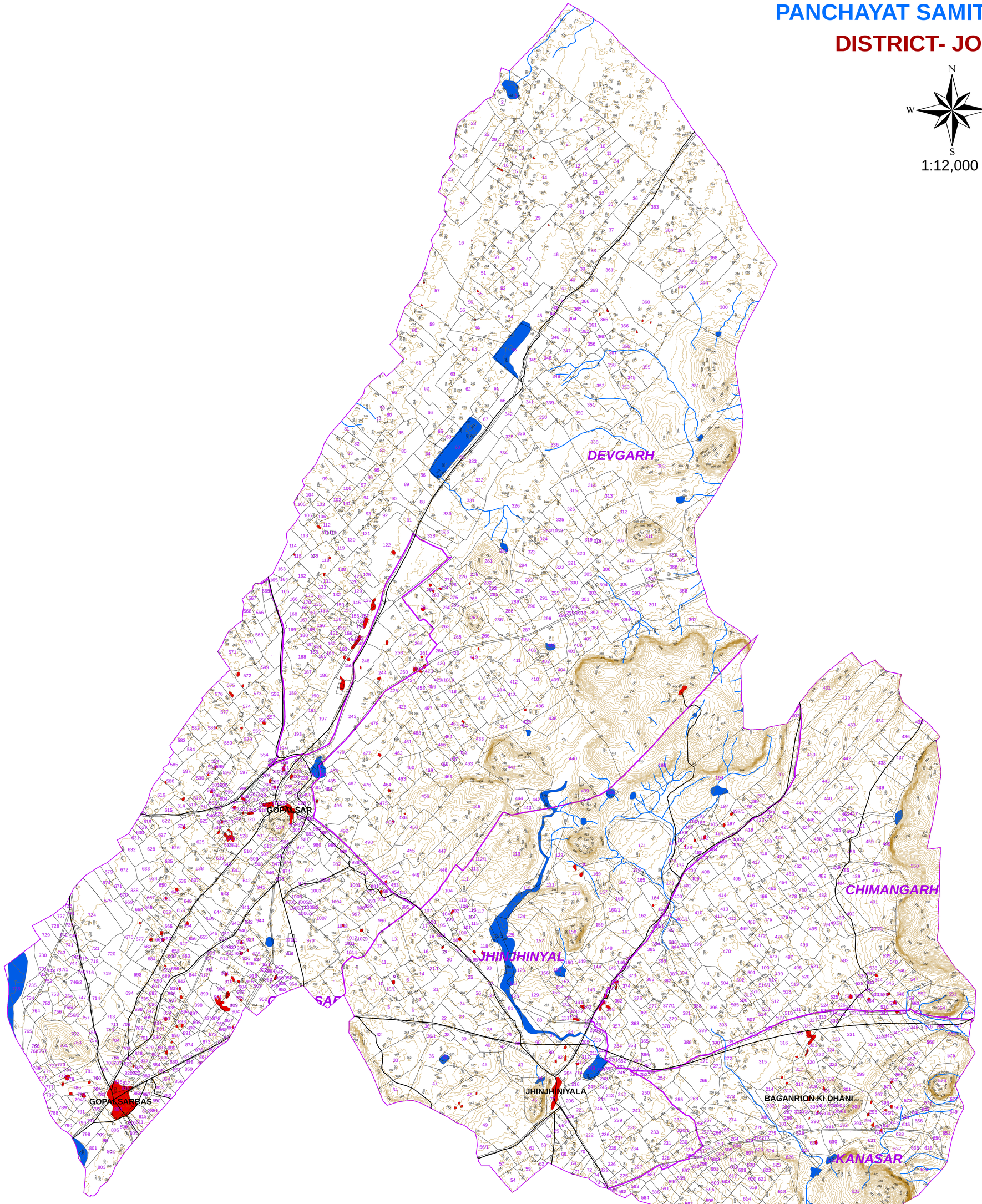
WATERSHED - GOPALSAR (IWMP)

PANCHAYAT SAMITI - BALESAR

DISTRICT- JODHPUR

N
W E
S

1:12,000



Legend

- DRAINAGE
- CONTOUR
- ROAD
- VILLAGE
- KHASRA BOUNDARY
- RIVER/ WATERBODY
- SETTLEMENT
- WATERSHED OUTER

STATE REMOTE SENSING APPLICATION CENTRE
Department of Science & Technology
JODHPUR

LAND USE/ LAND COVER MAP

WATERSHED - GOPALSAR (IWMP)

PANCHAYAT SAMITI - BALESAR

DISTRICT- JODHPUR

N

W E

S

1:12,000

DEVGARH

GOPALSAR

GOPALSARBAS

JHINJHINIYALA

JHINJHINYAL

KANASAR

BAGANRION KI DHANI

CHIMANGARH

Legend

- DRAINAGE
- ROAD
- VILLAGE
- KHASRA BOUNDARY
- RIVER/ WATERBODY
- SETTLEMENT
- WATERSHED OUTER
- AGRICULTURE
- BARREN ROCKY/ STONY WASTE
- LAND WITH SCRUB
- LAND WITHOUT SCRUB
- RIVER
- SANDY DESERTIC LAND
- SETTLEMENT
- WATERBODY

STATE REMOTE SENSING APPLICATION CENTRE
Department of Science & Technology
JODHPUR

CARTOSAT-1 (LISS- III MERGE) SATELLITE IMAGE

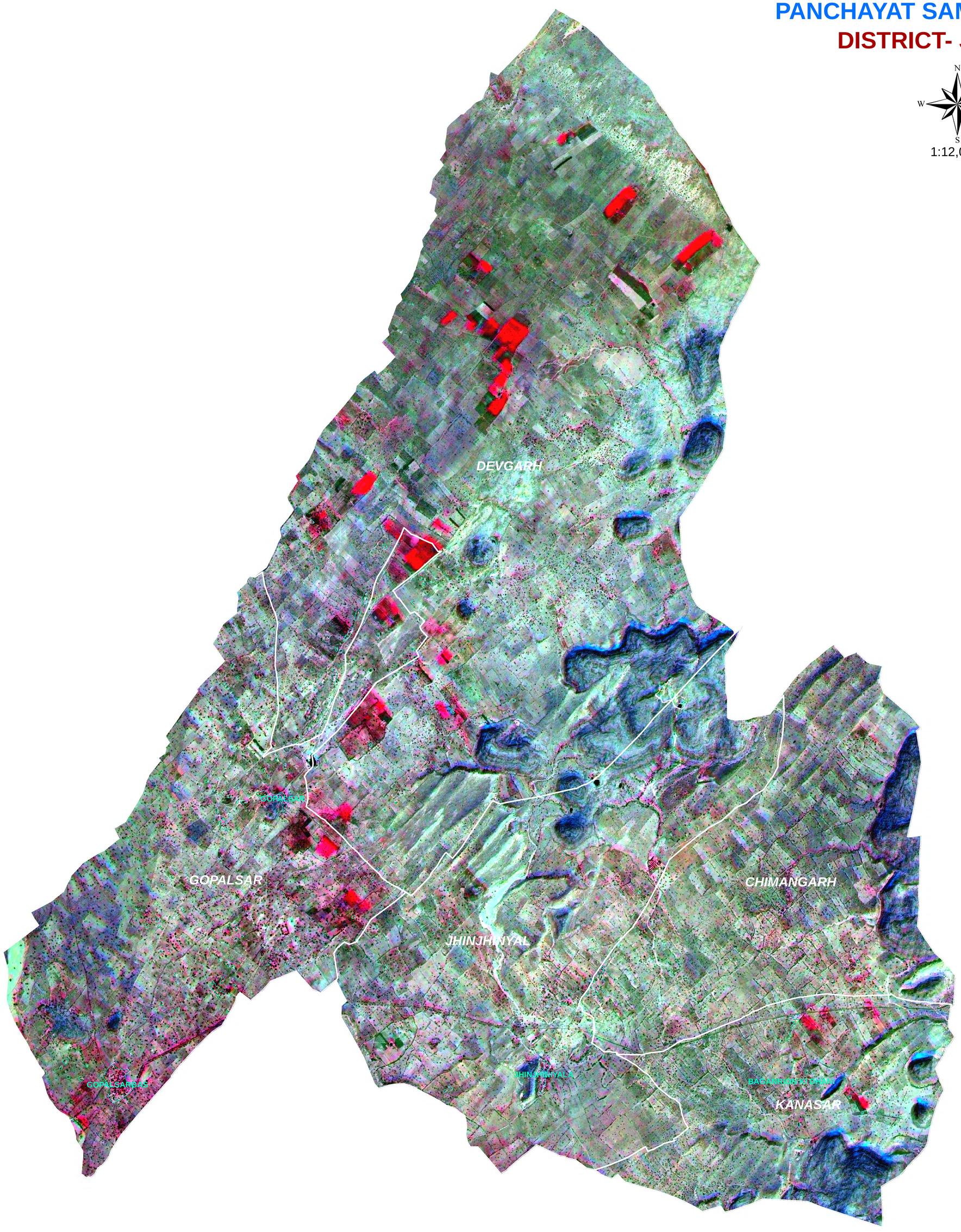
WATERSHED - GOPALSAR (IWMP)

PANCHAYAT SAMITI - BALESAR

DISTRICT- JODHPUR

N
W E
S

1:12,000



Legend

- VILLAGE
- SETTLEMENT

STATE REMOTE SENSING APPLICATION CENTRE
Department of Science & Technology
JODHPUR