DETAIL PROJECT REPORT

OF

INTEGRATED WATERSHED MANAGEMENT PROGRAMME

FIRST

WATERSHED - GANGA

BLOCK - MALWAN

DISTRICT - FATEHPUR (U.P.)

SUBMITTED TO :

Bhoomi Sanrakshan Adhikari
Department of Land Development
& Water Resources
Fatehpur (U.P.)

REPRESENTED BY

Chairman And Administrator
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Lucknow (U.P.)

DEPARTMENT OF LAND DEVELOPMENT & WATER RESOURCES

LUCKNOW (U.P.)

CONTENTS

Executive Summary

In District Fatehpur (U.P.) 118 no. of micro watershed having 119303.00 ha are available for I.W.M.P., out of which 10 micro watersheds named having 5783.00 hectare area are selected under I.W.M.P. Ist Fatehpur. These micro watersheds are situated in the catchment of river Ganga. The watershed is situated in the North of Fatehpur District. It lies between $26^0$5' to $26^0$10' latitude and $80^0$35' to $80^0$45' longitude.

The estimate of the selected project is semi-arid with an average rainfall (preceding-five year) is 618 mm. out of which about 90% is received during the monsoon season from July to September. Temperature ranges from very high 46.4 ^{0}C in the May-June to minimum 4.2 ^{0}C during December-January.

The soil of project area is mainly Sandy clay. Upper portion of the project has minor slope. Agriculture is the main occupation of the people of project area. The main crops are wheat, Mirch, Arhar, Bajra. Green Manuring is the proposed to minimize the runoff and to maintain the soil fertility of the soil.

Natural vegetation of the watershed area is very poor. Babool, Mahua are the main tree of the area. Occasionally Neem, Sheesham, Ber tree are found in this area. There is no reserve pasture in the watershed area. Due to Anna Pratha and lack of irrigation water the rate of mortality of planted trees is very high. P.R.A. exercise conducted in the villages of watershed area revealed that inadequate irrigation facilities, low production of field crops.

Fodder shortage, lack of inputs and market facility are some of the major constraints being experienced by the farmers. For this area Mango, Amla, Guava, Ber, Bel fruit plants are suitable.60.40 ha Agro-Horticulture is proposed in the selected area to motivate the farmers to adopt the agro horticulture in practice because of inadequate irrigation water.

It is expected that the implementation of different watershed management activities will bring down the run off and soil loss by 70% and 80% of their present level respectively. It is envisaged to increase the water and land utilization index though adoption of bio-engineering measures and improve the eco-development index. The proposed plan will improve the crop diversification index, productivity of existing crop and thereby will lead to self-suffering in food with nutritional security. The different enterprises of various sectors and the project as a whole have been found to be economically viable with sound rate of internal return and less payback period.

PROJECT AT A GLANCE

1- Name Of Project	I.W.M.P. - Ist
2- Name Of Block	MALWAN
3- Name Of District	FATEHPUR
4- Name Of State	U.P.
5- Name Of Watershed	GANGA
6- Name Of Village Selected	Daud Pur, Kishan Pur, Meermau, Lakshman Pur, Bhiyamau, Mahmood Pur, Rawat Pur, Maksoodan Khera, Bakauli, Lahangi, Nandi Pur, Ajmeri Pur, Kotiya, Guneer, Ibrahim Pur, Mawaiya, Deomai, Govind Pur, Sair Pur, Madoki Pur, Sultan Pur
7- Micro Watershed Code Selected	2B3B5a2d, 2B3B5a2b, 2B3B5a2c, 2B3B5b1a, 2B3B5c1b, 2B3B5b1b, 2B3B5b1c, 2B3B5b1d, 2B3B5c1a, 2B3B5c1c
8- Total Area Of The Project	5783.00 Hact.
9- Proposed Area For treatment	5205.00 Hact.
10- Cost Per Hectare	Rs. 12000.00
11- Project Period	2009-10 2010-11 - 2013-14
12- Total Cost Of Project	624.60 Lakhs
13- Proposed Man Days	262300 Nos..

SALIENT FEATURES

1. Financial Outlays.

S.No.	Component	Unit	Quantity	Cost / Unit (Lakhs)	Total (Lakhs)
A.	**MANAGEMENT COSTS**				
	Administrative cost- TD & DA, POL/ Hiring of vehicles/ Office and payment of electricity and phone bill, etc. computer, stationary and office consumable and contingency	Nos..	NA	NA	62.460
	Expert for monitoring and evaluation	Nos..	NA	NA	12.492
	Sub Total				**74.952**
B.	**PREPARATORY PHASES**				
	(1) Entry point Activities				
	(a) Renovation of Culvert	Nos..	8	0.24000	1.92000
	(b) Renovation of Well	Nos..	16	1.05250	16.84000
	(c) Bathroom Cum Cloth Changing Room for Female use near Well, Hand Pump, Pond, River, etc.	Nos..	1	0.42310	0.42310
	(d) Soaking Pit	Nos..	13	0.04000	0.52000
	(e) Silting Tank	Nos..	4	0.00520	0.02080
	(f) Krishak Vikas Manch	Nos..	5	0.87000	4.35000
	(g) Tree Planting with Brick Guard	Nos..	63	0.01355	0.85365
	(h) Tree planting without Brick Guard	Nos..	114	-	0.05645
	Sub Total				**24.98400**
	(2) Institutional and Capacity Building				31.23000
	(3) Detail Project Report				6.24600
	Sub Total				**62.4600**
C.	**WATERSHED WORKS**				
	(1) Watershed Development Works				
	(a) Construction of Bunds (Field Bund, Contour Bund, Submergence Bund, marginal Bund and Peripheral Bund)	Hect.	3240.00	0.04206	136.274
	(b) renovation of the Existing Bund for insitu soil Moisture Conservation	Hect.	514.66	0.04500	23.1597
	(c) Rain-fed Horticulture with Fencing	Hect.	18.000	0.60800	10.9440
	Rain-fed Horticulture without Fencing	Hect.	225.89	0.15050	33.9960
	Total of Rain-fed Horticulture	**-**	**-**	**-**	**44.94**
	(d) Construction of Recharge Filter	Nos..	25	0.15670	3.9175
	(e) New and renovation of Existing Water Harvesting Structure/	Hect.	270.00	0.12000	32.400

	Gully Plug/ Chek Dam				
	(f) Affroestation and Development of Silvi-Pastoral System	Hact.	83.49	0.10345	8.6370
	(g) Drainage Line Treatment (Pucca Structure / Gully Plug and Chek Dam)	Nos..	25	-	62.9714
	Sub Total				**312.300**
	(2) Livelihood Programme (Community Based)				
	Income Generating Activities through S.H.G.'s for Landless and Marginal Farmers				
	(a) Establishment of Nadef-Compost Units	Nos..	50	0.10400	5.200
	(b) Dairy Work	Nos..	50	0.50000	25.000
	(c) Goat-Keeping	Nos..	12	0.43950	5.27
	(d) General Merchant Shop	Nos..	6	0.25000	1.50
	(e) Livestock Development Activities	**Detail Attached**			25.49
	Sub Total				**62.46**
	(3) Production System and Micro-Enterprises				
	(a) Crop Production, Diversification of Agriculture	Hact.	180.00	0.05914	10.647
	(b) Introduction of Agro-Forestry / Horticulture	Hact.	42.00	1.58771	66.683
	(c) Demonstration of Green Manuring	Hact.	619.00	0.00625	3.868
	Sub Total				**81.198**
D.	**CONSOLIDATION PHASE**				**31.23**
	GRAND TOTAL				**624.600**

Note : Unit costs of different activities are given in annexure.

2. Physical Outlays.

ACTIVITIES RELATED TO	Total (Quantity)
ADMINISTRATIVE COSTS	
TD & DA, POL/ Hiring of vehicles/ Office and payment of electricity and phone bill etc. computer, stationary and office consumable and contingency	√
Expert for monitoring and evaluation.	√
PREPARATORY PHASES	
Entry Point Activities improvement in Panchvati Drinking Water System, School, etc.	√
Institutional and Capacity Building	√
WATERSHED WORKS	
Watershed Development Works	
Construction of Bunds (Field Bund, Contour Bund, Submergency Bund, Marginal Bund and Peripheral Bund	3240.00
Renovation of the Existing Bund for Insitu Soil Moisture Conservation	514.66
Rain-fed Horticulture with Fencing	18.00
Rain-fed Horticulture without Fencing	225.89
New and Renovation of Existing Water Harvesting Structure/ Gully Plug / Chek Dam	270.00
Afforestation and development of Silvi-pastoral System	83.49
Construction of Recharge Filter (Nos.)	25
Drainage Line Treatment (Pucca Structure / Gully Plug and Chek Dam) (Nos.)	25
LIVELIHOOD PROGRAMME (Community Based)	
Income generating activities through SHG's for Landless and marginal farmers.	
(a) Goat Keeping (Nos.)	12
(b) Establishment of Nadef Compost Unit. (Nos.)	50
(c) Dairy Work. (Nos.)	50
(d) General Merchant Shop. (Nos.)	6
(e) Livestock development Activities	√
PRODUCTION SYSTEM AND MICRO ENTERPRISES	
Demonstration and assessment of improved composting system using alternate materials (118 Nadef-compost and 100 nutrient analysis (Nos..)	50 40
Introduction of improved crop production practices. (i) For Kharif crops (ha). (ii) For Rabi Crop (ha).	 90 90
CONSOLIDATION PHASE	√

PHASING OF WORK (FINANCIAL & PHYSICAL)

1. Financial Outlays.

S. No.	Component	Unit	Quantity	Unit Cost (Lakhs)	IstYear (Lakhs)	IInd Year (Lakhs)	IIIrd Year (Lakhs)	IVth Year (Lakhs)	Vth Year (Lakhs)	Total
A.	**MANAGEMENT COSTS**									
	Administrative cost - TD & DA, POL/ Hiring of vehicles/Office and payment of electricity and phone bill, etc. computer, stationary and office consumable and contingency				- -	12.4920 1.2492	16.5519 1.2492	16.5519 1.2492	16.8642 2.4984	62.46 6.246
	Expert for monitoring and evaluation	Nos.	NA	NA	-	1.8738	1.09305	1.09305	2.1861	6.246
	Sub Total				**15.00**	**15.00**	**15.00**	**15.00**	**14.952**	**74.952**
B	**PREPARATORY PHASES**									
	(1) Entry Point Activities									
	(a) Renovation of Culvert	Nos..	8	0.24000	1.92000	-	-	-	-	1.92000
	(b) Renovation of Well	Nos..	16	1.05250	16.8400	-	-	-	-	16.8400
	(c) Bathroom cum Cloth Changing Room for Female use near Well, Hand Pump, Pond, River etc.	Nos..	1	0.42310	0.42310	-	-	-	-	0.42310
	(d) Soaking Pit	Nos..	13	0.04000	0.52000	-	-	-	-	0.5200
	(e) Silting Tank	Nos..	4	0.00520	0.02080	-	-	-	-	0.02080
	(f) Krishak Vikas Manch	Nos..	5	0.87000	4.3500	-	-	-	-	4.3500
	(g) Tree Planting with Brick Guard	Nos..	63	0.01355	0.85365	-	-	-	-	0.85365
	(h) Tree Planting without Brick Guard	Nos..	114	-	0.05645	-	-	-	-	0.05645
	Sub Total				24.984	**-**	**-**	**-**	**-**	24.984
	(2) Institutional and Capacity Building		NA	6.246	6.246	12.4920	4.6845	4.6845	3.1230	31.23
	(3) Detail Project Report				6.246	-	-	-	-	6.246
	Sub Total				**43.73**	**12.50**				**62.46**
C.	**WATERSHED WORKS**									
	(1) Watershed Development Works									
	(a) Construction of Bunds (Field Bund, Contour Bund, Submergence Bund, Marginal Bund and Peripheral Bund	Ha	3240	0.4206	-	34.0686	34.0686	34.0686	34.0686	136.2744
	(b) Renovation of the Existing Bund for Insitu Soil Moisture Conservation	Ha	514.660	0.04500	-	5.789	5.789	5.789	5.7927	23.1597

	(c) Rain-fed Horticulture with Fencing	Ha	18.00	0.60800	-	2.432	2.432	2.432	3.648	10.9440
	Rain-fed Horticulture without Fencing	Ha	225.8900	0.15050	-	7.525	7.525	7.525	11.421	33.9960
	Total of Rain-fed Horticulture	Ha	243.8900	-	-	9.957	9.957	9.957	15.069	44.94
	(d) Construction of Recharge Filter	Nos.	25	0.15670	-	0.7835	0.7835	0.7835	1.567	3.9175
	(e) New and Renovation of Existing Water Harvesting Structure / Gully Plug / Chek Dam	Ha	320.00	0.12000	-	9.60	9.60	9.60	3.60	32.40
	(f) Afforestation and Development of Silvi-Pastoral System	Ha	83.49000	0.10345	-	2.069	2.069	2.069	2.430	8.6370
	(g) Drainage Line Treatment (Pucca Structure / Gully Plug and Chek Dam)	Nos..	25	-	-	25.188	12.594	12.594	12.5954	62.9714
	Sub Total					**87.4551**	**74.8611**	**74.8611**	**75.1227**	**312.30**
	(2) Livelihood Programme (Community Based)									
	Income Generating Activities through S.H.G.'s for Landless and Marginal Farmers									
	(a) Establishment of Nadef Compost Unit	Nos..	50	0.10400	5.2000	-	-	-	-	5.200
	(b) Dairy Work	Nos..	50	0.50000	15.000	7.500	2.500	-	-	25.000
	(c) Goat Keeping	Nos..	12	0.43950	5.2700	-	-	-	-	5.270
	(d) General Merchant Shop	Nos..	6	0.25000	0.750	0.750	-	-	-	1.500
	(e) Livestock Development Activities	**Detail Attached**			5.000	16.734	3.756	-	-	25.490
	Sub Total				**31.220**	**24.984**	**6.256**	**-**	**-**	**62.460**
	(3) Production System and Micro-Enterprises									
	(a) Crop Production, Diversification of Agriculture	Ha	180	0.05914	4.4355	2.1915	2.190	0.915	0.915	10.647
	(b) Introduction of Agro-Forestry / Horticulture	Ha	42.00	1.58771	29.3745	12.529	12.5295	6.125	6.125	66.683
	(c) Demonstration of Green Manuring	Ha	619	0.00625	1.1600	1.354	1.354	-	-	3.868
	Sub Total				**34.970**	**16.0745**	**16.0735**	**7.040**	**7.040**	**81.198**
D	**CONSOLIDATION PHASE**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**31.230**	**31.23**
GRAND TOTAL					**37.4760**	**87.4440**	**155.68155**	**156.1845**	**187.380**	**624.600**

Note : Unit costs of different activities are given in annexure.

2. Physical Outlays

Activities Related To	Ist Year (Quantity)	IInd Year (Quantity)	IIIrd Year (Quantity)	IVth Year (Quantity)	Vth Year (Quantity)	Total (Quantity)
ADMINISTRATIVE COSTS						
Administrative cost - TD & DA, POL/ Hiring of vehicles/Office and payment of electricity and phone bill, etc. computer, stationary and office consumable and contingency	√	√	√	√		√
Expert for monitoring and evaluation	√	√	√	√		√
PREPARATORY PHASES						
Entry Point Activities improvement in Panchvati Drinking Water System, School, etc.	√	-	-	-		√
Institutional and capacity building	√	√	√	√		√
WATERSHED WORKS						
Watershed Development Works						
Construction of Bunds (Field Bund, Contour Bund, Submergence Bund, Marginal Bund and Peripheral Bund	-	81.00	81.00	81.00	81.00	3240.00
Renovation of the Existing Bund for Insitu soil Moisture Conservation	-	128.64	128.64	128.64	128.74	514.66
Rain-fed Horticulture with Fencing	-	4.00	4.00	4.00	6.00	18.00
Rain-fed Horticulture without Fencing	-	50.00	50.00	50.00	75.89	225.89
New and Renovation of Existing Water Harvesting Structure/ Gully Plug / Chek Dam	-	80.00	80.00	80.00	30.00	270.00
Afforestation and Development of Silvi-pastoral System	-	20.00	20.00	20.00	23.49	83.49
Construction of Recharge Filter (Nos..)	-	5	5	5	10	25
Drainage Line Treatment (Pucca Structure / Gully Plug and Chek Dam) (Nos..)	-	10	5	5	5	25
LIVELIHOOD PROGRAMME (Community Based)						
Income Generating Activities through SHG's for Landless and marginal farmers.						
(a) Goat Keeping	12	-	-	-	-	12
(b) Establishment of Nadef Compost Unit (Nos..)	50	30	15	5	-	50
(c) Dairy Work (Nos..)	50	-	-	-	-	50
(d) General Merchant Shop (Nos..)	3	3	-	-	-	6
(e) Livestock Development Activities	√	√	√	√		√

PRODUCTION SYSTEM AND MICRO ENTERPRISES						
Demonstration and assessment of improvement composting system using alternate materials (118 Nadef-compost) and 100 nutrient analysis (Nos..)	50 40	- -	- -	- -	- -	50 40
Introduction of Improved crop production practices. **(i)** For Kharif Crops (Ha) **(ii)** For Rabi Crops (Ha)	25 20	20 20	15 20	15 15	15 15	90 90
CONSOLIDATION PHASE	-	-	-	√		√

Proposed Entry Point Activities

S. No.	Name of Project	Culvert	Renovation of Well	Krishak Vikas Manch	Bathroom	Soaking Pit	Silting Tank	Plantation With Brick Gaurd	Plantation Without Brick Guard
1.	**Bhiyamau**	1	2	-	-	2	2	14	11
2.	**Kotiya**	1	1	1	-	2	-	8	12
3.	**Govindpur**	-	1	1	-	1	-	4	8
4.	**Deomai**	2	2	-	-	2	-	4	15
5.	**Mawaiya**	1	1	-	-	2	-	24	3
6.	**Nandipur**	-	1	1	-	2	-	3	13
7.	**Guneer**	-	2	-	1	-	2	2	5
8.	**Sultanpur**	2	2	-	-	-	-	1	16
9.	**Ibrahimpur**	1	2	1	-	2	-	2	18
10.	**Lahangi**	-	2	1	-	-	-	1	13
Total		**8**	**16**	**5**	**1**	**13**	**4**	**63**	**114**

Introduction

&

Background

Chapter - I

Problems and Need of Area

Problems Identification and Prioritization:-

Food sufficiency, economic growth and environmental security has identified as the major issues to be addressed in the watershed area, The area has moderate to steep slope hence highly prone to soil erosion. Efficiency soil depth is unlimited and spatially useful for good crop growth.

Problems identified and prioritized the transect walk and PRA exercise in all 21 villages have pooled and list of 8 (eight) problems representing the whole watershed was prepared. Problems have ranked as per their total weightage in the 21 villages. Lack of irrigation water is the greatest problem experienced by the people followed by low function of field crops, lack of fodder availability and low animal productivity.

Problems Identification and Prioritization for Ganga Watershed

S.No.	Problems	Rank
1.	Low Production of field crops	5
2.	Lack of irrigation water	6
3.	lack of drinking water	7
4.	Non availability of fuel wood	6
5.	Lack of inputs like quality seeds, fertilizers, pesticides etc.	8
6.	Medical and health care facilities for milching animals and low productivity	8
7.	Lack of fodder availability and low annual productivity	9
8.	Lack of medical educational; and transportation facilities	7

Weightage for Selection of Watershed

1	2	3	4	5	6	7	8													
S. No.	District	Name of the Project	No. of Micro-watershed proposed to be covered	Proposed project area (ha)	Type of project (Hilly/Desert/Others)	Proposed Cost (Rs. in lakh)	Weightage under the criteria													
							i	ii	iii	iv	v	vi	vii	viii	ix	x	xi	xii	xiii	Total
1	FATEHPUR	IWMP -I	10	5205	OTHER	624.60	7.5	5	5	10	0	0	10	7.5	10	15	10	15	0	95

Watershed Information

Means Of Communication:-

The watershed can approached from main road -

(i) Kanpur-Fatehpur National Highway (NH-2)

(ii) The Tree diagram to reach at all selected villages is attached on Page No. 34

Natural Resources Base:-

Out of the total 6859.00 ha area of the watershed under agriculture use an area of 5783.00 ha is under rain fed agriculture (84.31%) and assured irrigation by Canal & Govt. tube well is available in 695.13 ha (10.13%). Main source of irrigation are private tube wells and seasonal water bodies for pre-sowing irrigation only. The natural resource maps of the watershed villages drawn by villagers themselves are attached from Page No. 216 to 254.

Importance of Development Institution:-

In the Venn diagram, farmer's perception was recorded for importance and role of different development institutions is relation to infrastructure development in the villages. Importance has been depicted with the size of the circle and role with distance from the village circle. The Venn diagram of selected villages is attached here with from page no. 255 to 275.

Livelihood:-

Out of the total population 36950 in the watershed, a majority i.e. more than 81.27% has farming as their major source of livelihood followed by 14.33% laborer and 4.40% service + business class.

Depending on forest for Fuel Wood and Fodder:

(A) Fuel Wood:-

Some villages of the selected village are using LPG to meet their cooking energy requirements. The main source of fuel is from cow dung cake, woody stem of Arhar crop and Mustard. About 65% to 70% of the domestic energy requirement is met from the Agro By-Product and cow dung cake. Rest is met out from the forest outside the

village and watershed boundary. Fuel wood is obtained from the forest which is situated in the Block Malwan Outside the Watershed Boundary.

(B) Fodder:-

Villages do not have any significant dependency on forest based fodder as these sources are not available in the forests. There is shortage of green fodder in winter and summer due to inadequate irrigation facility. Due to lack of fodder availability here is Anna Pratha in this area which is the most important reason for more mortality rate of planted trees also.

(C) Labour Requirement:-

Labour requirement is found to be maximum during October-November, when the harvesting of Kharif and sowing of Rabi crops are done simultaneously. The other crucial periods are March-April when harvesting and threshing of Rabi crop is done and July-August when sowing of Kharif crops tales place. Other income generating enterprises having potential during the remaining month should be planned to reduce the migration of labours.

(D) Crop Calendar:-

The present crop calendar in the watershed comprises of fallow-wheat, Arhar-Jwar mixed cropping, Paddy-Wheat, Til-Wheat, Fallow-Potato, Bajra-Lentil etc. Fallow-Wheat, Fallow-Gram, Fallow-Lentil, Arhar + Jwar are the most prevailing crop rotation on the agriculture lands both in rain fed and irrigated condition in the watershed. Organized vegetable cultivation, fruit plantation and traditional agro-forestry system are lacking widely in the watershed. The limited vegetable cultivation in the watershed is confined either to kitchen gardens or to be irrigated conditions in a scattered manner on extremely small area with view to meet out the domestic demand for vegetables. The cultivation of each crop other than the gram, lentil and mustard also lacks in the watershed.

FARMERS PREFERENCES

(A) Fruit Trees:-

Farmer's preferences for fruit trees are solicited in terms of attributes like production, market availability and timber wood value. Overall Amla, Guava, Ber, Papaya is found most preferred fruit tree.

(B) Fodder Trees:-

Farmers also do not have any preferred fodder tree in the watershed in spite of fact that watershed falls in semi arid tract.

The marketing facilities lack of follow up of modern scientific package of practices of cropping potential in the watershed, socio-economical factors etc. is found to be most important factors deciding the preferences of farmers pertaining to selection and cultivation of agricultural crops, fruits or fodder trees in the watershed.

(C) Agriculture:-

Arhar, Gram, Lentil, Jwar + Arhar, Bajra are the most preferred agricultural crop in the watershed followed by wheat and paddy.

THE VARIED PRESENT LAND USE AND AREA UNDER DIFFERENT CATEGORIES IN WATERSHED IS AS BELOW:

(Area in Hectare)

S.No.	Name of Project	No. of Micro Watershed	No. of Villages	Geographical Area of the Villages	Forest Area	Land under Agriculture Use	Rain-fed Area	Permanent Pastures	Wasteland		Treatable Area
									Cultivable	Uncultivable	
1	2	3	4	5	6	7	8	9	10	11	12
1.	I.W.M.P. Ist Fatehpur	10	21	7229	0.00	6859.00	5783	0.00	3107.00	370.00	5205

During PRA exercise, the villagers prepared land use and hydrology maps of their villages.

Historical Time Line

The Historical Timeline is the chronological record of important events in the history of a village which is useful in understanding its background in the context of watershed development. Historical time line depicting important events in respect of different villages of the watershed has prepared through PRA "Historical TimeLine" of the selected villages are attached from Page No. 22 to 30.

Present Land Use in the Watershed Page No. 35-36

The watershed has diversified land uses, namely agriculture waste land (Open Serub), Seasonal Water Bodies etc.

HISTORICAL TIMELIVE VILLAGE-WISE OF I.W.M.P. I[st]

Village - Rawat Pur		
S. No.	**ACTIVITIES**	**YEAR**
1.	Established	1521
2.	Construction of bandhi [water harvesting structure]	1985
3.	opening up Primary School	1981
4.	Introduction of Tractor	1965
5.	Establishment of Gobar Gas Plant	1983
6.	Kachcha Road	1977
7.	Introduction of Thresher	1981
8.	First Tube Well / Diesel Pump Set	1960
9.	First Motorcycle	1983
10.	TV & DVD Player	1994
11.	Over Head Water Tank	1996
12.	Electricity in the Village	1995
13.	Bituminous Road	2005
14.	Temple Renovation	1853
15.	Planning of Water Shed	2009-2010
16.	Other	

HISTORICAL TIMELIVE VILLAGE-WISE OF I.W.M.P. Ist

Village - Nandi Pur		
S. No.	**ACTIVITIES**	**YEAR**
1.	Established	1530
2.	Construction of bandhi [water harvesting structure]	-
3.	opening up Primary School	-
4.	Introduction of Tractor	-
5.	Establishment of Gobar Gas Plant	-
6.	Kachcha Road	1988
7.	Introduction of Thresher	1992
8.	First Tube Well / Diesel Pump Set	1993
9.	First Motorcycle	2000
10.	TV & DVD Player	2002-2003
11.	Over Head Water Tank	-
12.	Electricity in the Village	-
13.	Bituminous Road	2004
14.	Temple Renovation	-
15.	Planning of Water Shed	2009-2010
16.	Other	

Village - Kotiya		
S. No.	**ACTIVITIES**	**YEAR**
1.	Established	1100
2.	Construction of bandhi [water harvesting structure]	-
3.	opening up Primary School	1995
4.	Introduction of Tractor	1985
5.	Establishment of Gobar Gas Plant	1980
6.	Kachcha Road	1990
7.	Introduction of Thresher	1985
8.	First Tube Well / Diesel Pump Set	1970
9.	First Motorcycle	1960
10.	TV & DVD Player	1985
11.	Over Head Water Tank	-
12.	Electricity in the Village	2004
13.	Bituminous Road	2005
14.	Temple Renovation	1800
15.	Planning of Water Shed	2009-2010
16.	Other	

HISTORICAL TIMELIVE VILLAGE-WISE OF I.W.M.P. I[st]

Village - Ibrahim Pur		
S. No.	**ACTIVITIES**	**YEAR**
1.	Established	1200
2.	Construction of bandhi [water harvesting structure]	-
3.	opening up Primary School	1912
4.	Introduction of Tractor	1985
5.	Establishment of Gobar Gas Plant	-
6.	Kachcha Road	1977
7.	Introduction of Thresher	1988
8.	First Tube Well / Diesel Pump Set	1985
9.	First Motorcycle	1962
10.	TV & DVD Player	1987
11.	Over Head Water Tank	-
12.	Electricity in the Village	-
13.	Bituminous Road	-
14.	Temple Renovation	1204
15.	Planning of Water Shed	-
16.	Other	

Village - Lahangi		
S. No.	**ACTIVITIES**	**YEAR**
1.	Established	1530
2.	Construction of bandhi [water harvesting structure]	-
3.	opening up Primary School	1945
4.	Introduction of Tractor	1969
5.	Establishment of Gobar Gas Plant	1985
6.	Kachcha Road	1975
7.	Introduction of Thresher	1967
8.	First Tube Well / Diesel Pump Set	1972
9.	First Motorcycle	1994
10.	TV & DVD Player	1985
11.	Over Head Water Tank	-
12.	Electricity in the Village	1987
13.	Bituminous Road	2005
14.	Temple Renovation	1709
15.	Planning of Water Shed	2009-2010
16.	Other	

HISTORICAL TIMELIVE VILLAGE-WISE OF I.W.M.P. I[st]

Village - Guneer		
S. No.	**ACTIVITIES**	**YEAR**
1.	Established	1090
2.	Construction of bandhi [water harvesting structure]	1998
3.	opening up Primary School	1952
4.	Introduction of Tractor	1985
5.	Establishment of Gobar Gas Plant	2001
6.	Kachcha Road	1975
7.	Introduction of Thresher	1975
8.	First Tube Well / Diesel Pump Set	1975
9.	First Motorcycle	1980
10.	TV & DVD Player	1986
11.	Over Head Water Tank	-
12.	Electricity in the Village	1991
13.	Bituminous Road	1992
14.	Temple Renovation	1367
15.	Planning of Water Shed	2009-2010
16.	Other	

Village - Mawaiya		
S. No.	**ACTIVITIES**	**YEAR**
1.	Established	1635
2.	Construction of bandhi [water harvesting structure]	-
3.	opening up Primary School	-
4.	Introduction of Tractor	2006
5.	Establishment of Gobar Gas Plant	-
6.	Kachcha Road	1992
7.	Introduction of Thresher	2005
8.	First Tube Well / Diesel Pump Set	1999
9.	First Motorcycle	1992
10.	TV & DVD Player	2005
11.	Over Head Water Tank	-
12.	Electricity in the Village	2002
13.	Bituminous Road	2008
14.	Temple Renovation	2005
15.	Planning of Water Shed	-
16.	Other	

HISTORICAL TIMELIVE VILLAGE-WISE OF I.W.M.P. I[st]

Village - Govind Pur		
S. No.	**ACTIVITIES**	**YEAR**
1.	Established	1690
2.	Construction of bandhi [water harvesting structure]	1985
3.	opening up Primary School	1996
4.	Introduction of Tractor	1986
5.	Establishment of Gobar Gas Plant	-
6.	Kachcha Road	1985
7.	Introduction of Thresher	1986
8.	First Tube Well / Diesel Pump Set	1975
9.	First Motorcycle	1995
10.	TV & DVD Player	1985
11.	Over Head Water Tank	-
12.	Electricity in the Village	1987
13.	Bituminous Road	1986
14.	Temple Renovation	1810
15.	Planning of Water Shed	2009-2010
16.	Other	

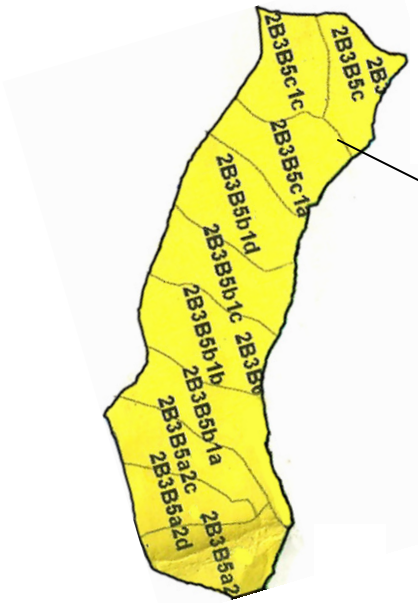
Village - Sultan Pur		
S. No.	**ACTIVITIES**	**YEAR**
1.	Established	1765
2.	Construction of bandhi [Water Harvesting Structure]	1974
3.	opening up Primary School	1985
4.	Introduction of Tractor	1977
5.	Establishment of Gobar Gas Plant	1984
6.	Kachcha Road	1983
7.	Introduction of Thresher	1996
8.	First Tube Well / Diesel Pump Set	1979
9.	First Motorcycle	1992
10.	TV & DVD Player	1997
11.	Over Head Water Tank	-
12.	Electricity in the Village	2001
13.	Bituminous Road	2006
14.	Temple Renovation	1951
15.	Planning of Water Shed	2010
16.	Other	

FARM FAMILIES ACCORDING TO THEIR SIZE OF LANDING

S.No.	Name of Village	Land Holding Classification			
		Marginal	**Small**	**Others**	**Total**
1.	Bhiyamau	21	249	5	**275**
2.	Meermau	4	31	-	**35**
3.	DaudPur	3	35	1	**39**
4.	Bakauli	11	57	5	**73**
5.	NandiPur	56	22	2	**80**
6.	Rawat Pur	34	273	9	**316**
7.	Kotiya	1222	165	13	**1400**
8.	Sair Pur	65	10	1	**76**
9.	Deo Mai	192	19	6	**217**
10.	Ibrahim Pur	147	27	8	**182**
11.	Laxman Pur	5	109	1	**115**
12.	Kishan Pur	21	106	7	**134**
13.	Sultan Pur	17	173	2	**192**
14.	Lahangi	1097	62	10	**1169**
15.	Azmeri Pur	99	22	2	**123**
16.	Mahmud Pur	386	21	2	**409**
17.	Maksudan Khera	160	14	1	**175**
18.	Guneer	882	173	40	**1095**
19.	Mawaiya	349	105	12	**466**
20.	Govind Pur	224	31	1	**256**
21.	Madoki Pur	126	31	-	**157**
Total		**5121**	**1735**	**128**	**6984**

General Description of Project Area

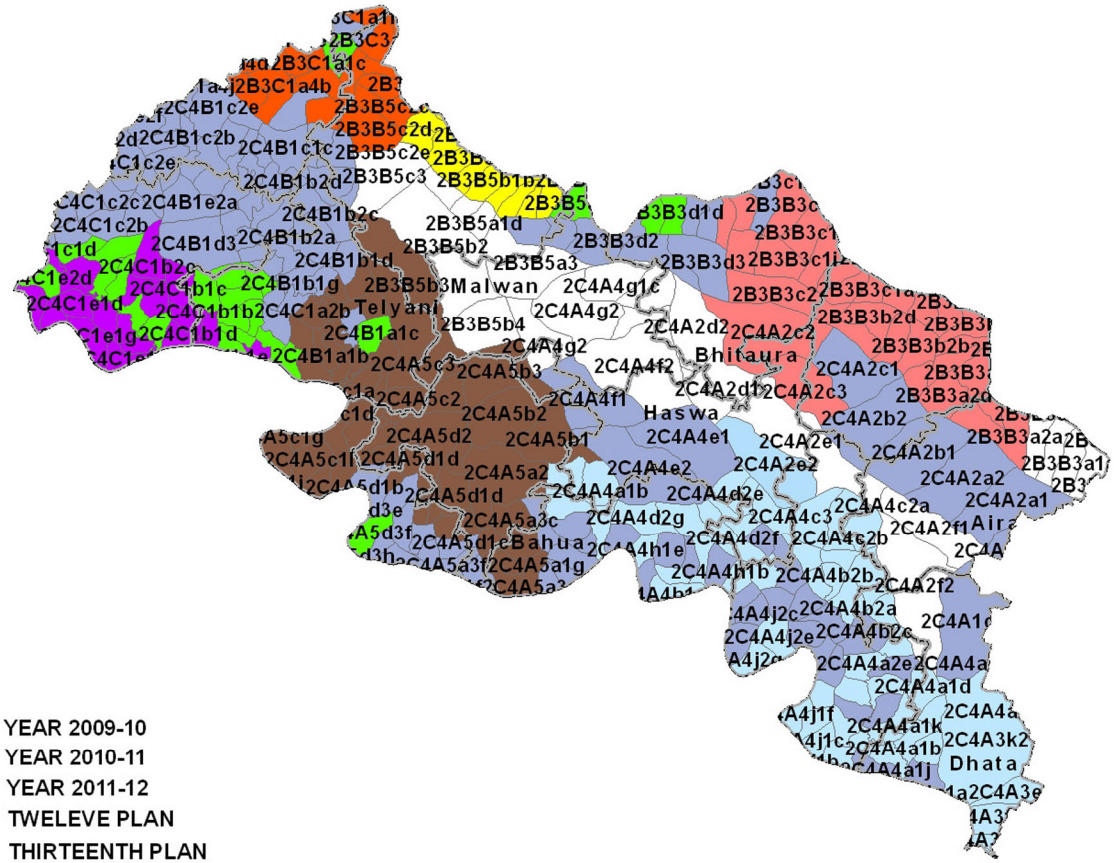
LOCATION OF I.W.M.P. – I CLUSTER



I.W.M.P. - I

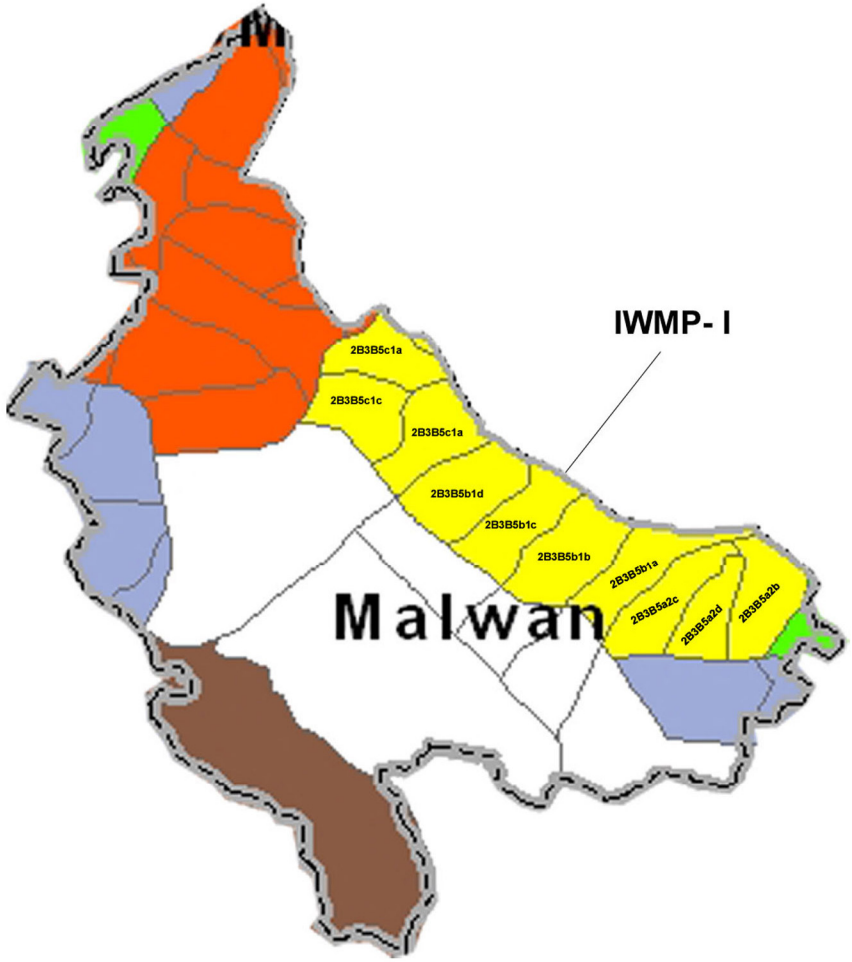
Dist.Fatehpur

MICRO WATERSHED MAP OF FATHEPUR DISTRICT, UTTAR PRADESH
PLAN MAP



Year Wise Watershed Plan Has Been Given Sharda Sahayak Command And Ramganga Command
Deptt Of Land And Water Resources Developement,Govt Of U.P

Block Map, Malwan
District - Fatehpur



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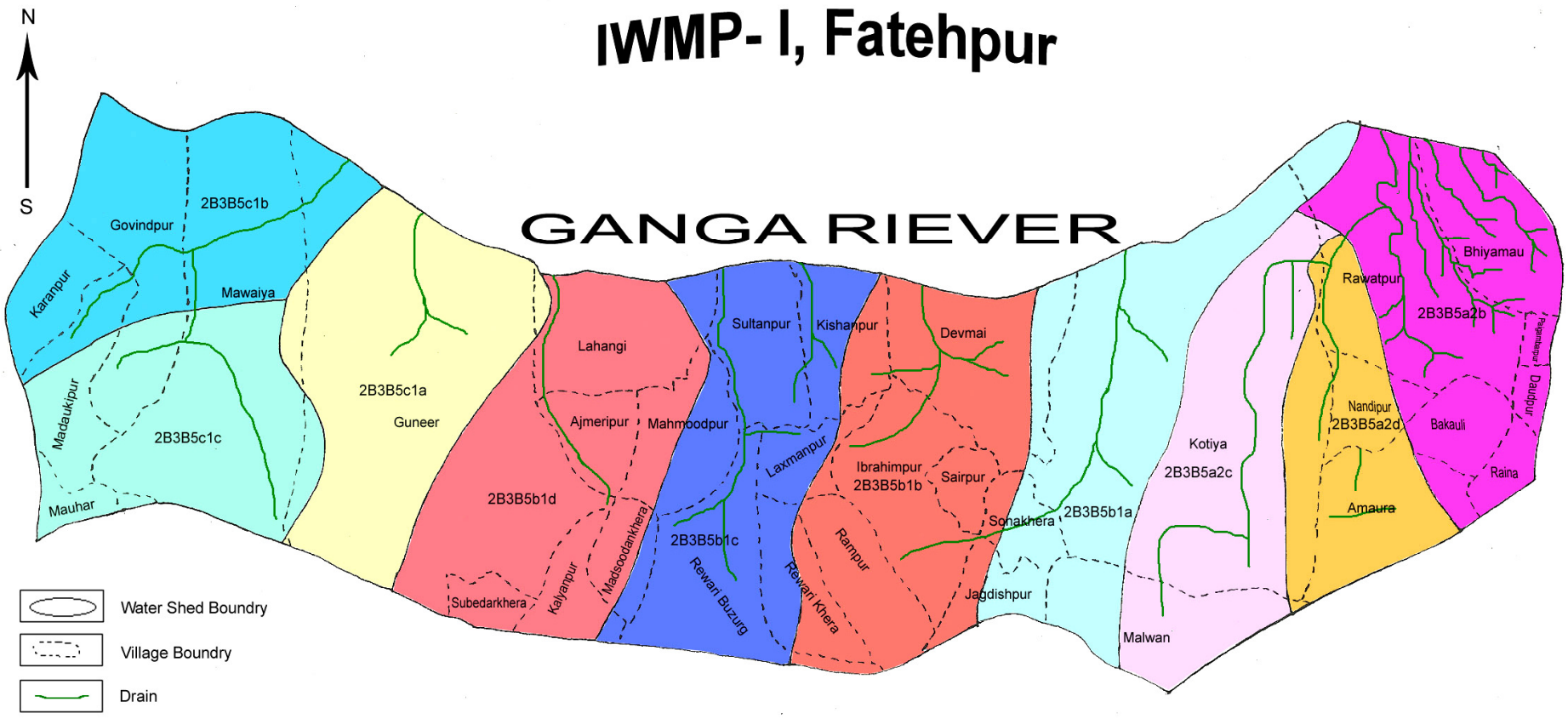
Deptt Of Land And Water Resources Developement,Govt Of U.P


IWMP- I, Fatehpur
N
S
GANGA RIEVER
2B3B5c1b
Govindpur
Karanpur
Mawaiya
Madaukipur
2B3B5c1c
Mauhar
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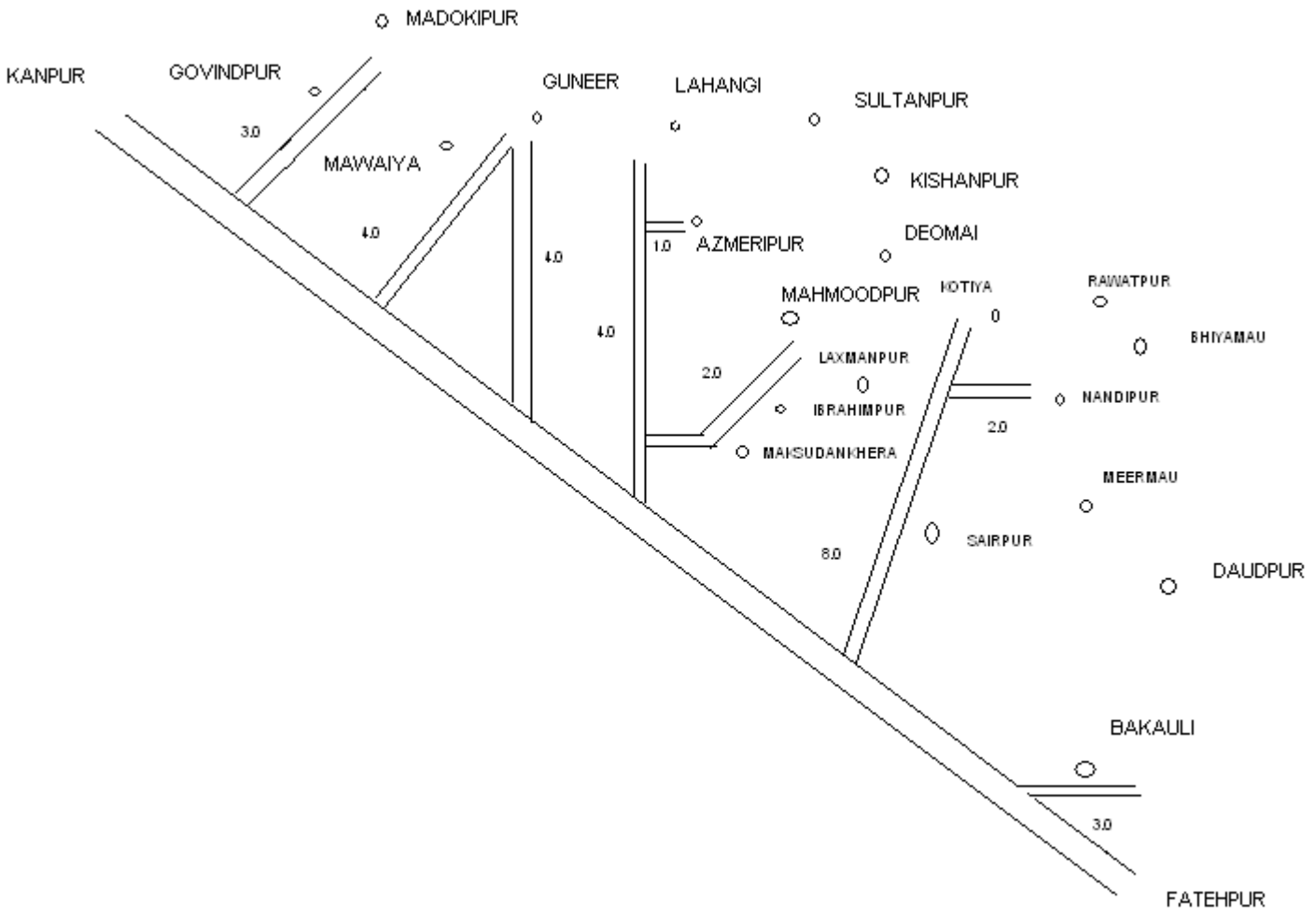
Guneer
Lahangi
Ajmeripur
Mahmoodpur
2B3B5b1d
Subedarkhera
Kalyanpur
Madsoodankhera
Sultanpur
Kishanpur
Laxmanpur
2B3B5b1c
Rewari Buzurg
Rewari Khera
Devmai
Ibrahimpur
2B3B5b1b
Sairpur
Rampur
Sonakhera
2B3B5b1a
Jagdishpur
Malwan
Kotiya
2B3B5a2c
Rawatpur
Bhiyamau
2B3B5a2b
Nandipur
2B3B5a2d
Bakauli
Raina
Amaura
Daudpur
Water Shed Boundry
Village Boundry
Drain

ROAD MAP OF VILLAGES IN WATERSHED OF I.W.M.P. - I[st]



Chapter - II

Location of Watershed

The selected watershed is Fatehpur District (U.P) is located along Kanpur-Allahabad national highway (NH-2), about 6 km from Fatehpur between the longitude $80^0$35' to $80^0$45' and latitude $26^0$5' to $26^0$10'. (Location Map - Page no. 33, Topo Sheet Page no. 277)

PROPOSED LAND USE

Watershed management plan for Ganga watershed is proposed with specific objectives of food efficiency and income and employment generation with environmental security. In plan preparation due importance is given to topology, land suitability, irrigation potentiality, prevailing forming systems, micro-farming situation, farmers preferences and priorities revealed through PRA exercise. Technological options are blended with the indigenous knowledge based on the latest available research / experimental findings for this region. Due attention is given to resource of the farmers and adjustments has made in capital intensive/high resource demanding technological outputs while making them adoptable to the resource poor farmers. Emphasis is given on maximum use of farmyard Manure (FYM) and green manuring. The proposed land use plan of watershed is given as below:

Present and Proposed land use plan of the selected watershed:-

S.No.	Land Use	Present (Ha)	Proposed (Ha)
1.	Agriculture	4781.12	4781.12
(A)	Rain-fed	3123.30	2963.77
	(i) Crop	3114.96	2719.88
	(ii) Agro-forestry	8.34	243.89
(B)	Irrigated	1657.82	1817.35
	(i) Assured	695.13	695.13
	(ii) Partial	962.69	1122.22
2.	Wasteland	816.88	816.88
	(i) Afforestation	---	83.49
	(ii) Pasture	---	---
	(iii) Untreatable	816.88	816.88
3.	Village Land	185.00	185.00
Total		**5783.00**	**5783.00**

PHYSIOGRAPHY: The watershed is in the Doaba of Ganga & Yamuna having moderate slopes and drains into river Ganga through Drains. About 60% of the watershed area has slopes up to 3%, 20% area has slopes up to 1% and 20% area has slopes from 3 to 5 %. A number of streams join the main perennial stream of Ganga. Total 62 numbers of streams of different order are found in watershed, width total length 57950 meters. Stream characteristics of the watershed are present in the Table-1.

TABLE-1 : STREAM CHARACTERISTICS OF SELECTED WATERSHED

Stream Order	Stream Number	Mean Stream Length(M)
Ist Order	43	30700
IInd Order	15	23725
IIIrd Order	4	3525
IVth Order	---	-----
Total	**62**	**57950**

AREA AND ELEVATION : Total area of the watershed is 5783.00 ha. Elevation ranges from 130.88 m to 125.78 m above mean sea level. Twenty one villages, namely Daud Pur, Kishan Pur, Meermau, Lakshman Pur, Bhiyamau, Mahmood Pur, Rawat Pur, Maksoodan Khera, Bakauli, Lahangi, Nandi Pur, Ajmeri Pur, Kotiya, Guneer, Ibrahim Pur, Mawaiya, Deomai, Govind Pur, Sair Pur, Madoki Pur, Sultan Pur are the located in the watershed.

SHAPE: Maximum length and width of the watershed area is 18500 m and 4200 m respectively with a length: width ratio is 4.405 : 1

CLIMATE

The watershed lies in the semi-arid region having tropical climate. The average annual precipitation is 618 mm. Most of the annual rain fall (about 90%) is received during the rainy season (July to September) accompanied with high intensity storm. The temperature in the area rarely goes up to 46.40 ^{0}C during summer and reaches 4.20 ^{0}C in winter.

Watershed Characterstics

Geomorphology:- The area lies in the North of District - Fatehpur of Doaba region. The soil is mainly sandy clay which is easily transportable after detaching causing soil erosion.

Soils:- In the watershed area mainly four types of soils named Sandy Clay, Loamy which are the main soil type of Doaba region.

Drainage:- Due to moderate to steep slopes and presence of a number of drainage lines, drainage is adequate. The watershed forms part of Ganga Basin.

VEGETATION

(a) Natural Vegetation:-

Natural vegetation of the watershed is very poor. The forest vegetation is predominant with Vilayati Babool (Prosopis Juliflora) followed by Babool (Acacia Nilotica). There are occasional occurrence of Neem, Mango, Guava, Amla, Mahua and Shisham. There is no reserve pasture land in the watershed. Grass patches are seen only on the bunds, road sides and other such places. The principal grasses are Doob & Munj.

(b) Horticulture:-

Though no organized orchards are present in the watershed, homestead planting of fruit trees of Mango, Papaya, Amla, Ber, Bel etc. has been practiced by farmers.

(c) Agro-Forestry:-

The agriculture fields of the village do not have any forest or horticultural plantation. At some places isolated trees of Mahua, Babool, Ber, can be seen, whose frequency is less than one tree per running length of 100m.

Baseline Survey

Chapter - III

SOCIO ECONOMIC ANALYSIS OF THE PROJECT

Sustainability and Environmental Security:-

In the proposed watershed management plan of Ganga, proper blending of bio engineering measures will be applied. The proposed land use plan will improve the land utilization index and crop diversification index significantly as compared to existing one. It will help in maintaining Ecosystem integrity on sustained basis.

Economic Analysis:-

Economic analysis of the project is carried out by taking direct benefits and costs, considering 30 year project life at 10% discount rate. For the purpose of economic analysis, whole watershed development plan is divided into four sectors namely agriculture (rain-fed and irrigated), pure horticulture, agro-horticulture and silvi pastoral (Silvi-Pastoral + Sericulture). Net present value (NPV), Benefit Cost Ratio (BCR), criteria is employed to judge the economic efficiency of each enterprise sector and project as a whole.

ECONOMICS OF AGRICULTURAL SECTOR OF GANGA WATERSHED

S.No.	Sector	Area in Ha	NPV (Rs.)	BCR	PBP (yrs.)	IRR %
1.	Irrigated Agriculture	1817.35	295766970.00	1.69 : 1	3	15.77
2.	Rain-fed Agriculture	2963.77	69748470.00	1.41 : 1	1	-
Total Agriculture		**4781.12**	**365515440.00**	**1.55 : 1**	**1**	**-**

ECONOMIC ANALYSIS OF HORTICULTURE SYSTEM IN GANGA WATERSHED CONSIDERING 30 YRS. PROJECT LIFE & 10% DISCOUNT RATE

S.No.	Tree Species	Area (Ha)	NPV (Rs.)	BCR	PBP (yrs.)	IRR %
1.	Amla	23.00	5662370.00	2.75 : 1	12	25.60
2.	Mango	1.00	246190.00	2.65 : 1	11	34.20
3.	Guava	25.00	5539275.00	2.5 :1	9	29.50
4.	Bel	11.40	2525850.00	2.51 :1	8	32.10
Total Horticulture		**60.40**	**13973685.00**	**2.60 : 1**	**10**	**30.55**

ECONOMIC ANALYSIS OF SILVI-PASTORAL OF GANGA WATERSHED

S.No.	Sector	Area (Ha)	NPV (Rs.)	BCR	PBP (yrs.)	IRR %
1.	Silvi-Pastoral	183.49	3643796.00	1.66 :1	17	16.90

SOIL AND LAND CAPABILITY CLASSIFICATION

Soil Morphology:-

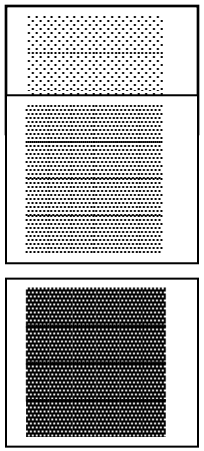
The selected area is situated in the North of District - Fatehpur. The entire watershed is topographically divided into three major land forms. Accordingly, the soils of watershed have been grouped in the three major categories.

(i) Plain Land

(ii) Moderate Slopy Land

(iii) Ravinous Land

Soil Profile:- A Representative Soil Profile



0-1.50 mt. Sandy Loam

1.50 - 6.00 mt. Kankar mixed loamy Soil

Above 6.00 mt. Clay Soil

MORPHOLOGY OF TYPICAL SOLID PROFILE OF GANGA

Horizon	Depth(Cm)	Morphology
A	0 -150	70% Sand and 30% Clay/Loam Loose Soil
B	150 - 800	20% Kankar / Hard Clay and 80% Sandy Soil
C	> 800	Fine Clay Soil

Soil Characteristics and Fertility Status:

Three types of soils are in the watershed area. The fertility status is about normal range. The two soil samples of each village, One for nutrients analysis and one for sulphur and micro nutrients analysis have been send to laboratory. After receiving the analysis effort will be made to motivate the farmers to use nutrients and micro nutrients according to the any analysis report. For this demonstration of crop in Kharif and Rabi both seasons have been proposed under agriculture production activity.

Land Capability Classification (LCC):

Land capability classification (LCC) is crucial for appropriate land use planting consisting of practiced like choice of vegetation / crop, tillage practices, use of scientific method of cultivation and desirous conservation practices, detailed LCC Survey carried out in the Ganga Watershed brought out the prevailing LCC classes as I, II, III, IV

Area Under Various LCC Classes Ganga Watershed

LCC Class	Area Ha.
I	275.00
II	3130.00
III	1270.00
IV	980.00
Total	**5655.00**

Agriculture:-

Various agriculture land uses in the watershed are extended to diversified land capabilities starting from marginal to good class IInd lands. The Watershed distinctly has three types of land i.e. leveled, sloping and degraded and undulating. The agriculture is practiced on all these soil types though the productivity considerably varies. The total area in agriculture in the watershed is about 6859.00 ha out of which 695.13 is irrigated while 3123.30 ha is under Rain-fed agriculture. The water (both for irrigation and drinking) is most scarce natural resource in the watershed. The operation of tube wells for irrigation of agricultural crops frequently leads to the drinking water problem to the farmers for watershed.

The agricultural soils in the watershed have diversified texture i.e. Clay, Silty Clay, Sand mixed with loam which are located in patches throughout the watershed. The irrigation water is conveyed in earthen channels and surface irrigation methods following mainly border method of free flooding method of irrigation by farmers in the watershed. The factors substantially reduce the water use efficiency of limited available and valuable irrigation water in the watershed. To test the quality of irrigation water samples of water each selected village has sent to laboratory for testing.

Rehabitation of waste lands with appropriate drought hardy species like Prosopis juliflora, introduction of suitable multipurpose tree, promoting agro foresting on agricultural lands with appropriate fruit and forest species, suitable vegetative barriers on sloping lands can of high future value in meeting out not only fire wood and fodder demands in the watershed but also for soil and water conservation, Rehabitation of wasteland and substantial income generation for Socio-Economic uplift of farmers in the watershed.

One Year Crop Rotation:-

Single Cropping: Follow - gram, Follow - Mustured

Double Cropping: Urad + Jwar + Til - Mustured, Arahar + Jwar.

Irrigated Agriculture:

One Year Crop Rotation:-

Urad/Moong-Wheat, Urad/Moong-Potato, Urad/Moong-Vegetables, Paddy-Gram, Paddy-Lentil, Maize-Potato.

Crop Productivity:-

Food crop production is a major land based activity in the watershed. Traditional cultivation practices, coupled with poor quality seeds and long duration crops varieties result in low crop yields. Crops are taken under rain-fed as well as irrigated conditions. The yield levels of rain-fed crops are particularly very poor. Large variation has been noticed in productivity of wheat (9 Qtl/Ha) and rice (8.5 Qtl./Ha) under rain-fed and irrigation, condition respectively. At present level of rain-fed farming. The total produce from Rabi and Kharif crops obtained by a medium size of holding owning family can meet food requirements for up to 6 to 7 months only.

The farmers also do not have suitable cropping systems to deal aberrant weather. Weeds impose considerable constrant in producing of both Kharif and Rabi crops under irrigation as well as Rain-fed production system. Use of weedicide is rare in the watershed. The mixed cropping is in practice in limited area with Kharif crops like Bajra and Jawar + Arhar but it is not only irrational but also unscientific and beset with low productivity. Subsequent Rabi crops in general are raised on residual soil moisture under rain-fed production system during past monsoon season.

Imbalanced use of fertilizers is common in not only Rabi and Kharif crops but also in rain-fed and irrigated production system the recommended deep ploughing for enhanced in situ residual soil moisture conservation and higher production is also not followed in the watershed. The shallow ploughing tractors drawn tillage implements are available with the farmers in the watershed but deep ploughing implements yet need to be introduced.

The Soil fertility/health restoration practices like green manuring, crop rotations and intercropping specially with legumes, use of FYM/compost, vermi-compost, Biofertilizers, Soil and Water Conservation measures, use of brought up or in situ mulches are widely lacking in the watershed. The soil and water conservation agronomical measures like seeding and ploughing across the slope, wed mulching, agro-forestry, vegetative barriers etc. also completely lack in the watershed.

Indigenous Technological Knowledge (I.T.K.) :-

Agriculture is an old age occupation which farmers have practiced and improved in their own manner to earn livelihood under the condition of area. The villagers have their traditional village ponds, practice of field bunding, production of Arhar crop on the bunds in paddy area which typically constitute agriculture related ITKs in the watershed. The indigenous farming technology in the watershed is observed to cover a vast spectrum of activities involving tillage, implement crop selection, storage of produce and value condition in Bundelkhand region line showing is in the traditional practice due to the soil condition. Seed drill, seed comfort drill is used with tractor and Nai/Chonga with indigenous plough. These ITKs are eco-friendly, cost effective and involving use of local materials with farmers own wisdom. These techniques equip farmers with skills and strength to adopt to the prevailing adverse conditions.

Forest and Other Vegetation

Forests:-

The selected watershed has no resource forest area.

Horticulture / Agro-forestry

Agro-Forestry:-

The Agro-forestry practices are highly lacking in the watershed though it has good potential under existing dispositions and may play a vital role particularly with respect to minimization of cropping risk, built up soil fertility and productivity soil conservation, partly meeting out the fire wood demand of rural community and moreover, optimizing the watershed the other agro-forestry systems like agri-silvi, silvi-pastoral, band and boundary plantations also have good potential to cater the firewood and fodder demands of the rural community it the watershed. The existing area under Agro-Forestry is almost negligible. Prosopis Juliflora may be planted as block or sole plantation especially on marginal and degraded lands in the watershed. The Agro-Forestry interventions comprising of Ber, Bel, Amla, Guava, Teak etc. may be applied for benefit of farmers under rain-fed to irrigated production systems on leveled to sloppy and marginal agricultural using proper planting techniques and termite control measures. The multipurpose trees may also help in supplementing fire wood and fodder demands of the rural community in the watershed and may be planted as hedge rows on rain-fed, marginal and degraded lands.

Horticulture:-

The watershed does not have organized orchards; however farmers have fruit plants (Mango, Ber, Bel, Guava, Mahua, Amla etc.) near the homesteads and kitchen gardens. The climate and soil of the area is favorable for fruit growing for sub tropical fruits in the lower reaches. Organized orchards, commercial vegetable cultivation, Agro Horticulture and other system of agro forestry etc. are lacking but have good potential in the watershed. The watershed is located near the National Highway and North Central Railway line and has scope to transport the produce to the nearest market Allahabad, Kanpur, even to Delhi.

Conclusion:

The land capability classification of the Ganga watershed provides reasonable good information with regard to capability of soil, that could be used for agriculture, agri-horticulture, silvi-culture and pasture development. The majority of land form is coming under class II, which give an insight of good agriculture production potential of these watershed. The productivity of these lands could be further enhanced by adoption of simple soil & water conservation measures like contour bunding in-situ moisture conservation practices. In class III submergence bund, marginal and peripheral bund are planned and in class IV, gully plugging structures, earthen check dam and water harvesting bunds are proposed with permanent Pucca Drop Spill Way structures.

HUMAN AND LIVE STOCK POPULATION

Human Population:-

The total population of twenty one villages of the watershed is 36950 with average family size of 5 persons. Detail attached on page no. 42

Live Stock Population:-

Total live stock population of the watershed is 22568. Buffalo is preferred as milk animal compare to cow milk yield is very low. Goats are kept mainly for the meat purpose. Homestead poultry rearing is common among marginal farmers. The breakup of live stock population is attached on Page No. 52

Land Holdings:-

Majority of the watershed farmers are in category of marginal (< 1 ha) and small (1-2 ha). These small land holding are further scattered in different places which makes cultivation very difficult. Distribution of farm families according to the size of their land holdings is given as Page No. 31

VILLAGE-WISE HUMAN POPULATION

S.No.	Name Of Village	Male	Female	Children	Total Population
1.	Bhiyamau	370	264	378	**1012**
2.	Meermau	221	177	241	**639**
3.	DaudPur	483	409	547	**1439**
4.	Bakauli	431	382	393	**1206**
5.	NandiPur	95	75	96	**266**
6.	Rawat Pur	663	491	743	**1897**
7.	Kotiya	2412	2155	2943	**7510**
8.	Sair Pur	181	144	184	**509**
9.	Deo Mai	395	301	541	**1237**
10.	Ibrahim Pur	460	393	586	**1439**
11.	Laxman Pur	212	162	220	**594**
12.	Kishan Pur	125	98	132	**355**
13.	Sultan Pur	370	264	378	**1012**
14.	Lahangi	967	857	1267	**3091**
15.	Azmeri Pur	25	18	33	**76**
16.	Mahmud Pur	90	81	132	**303**
17.	Maksudan Khera	220	191	257	**668**
18.	Guneer	2575	2092	3025	**7692**
19.	Mawaiya	811	692	1171	**2674**
20.	Govind Pur	395	318	423	**1136**
21.	Madoki Pur	720	583	779	**2082**
Total		**12279**	**10119**	**14552**	**36950**

Livelihood Status

The watershed has moderate communication facilities and all 21 villages are approachable through motorable road. Literacy rate in the watershed is very low because except some village all villages are having education facilities up to Junior High School. Only Three Intermediate colleges in village Kotiya, GovindPur, MadokiPur are existing. All the villages are electrified. Out of 21 villages television is available in 20 villages only. Nearest small market is Malwan, Bindki and district headquarter Fatehpur. Small land holdings (average less than 1.0 ha) with large family size (average 6 person) are more than 51% of the total population living below poverty line indicate poor socio-economic status of the watershed community However a strong community spirit among the village show a positive indication for the success of any programme implemented in a participatory mode. Traditionally, the entire village community participates in the individual's work needing labour such as sowing, harvesting, house construction works etc. social maps of the watershed villages drawn by villagers themselves, depicting villages features is attached from Page No. 216 to Page No. 275 .

VILLAGE-WISE ANIMAL POPULATION

S.No.	Name Of Village	Buffaloes	Cows	Bullock	Goat	Other	Total
1.	Bhiyamau	147	48	50	109	187	**541**
2.	Meermau	119	18	49	74	-	**260**
3.	DaudPur	289	61	70	65	-	**485**
4.	Bakauli	138	35	30	43	36	**282**
5.	NandiPur	53	12	14	57	103	**239**
6.	Rawat Pur	251	67	74	271	335	**998**
7.	Kotiya	2182	291	397	578	328	**3776**
8.	Sair Pur	35	8	16	60	12	**131**
9.	Deo Mai	143	185	63	145	65	**601**
10.	Ibrahim Pur	166	87	18	113	72	**456**
11.	Laxman Pur	800	350	50	500	100	**1800**
12.	Kishan Pur	250	40	50	60	100	**500**
13.	Sultan Pur	1000	300	200	350	150	**2000**
14.	Lahangi	645	188	232	610	1015	**2690**
15.	Azmeri Pur	5	5	6	25	-	**41**
16.	Mahmud Pur	60	30	50	300	-	**440**
17.	Maksudan Khera	25	10	8	250	7	**300**
18.	Guneer	1995	466	344	1780	426	**5011**
19.	Mawaiya	656	124	245	504	25	**1554**
20.	Govind Pur	213	38	48	135	-	**434**
21.	Madoki Pur	345	52	22	226	-	**645**
Total		**9619**	**2380**	**2044**	**6454**	**2071**	**22568**

STATUS OF FOOD REQUIREMENT AND AVAUILABILITY PER ANNUM IN GANGA WATERSHED

S.No.	Item	Requirement (Q / yr.)	Before Project		Proposed	
			Availability (Q / yr.)	Deficit or Surplus (Q/ yr.)	Availability (Q / yr.)	Deficit or Surplus (Q/ yr.)
1.	Cereals	48035	44170	- 3865	49595	+ 1560
2.	Pulses	14090	9670	- 4420	15300	+ 1210
3.	Oil Seeds	36900	27560	- 9340	38320	+ 1420
4.	Vegetables	44340	23780	- 20560	44590	+ 250

Employment Generation

Labour migration in search of gainful employment is one of the major problems in the remote watershed in particular. Casual employment opportunities to the tune of more than 2.623 lakhs will be generated during the implementation of the project activities. However, changes in the land use pattern and adoption of other subsidiary enterprises will generate employment opportunities for persons of 3.175 lakhs in the watershed.

WATER RESOURCE DEVELOPMENT AND SOIL CONSERVATION MEASURES

tatus of Present water Resources Utilization:-

There is no natural water body in the selected area which may used for irrigation. Present assured / Partial Irrigation is done by private tub wells.

Proposed Plan For Irrigation Of Water Resources:-

Sprinkler sets for irrigation from private tube well are distributed by Agriculture Development to Tube Well holders on the basis of & Irrigation group. Effort will make to help the tube well holders of selected area to from group and to get sprinkler sets. Therefore, more area will be irrigated by the available irrigation water.

New Water Harvesting Structures:-

In the 514.66 Ha area new and renovation of existing watershed harvesting structure / Gully Plug / earthen C.D. will be constructed for water harvesting.

Ground Water Recharge:-

In order to augment the flow in the drainage line, it is necessary to undertake moisture and water recharge measure in the watershed area. For the purpose of ground water recharge 25 Nos. of recharge filters and 19 Nos. of soak pits are planned in the selected area.

Crop Production:-

In the light of the land capability classification of the watershed and need of the farmers, the reallocation of watershed area rain-fed and irrigated lands has been done for improving productivity, income generation and maintaining ecological balance. The production crop management plan has the following salient features:

Organic Farming System:-

Organic Farming System will be achieved in the following manner:

(1) Maximum use of crop residues in the integrate plant Nutrients System (IPNS)

(2) Prevision of legumes composed in the cropping system.

(3) Green manuring with appropriate legumes.

(4) Rapid compost using crop residue, domestic and farm waste animal dung.

(5) Milching and Crop Residue Management:- Sources of milch material includes weeds, pruning from agro-foresting trees and in situ grown legumes and green manure crops. The concept of live milching is based on the principle of mixed cropping whereby a fast growing legumes is established before or simultaneously along with a widely spaced seasonal grain crops such maize and a incorporated into the soil at an appropriate stage to act on as a milch. Application of organic milch material 4 - 5 t / ha is recommended.

(6) Green Manuring:- To improve the organic matter and physical condition of the soils, green manuring crops like Dhaincha and sun hemp which supply 20 - 30 t / ha of green mutter and 85 - 125 kg/ha of Nitrogen shall be raised and incorporated into the soil. In 1966, ha area green manuring is planned.

(7) Seed Treatment With Rhyzobium Culture:- The seed of leguminous crop like black gram, soyabeen, pea etc. should be treated with Rhyzobium culture before sowing.

(8) Tillage operation:- It is advisable to carry out tillage operation like ploughing followed by planking just after the harvest of Kharif crops. This will be helpful in conserving moisture for sowing and germination of Rabi crop in addition, coverage of soil surface with milch material is also recommended to ensure the soil moisture.

(9) Introduction of Improved Seeds / Varieties:- Short duration and high yielding varieties suitable for this region have been proposed in long duration verities. Demonstration of High Yielding Varieties (HYV's) of different crops in --- ha is planned in the watershed however for self sufficiency in seed requirement farmers of the watershed will be involved to produce required quantity of seed of the recommended crop varieties.

(10) Sowing Methods:- Agronomical practices like contour cultivation, strip or inter-cropping, optimum time of sowing, optimum plant population by keeping proper distance through line sowing and placement of fertilizer below the seed will help in enhancing the crop yields without involving monetary inputs.

(11) Control of Insects Pest and Diseases:- Pod borer in gram is the major insect in the watershed area leading to loss in crop productivity. Similarly white blister is also a common disease in the mustard crop the management strategies of these insects, pests and diseases will also be demonstrated in the watershed for benefit of the growers.

(12) Dry Land horticulture:- In the selected area 243.89 ha land is planned for horticulture and agro horticulture. Species like Amla, Guava, Ber, Bel, and Lemon will be planted at suitable spacing in the watershed.

VILLAGE-WISE HYDROLOGICAL DATA

S.No.	Name Of Village	Ground Water Stata Month April to June	Particular Place
1.	Bhiyamau	65 Feet	Door well of Kunwar S/O Bhageerath
2.	Nandi Pur	80 Feet	Door well of Dharam Pal S/O Budhri
3.	Kotiya	50 Feet	Door well of Rahul Singh
4.	Deomai	65 Feet	Door well of Ram Swaroop Singh
5.	Azmeri Pur	60 Feet	Door Hand Pump of Chhote Lal
6.	Maksudan Khera	39 Feet	Door Hand Pump of Rakesh Kumar Agnihotri
7.	Mahmood Pur	60 Feet	Door Hand Pump of Ram Ratan Sonkar
8.	Lahangi	40 Feet	Door Hand Pump of Gyan Chandra Singh
9.	Guneer	50 Feet	Door well of Ram Babu
10.	Govind Pur	50 Feet	Door Hand Pump of Sankatha Prasad
11.	Madoki Pur	52 Feet	Door Hand Pump Ashok Kumar
12.	Mawaiya	36 Feet	Door Hand Pump Shakti Dev Singh

VILLAGE-WISE INFRASTRUCTURE SOCIAL FEATURES

S. No	Name of Village	Pucca Road	Electricity	Primary School	J. H. School	Inter College	Post Office	P.H.C.	Bank	Vetnery Hospital	Co-Op. Society	Market	Ag. Service Center
1.	Bhiyamau	√	√	√	√	7 KM	3 KM	3 KM	10 KM	10 KM	10 KM	20 KM	20 KM
2.	Meermau	√	√	√	4 KM	4 KM	3 KM	3 KM	10 KM	15 KM	15 KM	15 KM	15 KM
3.	DaudPur	√	√	√	√	5 KM	√	√	8 KM	8 KM	10 KM	10 KM	12 KM
4.	Bakauli	√	√	√	2 KM	5 KM	2 KM	2 KM	6 KM	12 KM	10 KM	8 KM	12 KM
5.	NandiPur	√	√	√	2 KM	2 KM	6 KM	6 KM	6 KM	6 KM	6 KM	6 KM	6 KM
6.	Rawat Pur	√	√	√	√	5 KM	5 KM	8 KM	8 KM	8 KM	8 KM	8 KM	22 KM
7.	Kotiya	√	√	√	√	√	√	√	5 KM	5 KM	5 KM	5 KM	24 KM
8.	Sair Pur	√	√	√	3 KM	3 KM	3 KM	3 KM	8 KM	8 KM	8 KM	8 KM	24 KM
9.	Deo Mai	√	√	√	√	5 KM	5 KM	8 KM	8 KM	8 KM	8 KM	8 KM	24 KM
10.	Ibrahim Pur	√	√	√	√	3 KM	3 KM	8 KM	8 KM	8 KM	8 KM	8 KM	25 KM
11.	Laxman Pur	√	√	√	3 KM	3 KM	5 KM	6 KM	5 KM	6 KM	12 KM	3 KM	24 KM
12.	Kishan Pur	√	√	2 KM	4 KM	4 KM	4 KM	6 KM	5 KM	6 KM	12 KM	3 KM	24 KM
13.	Sultan Pur	√	√	√	3 KM	4 KM	4 KM	8 KM	8 KM	8 KM	10 KM	4 KM	25 KM
14.	Lahangi	5 KM	√	√	√	9 KM	7 KM	7 KM	7 KM	7 KM	11 KM	5 KM	20 KM
15.	Azmeri Pur	0.8 KM	√	√	√	4 KM	5 KM	6 KM	6 KM	6 KM	12 KM	4 KM	22 KM
16.	Mahmud Pur	√	√	√	√	3 KM	3 KM	5 KM	4 KM	3 KM	10 KM	3 KM	24 KM
17.	Maksudan Khera	√	√	√	2 KM	2 KM	4 KM	4 KM	4 KM	4 KM	10 KM	2 KM	22 KM
18.	Guneer	√	√	√	√	4 KM	√	4 KM	4 KM	4 KM	6 KM	15 KM	15 KM
19.	Mawaiya	√	√	√	√	4 KM	√	4 KM	4 KM	4 KM	6 KM	15 KM	15 KM
20.	Govind Pur	√	√	√	√	√	√	6 KM	7 KM	6 KM	6 KM	√	6 KM
21.	Madoki Pur	√	√	√	√	√	√	7 KM	8 KM	7 KM	7 KM	√	7 KM

SOIL AND WATER TESTING

For soil samples are taken from each village in such a way that they cover all type of existing soil in the village area. Out of four soil samples these samples have sent to the district level soil testing laboratory Fatehpur for general testing and one sample from each village has sent to commissionary level soil testing laboratory Allahabad for Sulpher and micronutrients testing vide letter no. **B.S.A. / 78 / Pra. Anu. / Soil Testing / 2010-11 Dated 10.06.2010** respectively. The receipt received from laboratory has enclosed.

Similarly two water samples are of well and one of hand pump has taken from each village and has sent to Assistant Director, soil testing laboratory Alambagh, Lucknow for testing vide letter no. **B.S.A. / 76 / Pra. Anu. / Water Testing / 2010-11 Dated 05.06.2010** received from laboratory has enclosed here. The testing report is awaited and action will be taken on paper recommendations of laboratory.

Institution Building

&

Project Management

DETAIL OF WATERSHED COMMITTEE

S.No.	Name of Gram Panchyat/Village	Date of Constitution	Name of President	Name Of Secretary	Member of user Group	Member Of SHG	Female Member	SC Member	Land Less Member	Member of WDT	Wdt member
1.	Kotiya	06.06.10	Atul Kumar Singh	Jagpal Singh	Phool Chandra	SMT Kamla Devi	Ganga Devi	Suraj Bali	Ram Shankar	Sant Das Sahu	Kiran Devi
2.	Bhiya Mau	10.06.10	Ram Pratap Singh	Santosh Kumar	Bhageerath	Madan Lal	Chheddi Devi	Mool Chandra	Ram Vishal	Ram Khelawan	Kiran Devi
3.	Govind Pur	08.06.10	Chandra Prakash	Dharmendra Kumar	Daya Shankar	Shital Deen	Nirmala	Babu Ram	Shankar	Ram Babu	Kiran Devi
4.	Deomai	12.06.10	Vijay Pal	Ram Raj	Dhan Raj	Nanki Devi	Ram Dulari	Ram Raj	Daya Ram	Raj Narayan	Kiran Devi
5.	Mawaiya	12.06.10	Janak Dulari	Shiv Prakash	Sita Ram	Vimla Devi	Soni Devi	Raj Narayan	Chandrika	Suresh Chandra Mittal	Kiran Devi
6.	Nandi Pur	10.06.10	Haripal	Karan Prasad	Ramakant	Ramrati	Vidyawati	Bhadai	Ram Balak	S.C.Mittal	Kiran Devi
7.	Guneer	04.06.10	Virendra Kumar	Chandrika Singh	Chandrika Singh	-	Asha Devi	Chhote Lal	Luli Lal	Shiv Mohan Awasthi	Kiran Devi
8.	Sultan Pur	08.06.10	Ram Suhawan	Laxman	Shiv Shankar	Raj Kumari	Shanti Devi	Ram Pratap	Vijay Bahadur	Premchandra Sharma	Kiran Devi
9.	Ibrahim Pur	15.06.10	Kamta Prasad	Sukhram	Achal Singh	Rekha	Gayatri Devi	Sohan Lal	Buddha Raj	Premchandra Sharma	Kiran Devi
10.	Lahnagi	28.05.10	Ram Ratan	Gyan Chandra Singh	Narendra Bahadur Singh	Ramakant	Rani	Moti Lal	Ram Pal	Sukh Ram Singh	Kiran Devi

FORMATION OF SELF HELP GROUP

S.No.	Name of Village	Name of SHG	President	Secretary	Work
1.	Deomai	Maan Chandrika Devi	Smt. Nanki	Suman Devi	Goat Keeping
2.	Govind Pur	Shri Sheetal Maiya	Shri Sheetal Deen	Suraj Pal	Dairy
3.	Chachi Khera Bhiyamau	Jai Maan Gange	Daya Ram	Santosh Kumar	Badh Making
4.	Ghazi Khera	Kaali Maan	SMT Anita	Smt. Malti	Goat Keeping
5.	Sultan Pur	Jai Kamta Nath	SMT Rajkumari	Shanti Devi	General Merchant
6.	Madrahi	Baramdev Baba	Smt. Shiv Kumari	Phool kali	Goat keeping
7.	Dudhi Kagar	Maa chandrika	Janak Dulari	Shakuntala	Sewing
8.	Nandi Pur	Maan Kali	Ram Pyari	Shanti	Sewing
9.	Lahangi	Baramdeo Baba	Vansh Gopal	Ram Bahadur	General Merchant
10.	Lahangi	Motiya Devi	Prithvi Pal	Santosh Kumar	Poltry Farm
11.	Rawat Pur	Nimbuwa Ghat	Devendra	Chhotey	Flower Ag.
12.	Chachi Khera	Maan Parwati	Urmila	Shiv Kumari	Badh Making
13.	Bahati	Sonkar	Raj Kumar	Rahul	Poltry Farm
14.	Dubki	Jai Bhole	Ram Lakhan	Hari Lal	Dairy
15.	Dubki	Kali Ji	Ramesh Chandra	Ayodhya Prasad	Dairy
16.	Dubki	Radha	Savitri	Kusuma	Goat Keeping
17.	Bahati	Seeta	Sunaina	Rekha	Vax Making
18.	Sona Khera	Jai Laxmi	Usha Devi	Pushpa Devi	Dairy

19.	Sona Khera	Kamta Nath	Ram Prakash	Jagram	Dairy
20.	Govind Pur	Sharda Maiya	Vinod Kumar	Anil Kumar	Dairy
21.	Kotiya	Sharda Maa	Vinod Singh	Dharam Pal	Dairy
22.	Maksoodan Khera	Ambedkar	Govindi	Somvati	General Merchant
23.	Peeran Khera	Peer Baba	Ashok	Ram Prasad	Vegetable
24.	Goonjhi	Saain	Shakuntala	Nidhi	Sewing

DETAILS OF USER GROUPS

User Groups (U.G.) have constituted of homogeneous groups of persons which are more affected by each work / related activity and has include those having land holdings within the watershed area.

S.No.	Name of Micro Watershed	Area of Micro Watershed	Selected Area for Treatment	No. of User Group Constituted
1.	2B3B5a2b	608.90	548.00	11
2.	2B3B5b1c	602.92	543.00	13
3.	2B3B5b1b	703.86	694.00	11
4.	2B3B5b1a	631.61	568.00	10
5.	2B3B5a2c	545.04	491.00	08
6.	2B3B5c1a	594.24	535.00	10
7.	2B3B5a2d	393.80	354.00	08
8.	2B3B5c1b	474.00	427.00	07
9.	2B3B5b1d	693.88	624.00	11
10.	2B3B5c1c	534.75	421.00	07
Total		**5783.00**	**5205.00**	**96**

PROJECT IMPLEMENTING AGENCY (PIA)

U.P. Government, Land Development And Water Resources Department Section 1- Lucknow has nominates as PIA to Bhoomi Sanrakshan Unit, Land development and water resources Department Fatehpur for IWMP Ist .

Detail Staffing pattern of PIA:

S.No.	Name	Designation	Qualification	Experience (year)
1	Shri Lalmani Prasad	Bhoomi Sanrakshan Adhikari	High School, Diploma in Ag. Engg.	31
2	Shri Ram Bahadur Tripathi	Junior Engineer	Intermediate, Diploma in Civil Engg.	30
3	Shri Ram Lakhan Verma	Junior Engineer	Intermediate, Diploma in Ag. Engg.	28
4	Shri Heera Lal Gupta	Accountant	B.Com.	30
5	Shri Pramod Kumar Sharma	Sr. Clerk	B.A.	30
6	Shri Rama Kant Yadav	Jr. Clerk	B.A.	19
7	Shri Ramendra Pal	Draft Man	M.A.	07
8	Shri Swadesh Mishra	Tracer	Intermediate	10
9	Shri Suresh Chandra Mittal	A.S.C.I.	M. Sc. Ag.	07
10	Shri Ram Babu	Work Incharge	Intermediate	25
11	Shri Sukhram Singh	Work Incharge	Intermediate	25
12	Shri Ram khelawan	Work Incharge	B.A.	25
13	Shri Prem Chandra Sharma	Work Incharge	B.A.	25
14	Shri Shiv Mohan Awasthi	Work Incharge	B.A.	21
15	Shri Sant Das Sahu	Work Incharge	Intermediate	22
16	Shri Raj Narayan Srivastava	Work Incharge	M.A.	20

17	Dr. Sant Ram	Work Incharge	M.Sc. Ag., Ph.D.	07
18	Shri Vishobha Kumar Tripathi	Munshi	B.A.	20
19	Shri Subhash Chandra	Driver	-	30
20	Shri Jagjit Prasad	IV Class	High School	21
21	Shri Arjun Vibhakar	IV Class	Class VIIIth	07
22	Smt. Vimla Devi	IV Class	Class Vth	14

Institutional Arrangement at Project level

Project management Agency (PIA)

The SLNA would evolve appropriate mechanisms for selecting and approving the PIA's, who would be responsible for implementation of watershed projects in different districts. These PIA's may include relevant line departments. Autonomous organizations under State/Central governments, Government Institutes/Research bodied, Intermediate Panchayat, Voluntary Organization (VOS).

However, the following criteria may be observed in the selection of these PIA's:

1- They should preferably have prior experience in watershed related aspects or management of watershed development projects.

2- They should be prepared to constitute dedicated Watershed Development Teams.

Selected PIA's will sign a contract/MOU with the concerned DQWSUs. District Level Committee as referred in para - 29 that will spell out well - defined annual outcomes, against which the performance of each PIA will be monitored each year and evaluated on a regular basis by institutional evaluators from a panel approved by the SLNA/Departmental Nodal Agency at the central level.

Each PIA must put in position a dedicated watershed development team (WDT) with the approval of DWDU.

The WDT will be hired on contract/deputation. Transfer etc for a term not exceeding the project period. The composition of the WDT will be indicated in the contract/MOU. No programmed funds for DPR and watershed works under any circumstances should be released to either the PIA or Watershed Committee (WC) unless the composition of the WDT has been clearly indicated in the MOU/contract and the team members are fully in place.

Roles and Responsibilities of the PIA:

The project Implementing Agency(PIA) will provide necessary technical guidance to the Gram Panchayat for preparation of development plans for the watershed through Participatory Rural Appraisal(PRA) exercise, undertake community organization and training for the village communities, supervise watershed development activities, inspect and authenticate project accounts, encourage adoption of low cost technologies and build upon indigenous technical knowledge, monitor and reviews the overall project implementation and set up institutional arrangements for post-project operation and maintenance and further development of the assets created during the project period.

The PIA, after careful scrutiny, shall submit the action plan for watershed development project for approval of the DWDU/DRDA and other arrangements. The PIA shall submit the periodical progress report to DWDU. The PIA shall also arrange physical, financial and social audit of the work undertaken. It will facilitate the mobilization of additional financial resource from other government programmers, such as NREGA, BRGF, SGRY, Nation Horticulture Mission, Tribal, Welfare Schemes, Artificial Ground Water Recharging, Greening India, etc.

WATERSHED DEVELOPMENT TEAM (WDT)

The WDT is an integral part of the PIA and will be set up by the PIA. Each WDT should have at least four members, broadly with knowledge and experience in agriculture, soil science, water management, social mobilization and institutional building. At least one of the WDT members should be a woman. The WDT members should preferably have a professional degree. However, the qualification can be relaxed by the DWDU with the approval of SNLA in deserving cases keep8ing in vies the practical field experience of the candidate. The WDT should be located as close as possible to the watershed project. At the same time, it must be ensured that the WDT should function in close collaboration with the team of experts at the district and state level. The expenses towards the salaries of the WDT members shall be charged from the administrative support to the PIA. DWDU will facilitate the training of the WDT members.

ROLES AND RESPONSIBILITIES OF WDT:

The WDT will guide the watershed committee (WC) in the formulation of the watershed action plan. An indicative list of the roles and responsibilities of the WDT would include among others, the following.

a. Assist Gram Panchayat /Gram Sabha in constitution of the watershed committee and their functioning.

b. Organizing and nurturing User Groups and Self-help Groups.

c. Mobilizing women to ensure that the perspectives and interests of women are adequately related in the watershed action plan.

d. Conducting the participatory base - line surveys, training and capacity building.

e. Preparing detailed resource development planed including water and soil conservation or redamation etc. to promote sustainable livelihood at household level.

f. Common property resource management and equitable sharing.

g. Preparing Detailed Project Report (DPR) for the consideration of Gram Sabha.

h. Undertake engineering surveys; prepare engineering drawing and cost estimated for any structure to be built.

i. Monitoring, checking, accessing, and undertaking physical verification and measurement of work done.

j. Facilitating the development of livelihood opportunities for the landless.

k. Maintaining project accounts.

l. Arranging physical, financial and social audit of the work undertaken.

m. Setting up suitable arrangements for post-project operation, maintenance and future development of the assets created during the project period.

CONSTITUTION OF W.D.T. BY P.I.A. (I)

S.No.	Name of the member	Qualification	Subject	Experience (year)
1	Shri Premchandra Sharma	B.A.	Member	25
2	Shri Ram Lakhan Verma	Intermediate, Diploma in Ag. Engg.	Water Management	28
3	Shri Suresh Chandra Mittal	M Sc. Ag.	Agriculture	07
4	Shri S. P. Singh	-	Soil Science	-
5	Smt. Kiran Devi	B.A.	Social Mobilization	10

CONSTITUTION OF W.D.T. BY P.I.A. (II)

S.No.	Name of the member	Qualification	Subject	Experience (year)
1	Shri Ram Khelawan	B.A.	Member	25
2	Shri Ram Lakhan Verma	Intermediate, Diploma in Ag. Engg.	Water Management	28
3	Shri Suresh Chandra Mittal	M Sc. Ag.	Agriculture	07
4	Shri S. P. Singh	-	Soil Science	-
5	Smt. Kiran Devi	B.A.	Social Mobilization	10

CONSTITUTION OF W.D.T. BY P.I.A. (III)

S.No.	Name of the member	Qualification	Subject	Experience (year)
1	Shri Sant Das Sahu	Intermediate	Member	22
2	Shri Ram Lakhan Verma	Intermediate, Diploma in Ag. Engg.	Water Management	28
3	Shri Suresh Chandra Mittal	M Sc. Ag.	Agriculture	07
4	Shri S. P. Singh	-	Soil Science	-
5	Smt. Kiran Devi	B.A.	Social Mobilization	10

CONSTITUTION OF W.D.T. BY P.I.A. (IV)

S.No.	Name of the member	Qualification	Subject	Experience (year)
1	Shri Raj Narayan Srivastava	M.A.	Member	20
2	Shri Ram Lakhan Verma	Intermediate, Diploma in Ag. Engg.	Water Management	28
3	Shri Suresh Chandra Mittal	M Sc. Ag.	Agriculture	07
4	Shri S. P. Singh	-	Soil Science	-
5	Smt. Kiran Devi	B.A.	Social Mobilization	10

CONSTITUTION OF W.D.T. BY P.I.A. (V)

S.No.	Name of the member	Qualification	Subject	Experience (year)
1	Shri Premchandra Sharma	B.A.	Member	25
2	Shri Ram Lakhan Verma	Intermediate, Diploma in Ag. Engg.	Water Management	28
3	Shri Suresh Chandra Mittal	M Sc. Ag.	Agriculture	07
4	Shri S. P. Singh	-	Soil Science	-
5	Smt. Kiran Devi	B.A.	Social Mobilization	10

CONSTITUTION OF W.D.T. BY P.I.A. (VI)

S.No.	Name of the member	Qualification	Subject	Experience (year)
1	Shri Ram Bahadur Tripathi	Intermediate, Diploma in Civil Engg.	Water Management	30
2	Shri Suresh Chandra Mittal	M Sc. Ag.	Member	07
3	Shri Suresh Chandra Mittal	M Sc. Ag.	Agriculture	07
4	Shri S. P. Singh	-	Soil Science	-
5	Smt. Kiran Devi	B.A.	Social Mobilization	10

CONSTITUTION OF W.D.T. BY P.I.A. (VII)

S.No.	Name of the member	Qualification	Subject	Experience (year)
1	Shri Ram Bahadur Tripathi	Intermediate, Diploma in Civil Engg.	Water Management	30
2	Shri Ram Babu	Intermediate	Member	25
3	Shri Suresh Chandra Mittal	M Sc. Ag.	Agriculture	07
4	Shri S. P. Singh	-	Soil Science	-
5	Smt. Kiran Devi	B.A.	Social Mobilization	10

CONSTITUTION OF W.D.T. BY P.I.A. (VIII)

S.No.	Name of the member	Qualification	Subject	Experience (year)
1	Shri Ram Bahadur Tripathi	Intermediate, Diploma in Civil Engg.	Water Management	30
2	Shri Sukhram Singh	Intermediate	Member	25
3	Shri Suresh Chandra Mittal	M Sc. Ag.	Agriculture	07
4	Shri S. P. Singh	-	Soil Science	-
5	Smt. Kiran Devi	B.A.	Social Mobilization	10

CONSTITUTION OF W.D.T. BY P.I.A. (IX)

S.No.	Name of the member	Qualification	Subject	Experience (year)
1	Shri Ram Bahadur Tripathi	Intermediate, Diploma in Civil Engg.	Water Management	30
2	Shri Shiv Mohan Awasthi	B.A.	Member	21
3	Shri Suresh Chandra Mittal	M Sc. Ag.	Agriculture	07
4	Shri S. P. Singh	-	Soil Science	-
5	Smt. Kiran Devi	B.A.	Social Mobilization	10

CONSTITUTION OF W.D.T. BY P.I.A. (X)

S.No.	Name of the member	Qualification	Subject	Experience (year)
1	Shri Ram Bahadur Tripathi	Intermediate, Diploma in Civil Engg.	Water Management	30
2	Shri Suresh Chandra Mittal	M Sc. Ag.	Member	07
3	Shri Suresh Chandra Mittal	M Sc. Ag.	Agriculture	07
4	Shri S. P. Singh	-	Soil Science	-
5	Smt. Kiran Devi	B.A.	Social Mobilization	10

Management / Action Plan

Chapter - V

APPEAL TO THE PEOPLE OF I.W.M.P. - Ist

We want to give a message to the people of all the villages situated in the Project Area of I.W.M.P. - Ist, that, to avoid Flood & Hunger, they should plant at least one Panchvati in each village. They should plant PEEPAL tree in the EAST, BANYAN tree in the WEST, tree of BEL in the NORTH, AMLA tree in the SOUTH & the tree of ASHOK in the SOUTH-EAST. Then, in the middle of Panchvati, a Worship Place (i.e. a temple) should be made and a Hand Pump should be installed. In this hand pump, water will be available for thousands of years. The roots of these Panchvati trees makes the existing source of water between them pure and capable to cure many diseases.

There should a house by name of each women and there, they should plant at least three plants.

(i) Tree of God Vishnu - Amaltash,
(ii) Tree of Goddess Lakshmi - Kachnar,
(iii) Plant of Basil (Tulsi), which i e to cure all the diseases.

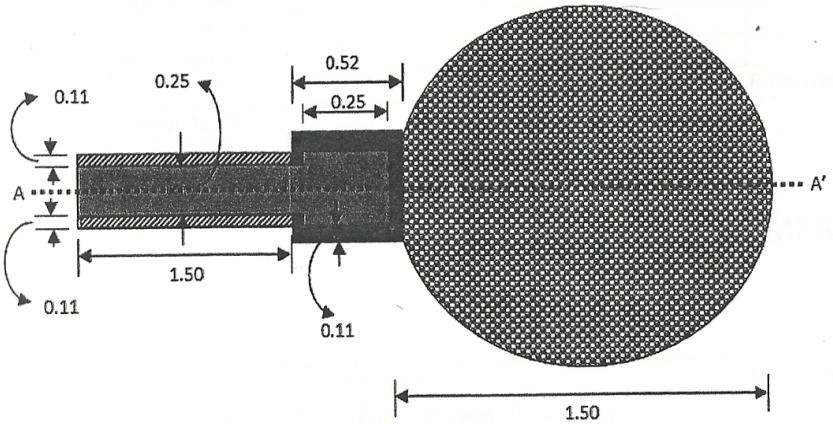
For purification of environment, at least one plant of NEEM should be planted in front of each house because it has efficiency of absorbing harmful gases (Carbon-Mono-Oxide, Hydrogen Sulphide, Sulpher - Di- Oxide, Ntrous Oxide, Ammonia etc.) and releases gases which are useful for us, same as when Lord Shiva absorbed all the poison which was released during SAMUDRAMANTHAN.

Therefore, to live a healthy life, at least one plant of Neem should be planted near the residence.

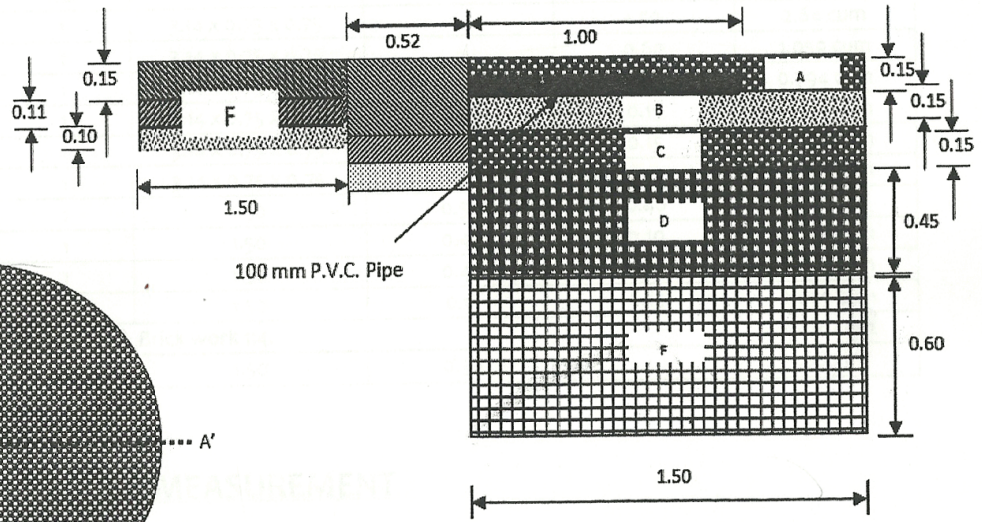
Drawing And Detail Estimate Of Entry Point Activity

DRAWING OF SOAKING PITS WITH SILTING TANK

All Dimensions Are in Metre



PLAN OF SOAKING PITS WITH SILTING TANKS



SECTION A-A'

DESCRIPTION.

A – 0.10 x 0.20 Grit.
B – Coarse Sand.
C - 0.10 x 0.20 Grit.
D – 025 x 0.50 Grit.
E – Cut Stone / Random Rubble.
F – Brick wall 0.11 m x 0.25 m Width channel

DETAIL ESTIMATE OF SOAKING PIT & CHANNEL OF LENGTH 1.50 M

S.No.	Description of Work	No.	L.	B.	D./H.	Quantity
1.	Earth work in Cutting	1	3.14 X 0.75 X 0.75	-	1.50	2.64 cum
2.	Laying of Brick Ballast	1	3.14 X 0.75 X 0.75	-	0.60	1.059 cum
3.	Laying G.S.B. 25-50 mm	1	3.14 X 0.75 X 0.75	-	0.45	0.749 cum
4.	Laying of G.S. Grit 10-20 mm	1	3.14 X 0.75 X 0.75	-	0.15	0.264 cum
5.	Laying of Coarse sand	1	3.14 X 0.75 X 0.75	-	0.15	0.264 cum
6.	Laying of G.S.B. 25-50 mm	1	3.14 X 0.75 X 0.75	-	0.15	0.264 cum
7.	Earth Work	1	1.50	0.50	0.40	0.30 cum
8.	Laying Of sand	1	1.50	0.47	0.10	0.070 cum
9.	Brick Work 1:4	1	1.50	0.47	0.11	0.077 cum
10.	Brick Work 1:4	1 X 2	1.50	0.11	0.15	0.049 cum
	Total of (9 + 10) Brick Work 1:4					**0.126 cum**
11.	Plastering 1:4	1 X 2	1.50	0.56	-	1.680 m^2

ABSTRACT OF MEASURMENT

1.	Earth Work 2.64 + 0.30	2.94 cum
2.	Laying of Brick Ballast	1.059 cum
3.	Laying G.S.B. 25-50 mm 0.794 + 0.264	1.058 cum
4.	Laying of G.S. Grit 10-20 mm	0.264 cum
5.	Laying of Coarse sand 0.264 + 0.070	0.334 cum
6.	Brick Work 11 cm 1:4	0.126 cum
7.	Plastering 1:4	1.680 m^2

CONSUMPTION OF MATERIAL

S.No.	Description Of Work	Quantity	Cement (bag)	Brick (Nos..)	G.S.B. 25-50 mm (cum)	G.S.Grit 10-20 mm (cum)	Coarse Sand
1.	Laying of Brick Ballast	1.059 cum	-	390	-	-	-
2.	Laying of G.S.B	1.058 cum	-	-	1.058	-	-
3.	Laying of G.S. Grit	0.264 cum	-	-	-	0.264	-
4.	Laying of Coarse sand	0.334 cum	-	-	-	-	0.334
5.	Brick Work 1:4	0.126 cum	0.17	60	-	-	0.030
6.	Plastering 1:4	1.680 m^2	0.18	-	-	-	0.025
		Total	**0.35**	**450**	**1.058**	**0.264**	**0.389**

COST OF MATERIALS

S.No.	Particulars	Quantity	Rate	Amount
1.	Cement	0.35 Bags	255.00/Bag	89.25
2.	Brick	450 Nos..	4050.00/Thousand	822.50
3.	Coarse Sand	0.389 cum	910.00/cum	353.99
4.	G.S.B. 25-50 mm	1.058 cum	855.00/cum	904.59
5.	G.S.Grit	0.264 cum	1250.00/cum	330.00
			Total	**Rs. 3,500.33**

LABOUR CHARGES

S.No.	Particulars	Quantity	Rate	Amount
1.	Earth Work	2.94 cum	36.66/cum	107.78
2.	Breaking of Brick Ballast & Laying	1.059 cum	166.33/cum	176.14
3.	G.S.B. Laying	1.058 cum	33.33/cum	35.26
4.	G.S.Grit Laying	0.264 cum	33.33/cum	8.79
5.	Laying of Sand	0.334 cum	33.33/cum	11.13
6.	Brick Work 1:4	0.126 cum	370.00/cum	46.62
7.	Plastering 1:4	1.680 m^2	40.00/m^2	67.20
8.	Curing	0.126 cum	25.00/cum	3.15
			Total	**Rs. 456.07**

Total Expenditure	
1. Cost of Materials	Rs. 3500.33
2. Labour Charges	Rs. 456.07
Total	**Rs. 3956.40**
Say Rs. 4,000.00 Only	

DETAIL ESTIMATE OF SILTING TANK

S.No.	Description of Work	No.	L.	B.	D./H.	Quantity
1.	Earth Work	1	0.70	0.70	0.50	0.24 cum
2.	Sand Laying	1	0.52	0.52	0.10	0.027 cum
3.	Brick Work	1	0.52	0.52	0.11	0.029
		2	0.52	0.11	0.30	0.034
		2	0.30	0.11	0.30	0.019
					Total	**0.082 cum**
4.	Plastering	4	0.30	-	0.30	0.360
		2	0.52	-	0.11	0.114
		2	0.30	-	0.11	0.066
		1	0.30	0.30	-	0.090
					Total	**0.630m^2**
5.	Steel Filter 4" ø	1				1 Nos..
6.	P.V.C. Pipe 110 mm ø	1	1.00	-	-	1.00 m

CONSUMPTION OF MATERIALS

S.No.	Description of Work	Quantity	Cement (Bags)	Coarse Sand (cum)	Brick (Nos..)	P.V.C. Pipe 110 mm ø	Steel Filter
1.	Sand Laying	0.027 cum	-	0.027	-	-	-
2.	Brick Work 1:4	0.082 cum	0.11	0.019	39	-	-
3.	Steel Filter 4"	1 Nos..	-	-	-	-	1 Nos..
4.	P.V.C. Pipe 110 mm ø	1.0 m	-	-	-	1.00 m	-
5.	Plastering	0.63 m^2	0.06	0.009	-	-	-
		Total	**0.17**	**0.055**	**39**	**1.00 m**	**1 Nos..**

COST OF MATERIALS

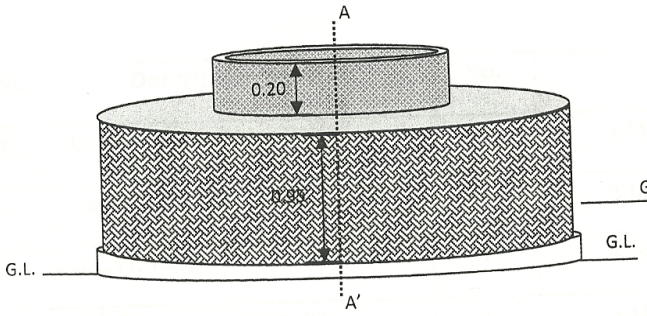
S.No.	Particulars	Quantity	Rate	Amount
1.	Coarse Sand	0.055 cum	910.00/cum	50.05
2.	Cement	0.17 bags	255.00/Bag	43.35
3.	Brick	39 Nos..	4050.00/Thousand	157.95
4.	Steel Filter 4" ø	1 Nos..	25.00 each	25.00
5.	P.V.C. Pipe 110 mm ø	1.00 m	150.00/m	150.00
			Total	**Rs. 426.35**

LABOUR CHARGE

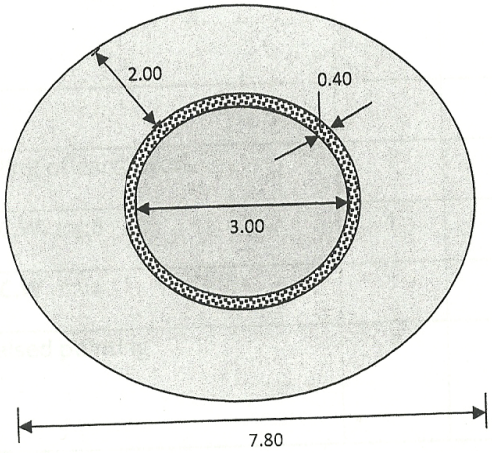
S.No.	Particulars	Quantity	Rate	Amount
1.	Earth Work	0.24 cum	36.66/cum	8.79
2.	Sand Laying	0.027 cum	33.33/cum	0.89
3.	Brick Work	0.082 cum	370.00/cum	30.34
4.	Plastering	0.63 m^2	40.00/m^2	25.20
5.	Fixing of Pipe & Filter	-	-	25.00
			Total	**Rs. 90.22**

TOTAL EXPENDITURE	
1. Cost of Materials	426.35
2. Labour Charge	90.22
Total	**Rs. 516.57**
Say Rs. 520.00 Only	
TOTAL EXPENDITURE OF SOAKING PIT & SILTING TANK	
1. Soaking Pits	3325.00
2. Silting Tank	520.00
Total	**Rs. 3,845.00**
Say Rs. 3,845.00 Only	

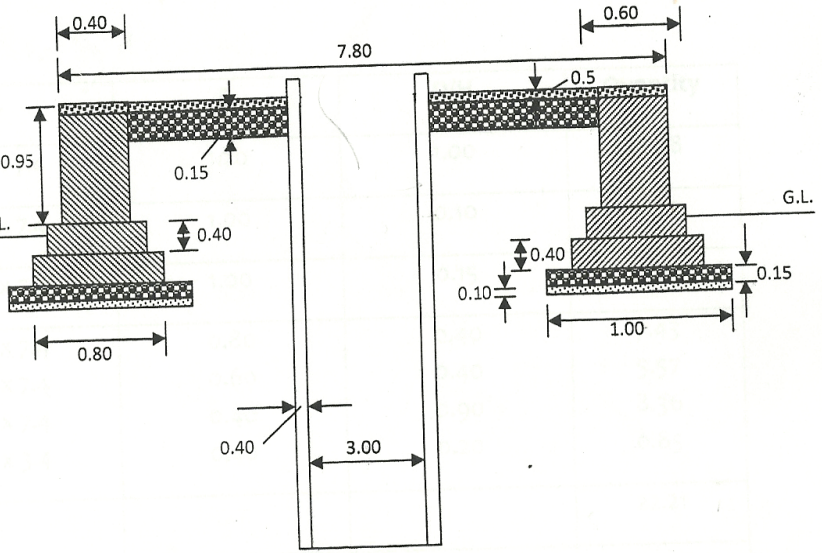
DRAWING OF WELL



ISOMETRIC VIEW OF WELL



PLAN



SECTION AT A-A'

DESCRIPTION

1. C.C.W. - 1:4:8.
2. R.R. Stone masonry- 1:4
3. Plastering- 1:4
4. Raised Pointing- 1:3.

DETAIL ESTIMATE OF JAGAT OF WELL

S.No.	Description of Work	No.	L	B	D/H	Quantity
1.	Earth work in foundation	1	3.14 X 7.4	1.20	1.00	27.88
2.	Laying Of Sand	1	3.14 X 7.4	1.00	0.10	2.32
3.	C.C.W. 1:4:8	1	3.14 X 7.4	1.00	0.15	3.48
4.	Brick Masonary 1:4	1	3.14 X 7.4 3.14 X 7.4 3.14 X 7.4 3.14 X 3.4	0.80 0.60 0.40 0.40	0.40 0.40 0.90 0.20	7.43 5.57 8.36 0.85
					Total	**22.21**
5.	Filling Of Earth Work	1	3.14 X 5.4	1.60	0.75	20.34
6.	C.C.W. 1:4:8	1	3.14 X 5.4	1.60	0.75	20.34
7.	C.C.W. 1:2:4	1	[(3.14 X 7.8 X 7.8)/4 - (3.14 X 3.8 X 3.8)/4] X 0.05			1.821
8.	Raised Pointing	1	3.14 X 7.8	-	0.90	22.04

CONSUMPTION OF MATERIALS

S.No.	Description of Work	Quantity	Cement Bags	Coarse Sand (cum)	Bricks (No.)	G.S.B. 25-40 mm (cum)	Grit 10-20 mm (cum)
1.	Sand Laying	2.32 cum	-	2.320	-	-	-
2.	C.C.W. 1:4:8 (4.06 + 3.48)	7.54 cum	25.63	3.393	-	7.012	-
3.	Brick Masonary 1:4	22.21 cum	39.97	5.996	10217	-	-
4.	C.E.W. 1:2:4	1.821 cum	11.10	0.764	-	-	1.547
5.	Raised Pointing	22.04 m^2	1.01	0.103	-	-	-
Total			**77.71**	**12.576**	**10217**	**7.012**	**1.547**
Say			**78 Bags**	**12.57 cum**	**10220**	**7.01**	**1.55**

COST OF MATERIALS

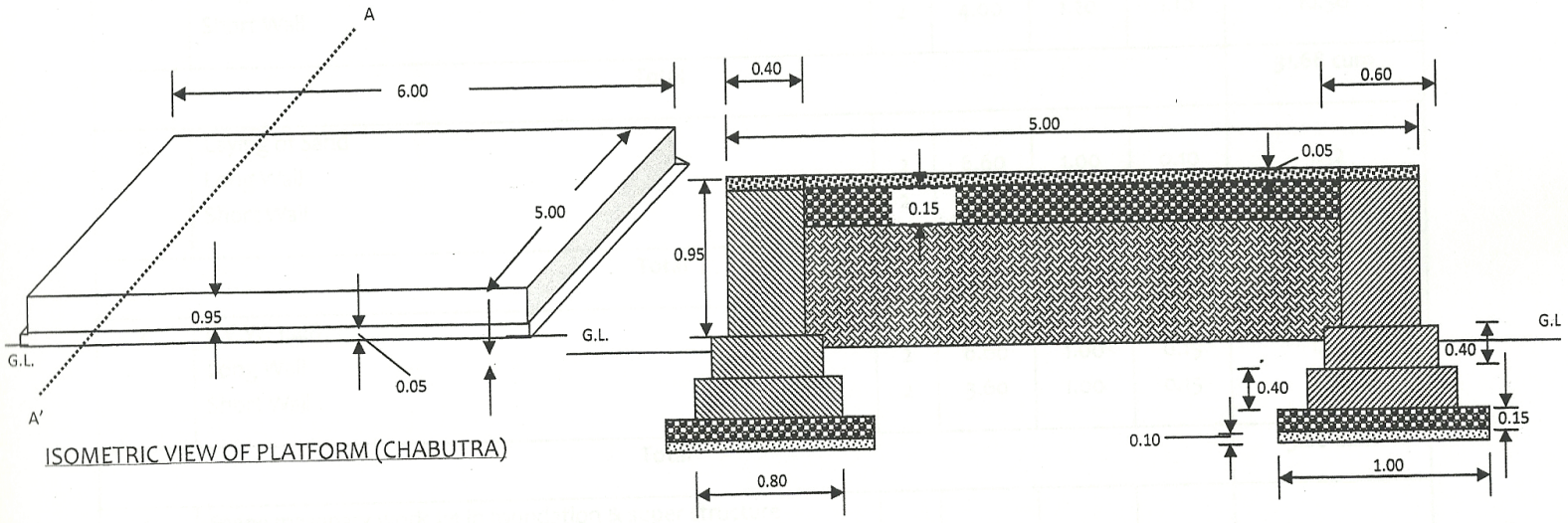
S.No.	Particulars	Quantity	Rate	Amount
1.	Cement	78 Bags	255.00/Bag	19890.00
2.	Coarse Sand	1257 cum	910.00/cum	11438.70
3.	Bricks	10220 cum	4050.00/Thousand	41391.00
4.	Granite Stone Ballast 25-40 mm	7.01 cum	855/cum	5993.55
5.	Granite Stone Grit 10-20 mm	1.55 cum	1250.00/cum	1937.50
			Total	**80,650.55**

LABOUR CHARGE

S.No.	Particulars	Quantity	Rate	Amount
1.	Earth Work	48.22 cum	36.66/cum	1769.01
2.	Sand Laying	2.32 cum	33.33/cum	77.32
3.	C.C.W. 1:4:8	7.54 cum	492.00/cum	3709.68
4.	C.C.W. 1:2:4	1.821 cum	492.00/cum	894.11
5.	Brick Masonary	22.210 cum	370.00/cum	8217.70
6.	Raised Pointing	22.04 m^2	51.61/m^2	7.48
7.	Curing 22.21	22.210 cum	25.00/ cum	555.25
8.	Chowkidar	13 Man days	100.00/Man day	1300.00
9.	Head Load & Transportation Charges 10% of cost of materials			8065.00
			Total	**24,595.55**

TOTAL EXPENDITURE	
1. Cost of Materials	80,650.55
2. Labour Charges & Transportation	24595.55
Total	**105246.10**
Say Rs. 1,05,250.00 Only	

DRAWING OF KRISHAK VIKAS MANCH



ISOMETRIC VIEW OF PLATFORM (CHABUTRA)

SECTION AT A-A'

DESCRIPTION

1. C.C.W. - 1:4:8.
2. R.R. Stone masonry- 1:4
3. Plastering- 1:4
4. Raised Pointing- 1:3.

DETAIL ESTIMATE OF KRISHAK VIKAS MANCH

S.No.	Description of Work	No.	L.	B.	D/H	Quantity
1.	Earth Work in Foundation					
	Long Wall	2	8.00	1.20	1.10	21.12
	Short Wall	2	4.00	1.20	1.10	10.56
	Total					**31.68 cum**
2.	Laying of Sand					
	Long Wall	2	6.60	1.00	0.10	1.32
	Short Wall	2	3.60	1.00	0.10	0.72
	Total					**2.04 cum**
3.	C.C.W. 1:4:8					
	Long Wall	2	6.60	1.00	0.15	1.98
	Short Wall	2	3.60	1.00	0.15	1.08
	Total					**3.06 cum**
4.	Brick Masonary work 1:4 in Foundation & Super Structure					
	1st Footing					
	Long Wall	2	6.40	0.80	0.40	4.096
	Short Wall	2	3.80	0.80	0.40	2.432
	2nd Footing					
	Long Wall	2	6.20	0.60	0.40	2.976
	Short Wall	2	4.00	0.60	0.40	1.920
	Super Structure					
	Long Wall	2	6.00	0.40	1.20	5.760
	Short Wall	2	4.20	0.40	1.20	4.032
	Total					**21.216 cum**
5.	Earth Work in Filling	1	5.20	4.20	0.75	16.38 cum
6.	C.C.W. 1:4:8	1	5.20	4.20	0.15	3.276 cum
7.	C.C.W. 1:2:4	1	6.00	5.00	0.05	1.500 cum
8.	Raised Pointing 1:3					
	Lang Wall	2	6.00	-	0.90	10.80
	Short Wall	2	5.00	-	0.90	9.00
	Total					**19.80 m^2**

ABSTRACT OF WORK

1.	Earth Work	31.68 + 16.38	48.06 cum
2.	Sand Laying		2.040 cum
3.	C.C.W. 1:4:8	3.060 + 3.276	6.336 cum
4.	Brick Masonary		21.216 cum
5.	C.C.W. 1:2:4		1.500 cum
6.	Raised Pointing 1:3		19.80 m^2

CONSUMPTION OF MATERIALS

S.No.	Particulars	Quantity	Cement (cum)	Coarse Sand (cum)	Bricks (Nos..)	G.S.B. 25-40 mm (cum)	Stone Grit 10-20 mm (cum)
1.	Sand Laying	2.040 cum	-	2.040	-	-	-
2.	C.C.W. 1:4:8	6.336 cum	21.54	2.851	-	5.892	-
3.	Brick Masonary	21.216 cum	38.18	5.728	9760	-	-
4.	C.C.W. 1:2:4	1.500 cum	9.15	0.630	-	-	1.275
5.	Raised Pointing	19.800 m^2	0.91	0.093	-	-	-
Total			**69.70 Bags**	**12.656**	**9760**	**5.892**	**1.275**
Say			**70 Bags**	**12.700**	**9800**	**5.900**	**1.280**

COST OF MATERIALS

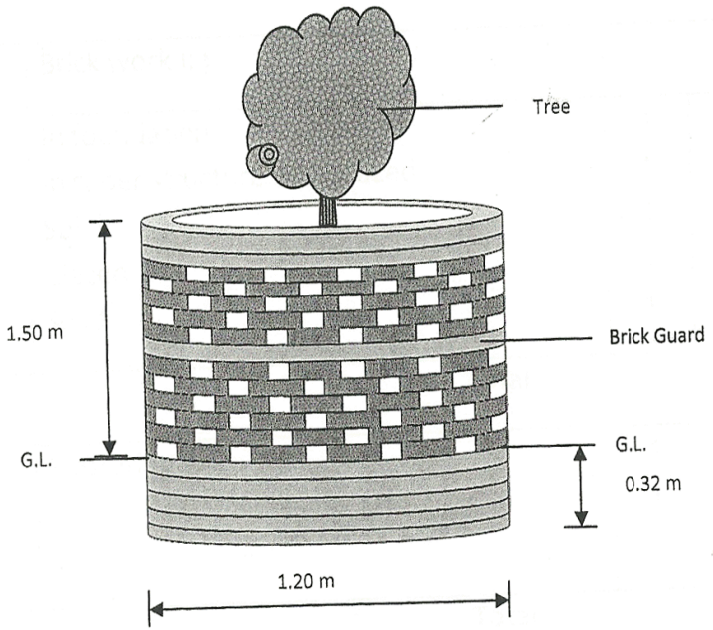
S.No.	Particulars	Quantity	Rate	Amount
1.	Cement	77 Bags	255.00/Bag	19635.00
2.	Coarse Sand	12.700 cum	910.00/cum	11557.00
3.	Bricks	9800 Nos..	4050.00/Thousand	39690.00
4.	G.S.B. 25-40 mm	5.900 cum	855.00/cum	5044.00
5.	G.S. Grit 10-20 mm	1.280 cum	1250.00/cum	1600.00
Total				**Rs. 77,526.00**

LABOUR CHARGES

S.No.	Particulars	Quantity	Rate	Amount
1.	Earth Work	48.06 cum	36.66/cum	1761.87
2.	Sand Laying	2.060 cum	33.33/cum	68.65
3.	C.C.W. 1:4:8	6.336 cum	494.00/cum	3129.98
4.	C.C.W. 1:2:4	1.500 cum	494.00/cum	741.00
5.	Brick Masonary 1:4	21.216 cum	370.00/cum	7849.92
6.	Raised Pointing 1:3	19.800 m^2	51.61/m^2	1021.87
7.	Curing Charges	18.768 cum	25.00/ cum	469.20
8.	Chowkidar	6 Man days	100.00/Man day	600.00
Total				**Rs. 15,642.55**

TOTAL EXPENDITURE	
1. Cost of Materials	77,526.00
2. Labour Charges	15,642.55
3. Transportation ChargeTotal	7,752.00
Total – Rs. 1,00,920.00	

DRAWING OF BRICK GUARD



DESCRIPTION.

1. Brick work = 1:4.
2. Plastering = 1:4.
3. Thickness of wall = 0.11 m.
4. Total height of brick guard = 0.32 + 1.50 = 1.82 m.
5. Diameter = 1.2 m.

DETAIL ESTIMATE OF BRICK GUARD

S.No.	Description of Work	No.	L.	B.	D/H	Quantity	
1.	Earth Work for Tree	1	0.60	0.60	0.60	0.216	
	in Foundation	1	3.14 X 1.09	0.20	0.30	0.205	
			Total			**0.421**	
2.	Brick Work 1:4					Solid	Glazed
	In Foundation	1	3.14 X 1.09	0.11	0.40	0.151	-
	In Super Structure with Glazed	1	3.14 X 1.09	0.11	0.48	-	0.181
	Solid	1	3.14 X 1.09	0.11	0.08	-	0.030
	Glazed	1	3.14 X 1.09	0.11	0.40	-	0.151
	Solid	1	3.14 X 1.09	0.11	0.16	0.060	-
			Total			**0.211**	**0.362**
3.	Plastering 1:4	1	3.14 X 1.20	-	0.07	0.264	
		1	3.14 X 1.20	-	0.15	0.565	
		1	3.14 X 1.09	-	0.07	0.239	
			Total			**1.068 m^2**	

CONSUMPTION OF MATERIALS

S.No.	Description of Work	Quantity	Brick (Nos..)	Cement (Bags)	Coarse Sand
1.	Brick Work 11 cm Thick 1:4	0.211 cum	100	0.29	0.050
	Brick Work Glazed	0.362 cum	86	0.25	0.043
2.	Plastering 1:4	1.068 m^2	-	0.11	0.016
Total			**186**	**0.65**	**0.109**
Say			**190**	**0.65**	**0.110 cum**

COST OF MATERIALS

S.No.	Particulars	Quantity	Rate	Amount
1.	Brick Ist Class	190 Nos..	3650.00	693.50
2.	Cement	0.65 Bags	255.00	165.75
3.	Coarse Sand	0.110 cum	910.00	100.10
Total				**Rs. 959.35**

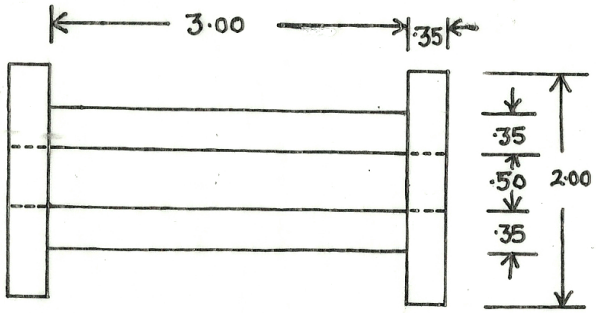
LABOUR CHARGES

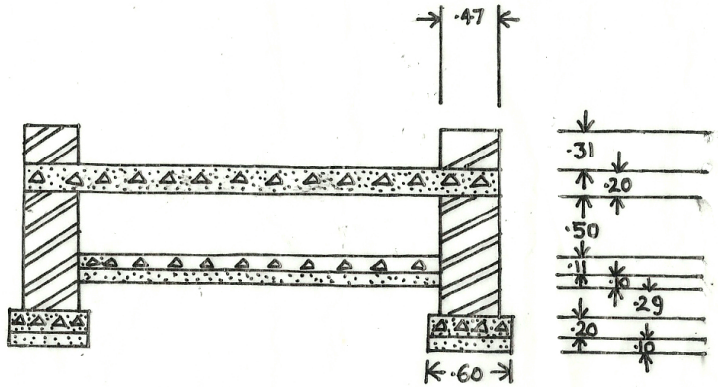
S.No.	Particulars	Quantity	Rate	Amount
1.	Earth Work	0.421 cum	39.16/cum	16.48
2.	Brick Work	0.391 cum	370.00/cum	144.67
3.	Plastering	1.068 m^2	40.00/m^2	42.72
Total				**Rs. 203.87**

Head Load and Transportation 20% of Material Cost - Rs. 191.87

Total Expenditure		
1.	Material	959.35
2.	Labour	203.87
3.	Head Load & Transportation	191.87
Total		**Rs. 1355.09**
Say Rs. 1355.00 Only		

DRAWING OF CULVERT





DETAIL ESTIMATE OF CULVERT

S.No.	Description of Work	No.	L.	B.	D/H	Quantity
1.	Earth Work filling in Kachcha Marg By Transport	1	10.00	3.00	0.45	13.50
2.	Earth Work in Digging	2	4.50	1.20	1.00	10.80
		2	3.00	1.20	1.00	7.20
		1	4.50	0.70	1.00	3.15
	Total					**21.15**
3.	Sand Laying in Foundation	2	4.50	1.20	0.10	1.08
		2	3.00	1.00	0.10	0.72
		1	4.50	0.70	0.10	0.31
	Total					**4.95**
4.	B.B.W. in Foundation (1:4:8)	2	4.50	1.20	0.15	1.62
		2	3.00	1.20	0.15	1.08
		1	4.50	0.70	0.15	0.47
	Total					**3.17**
5.	Brick Work (1:4) (Bed)	1	4.50	0.70	0.11	0.346
	(a) Inner Wall	2	4.50	0.80	0.50	3.600
	(b) Inner Wall	2	4.50	0.60	1.20	6.480
	(c) Side Wall	2	3.00	0.80	0.31	1.488
		2	3.00	0.60	2.20	7.920
	Total					**19.834**
6.	R.C.C. Work (1:2:4)	1	5.00	1.70	0.20	**1.70**
7.	Plaster Work (1:4)	2	4.50	2.40	-	21.60
		2	4.50	2.40	-	21.60
		2	4.50	1.00	-	9.00
		4	0.35	1.50	-	2.10
	Total					**54.30**

CONSUMPTION OF MATERIALS

S.No.	Description of Work	Quantity	Brick (Nos..)	Cement (Bags)	Coarse Sand	Brick Ballast	M.S.Bar 10 mm	10-20 mm Stone Grid
1.	Sand Laying	4.95	-	-	4.95	-	-	-
2.	B.B.W. (1:4:8)	3.17	-	10.78	1.42	2.95	-	-
3.	Brick Work (1:4)	19.834	9130	35.70	5.35	-	-	-
4.	R.C.C. Work (1:2:4)	1.70	-	10.37	0.71	-	188.00 Kg	1.44
5.	Plaster Work (1:4)	54.30	-	5.97	0.81	-	-	-
	Total		**9130**	**63.00**	**13.24**	**2.95**	**188.00 Kg**	**1.44**

COST OF MATERIALS

S.No.	Particulars	Quantity	Rate	Amount
1.	Brick Ist Class	9130 Nos..	4050.00	36976.50
2.	Cement	63.00 Bags	255.00	16065.00
3.	Coarse Sand	13.24 m^3	910.00	12048.40
4.	Brick Ballast	2.95 m^3	1450.00	4277.50
5.	M.S.Bar 10 mm	188.00 Kg	34.50	6486.00
6.	10-40 mm Stone Grid	1.44 m^3	1250.00	1800.00
	Total			**Rs. 77,653.40**
	Say			**Rs. 77,650.00**

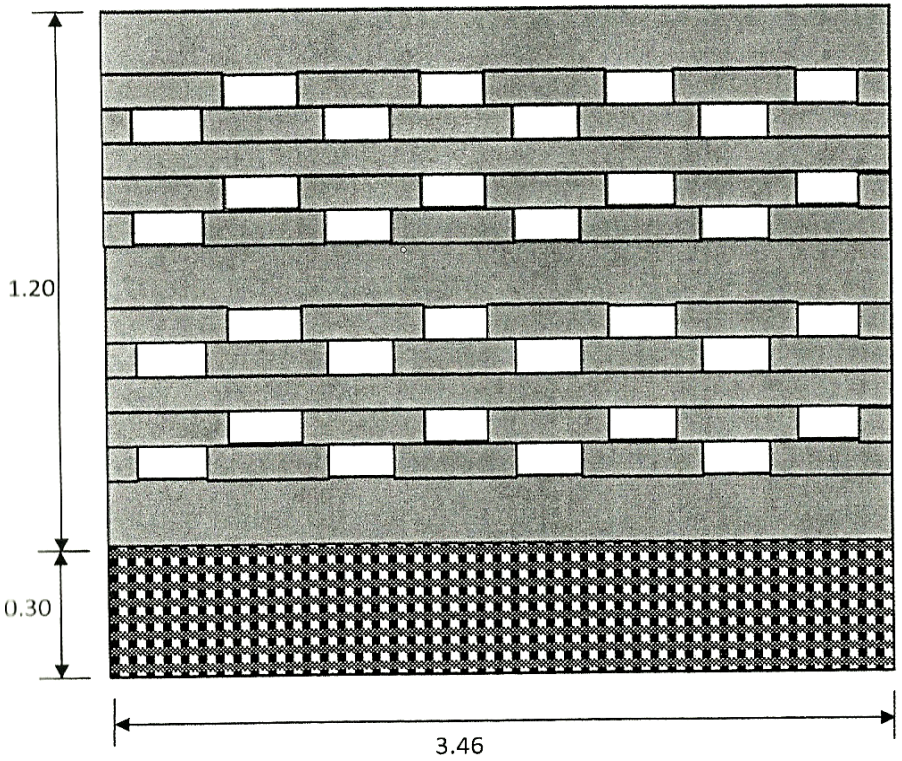
LABOUR CHARGES

S.No.	Particulars	Quantity	Rate	Amount
1.	Earth Work in Filling	13.50 cum	130.00/cum	1755.00
2.	Earth Work in Digging	21.15 cum	33.33/cum	704.92
3.	Sand Laying	4.95 m^3	33.33/m^3	164.98
4.	B.B.W. (1:4:8)	3.17 m^3	492.00/m^3	1559.64
5.	Brick Work (1:4)	19.834 m^3	370.00/m^3	7338.58
6.	R.C.C. Work (1:2:4)	1.70 m^3	560.00/m^3	952.00
7.	Plaster Work (1:4)	54.30 m^2	40.00/m^2	2172.00
	Total			**Rs. 14647.12**
	Say			**Rs. 14647.00 Only**

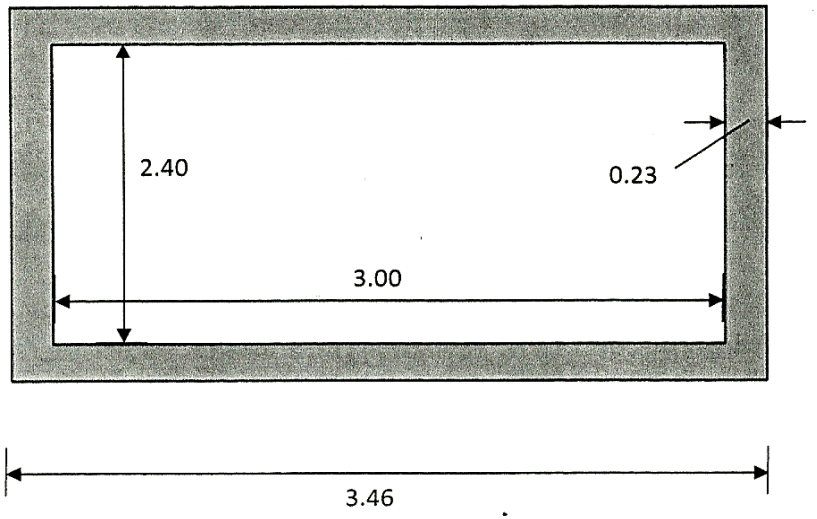
Total Expenditure	
Material	77,650.00
Labour	14,647.00
Head Load & Transportation	7,765.00
Total	**Rs. 1,00,062.00**
Say Rs. 1,00,60.00 Only	

Institution
&
Capability Building

DRAWING OF NADEF COMPOST STRUCTURE



ELEVATION



PLAN

DESCRIPTION.

1. Brick work = 1:4.
2. Plastering = 1:4.
3. Thickness of wall = 0.23 m.
4. Total height of Structure = 1.20 + 0.30 = 1.50 m.

(Not to Scale)

PREPARATION OF COMPOST BY NADEF METHOD

Nadef is the name of inventor of this method. In this method glazed pit of brick masonry above Ground level is made as shown in the drying. in this method by using a little quantity of cow during, and crop residue, leaf of trees, straw and other organic materials. The method of filling up the pit is below.

First of all best soil of pond of field is spread in the bottom of pit as least 3" thickness and then one layer of 6" thickness and other agriculture waste is made then best soil is spread on it and on this layer the liquid made of cow dung is spread to wet the crop residue, straw etc. this method is repeated until the pity is net completely filled up. On the top layer of this material a bulk is made and then the pit is closed by earthen Gara. Water is spread on the top of bulk and from glazed side weekly. This process is repeated to moist the filling material always. The decomposition in filling material started and within six month filled material becomes compost khad.

ESTIMATE OF COMPOST BY NADEF METHOD

S.No.	Description of work	No.	L	B	D/H	Quantity
1	Earth work					
	Long Wall	2	3.60	0.30	0.30	0.648
	Short Wall	2	2.33	0.30	0.30	0.419
	Total					**1.067 cum**
2	Brick Work 1:4					
	Long Wall Glazed	2	3.46	0.23	0.90	1.432
	Short Wall Glazed	2	2.40	0.23	0.90	0.993
	Total					**2.425 cum**
	Long Wall Glazed	2	3.46	0.23	0.60	0.954
	Short Wall Glazed	2	2.40	0.23	0.60	0.662
	Total					**1.616 cum**
3	Plastering Work					
	Long Wall	2	3.46	-	0.60	4.152
	Short Wall	2	2.40	-	0.60	2.880
	Top of Long Wall	2	3.46	0.23	-	1.591
	Top of Short Wall	2	2.40	0.23	-	1.104
	Total					**9.727 m^2**

ABSTRACT OF WORK

S.No.	Particulars	Quantity
1	Earth Work	1.06 cum
2	Brick Work 1:4 2.425 + 1.616 / 2	3.233 cum
3	Plastering 1:4	9.727 m^2

CUNSUMPTION OF MATERIALS

S.No.	Particulars	Quantity	Cement (Bags)	Coarse Sand (cum)	Bricks (Nos..)
1	Brick work 1:4	3.233 cum	5.82	0.873	1487
2	Plastering 1:4	9.727 m^2	1.07	0.146	-
	Total		**6.89**	**1.019**	**1487**
	Say		**7 Bags**	**1.02 cum**	**1500 Nos.**

COST OF MATERIALS

S.No.	Particulars	Quantity	Rate	Amount
1	Cement	7 Bags	255.00/Bag	1785.00
2	Coarse Sand	1.02 cum	910.00/cum	928.20
3	1st class Brick Work 1:4	1500 Nos..	4050.00/thousand	6075.00
	Total			**Rs. 8,788.20**

LABOUR CHARGES

S.No.	Particulars	Quantity	Rate	Amount
1	Earth Work	1.06 cum	36.66/cum	30.85
2	Brick Work	3.233 cum	370.00/cum	1196.21
3	Plastering	9.727 m^2	40.00/m^2	389.08
	Total			**Rs. 1616.14**

TOTAL EXPENDITURE	
1. Cost of Materials	8788.20
2. Labour Charges	1616.14
Total	**Rs. 10,404.34**
Say Rs. 10,400.00 only	

DAIRY WORK

In income generating activities through Self help Group, landless and marginal farmers are advised to use three of four cows of SANKER breed or two or three buffalos of MURRA breed, for their good life.

Establishment of Goat Units for S.H.G.'s formed in I.W.M.P. Ist Project

District Fatehpur is situated in middle zone region where the number of sheep is very less and they are small in nature. Goat population is appreciable and in fact, it is the major source of livelihood for poor people of the district.

In the state, on an average, 16 kg of meat is obtained from a goat, if they are dewormmed twice, there shall be increment of 4 kg in meat on an average, benefiting the farmers of the state.

Deworming ad vitamins, mineral- supplement to the goat shall enhance their productivity and also improve anti-body response and protection level through vaccination, i.e., importance in efficiency of vaccination. More productivity and assured health and low mortality shall result into adoption of more farmers to goat farming with the formation of more S.H.G.'s and in turn availability of goats for processing units.

Goat excreta shall be of immense help in enrichment of soil fertility.

ESTABLISHMENT OF GOAT UNITS FOR S.H.G.'s

Middle zone region, due to the geo-climate conditions and land pattern is favorable for goat husbandry. Goats thrive well in dry and semidry climate with bushes and thorny vegetation. Presently in this area, farmers rear goats for their livelihood. If goat husbandry would be transformed to inte4nsive husbandry, there shall be more economic stability of farmers, more economic stability of farmers, more profit sharing and availability of running capital for future expansion, keeping in view the above facts, goat units shall be formed in the area in intensive way.

16 Goat Units are proposed in I.W.M.P. Ist project for S.H.G. One unit constituting 10 goats and 1 buck will be distributed to one S.H.G.

A register of S.H.G. will be maintained by Secretary of S.H.G. in the supervision of W.D.T. member. The details of beneficiaries of S.H.G. including the breed of goat reared, breeding and feeding status, deworming status, deaths, post mortem conducted claim settlement and working status of unit will be maintained in the register.

Preferences shall be given in consecutive years in purchasing the goats and bucks for new units, from old units for which database maintained shall be of use and it should be assured by buy back arrangement.

FINANCIAL COMPONENT

S.No.	Component	Amount
1	Cost of 10 Goats of improved breed (not less than 6 months of age) @ Rs. 3000.00 each.	30000.00
2	Cost of 1 buck of improved breed @ Rs. 5000.00	5000.00
3	Cost of insurance @ 11.63/unit	4070.00
4	Feed cost for 3 months @ 250 gm/day for goats @ Rs. 11.84/250 gm	2930.00
5	Provision of deworming, mineral and vitamin supplement, treatment, vaccination @ Rs. 160/animal	
6	The expanse including monitoring expenses, register and records @ Rs 170.00/unit	170.00
	Total	**Rs. 43,930.40**
	Say Rs. 43,950.00	

ESTIMATE OF LIVESTOCK DEVELOPMENT ACTIVITIES

Total Number of female animals : Buffalo - 9616

Cow - 2380

Total - 11996

1. Artificial Insemination (A.I.) : 33% of total animals per year, i.e., 3959 (say 4000 Nos..)

Amount required for A.I. by Baif @ 100.00/animal

Total Amount - Rs. 4.,000.00

2. Vaccination: Total number of animals in I.W.M.P. Ist - 22658 Nos..

1. H.S. + B.Q.	@ 5.50	1,24,124.00	
2. F.M.D.	@ 10.50	2,36,964.00	
(Twice in a year)			
Total Amount		**- Rs. 3,61,088.00**	

3. Deworming: Adult Animals - 14043

Child Animals - 8615

Albendazole for	14043 animals	@ 40.56	5,69,584.00
	8615 child animals	@ 20.28	1,74,712.00
Total Amount			**- Rs. 7,44,296.00**

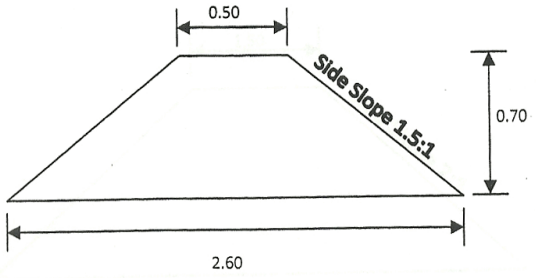
4. Mineral Mixture: Agrimine Forte Chelated for 18009 animals @ 115.00 **Rs. 20,71,035.00**

GRAND TOTAL - Rs. 32,16,419.00

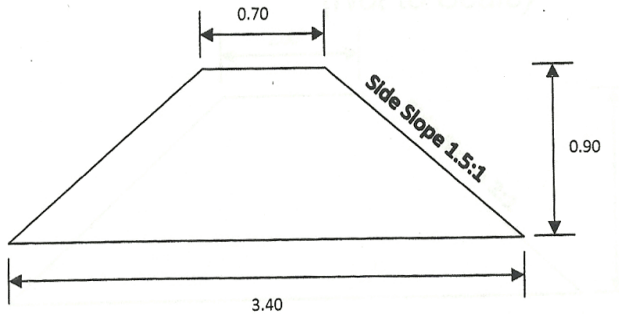
DRAWING AND DETAIL ESTIMATE OF WATERSHED DEVELOPMENT WORKS IN WATERSHED WORK PHASE

DRAWING OF C.B., S.B., P.B., AND M.B.

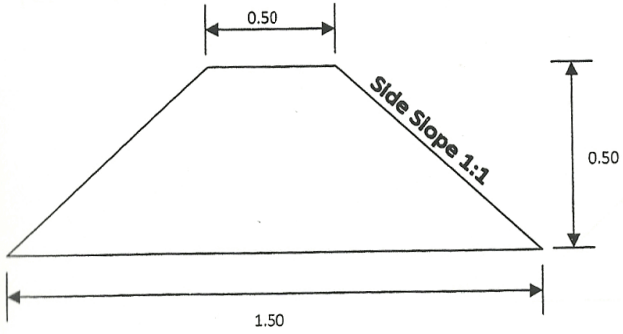
(Not to Scale)



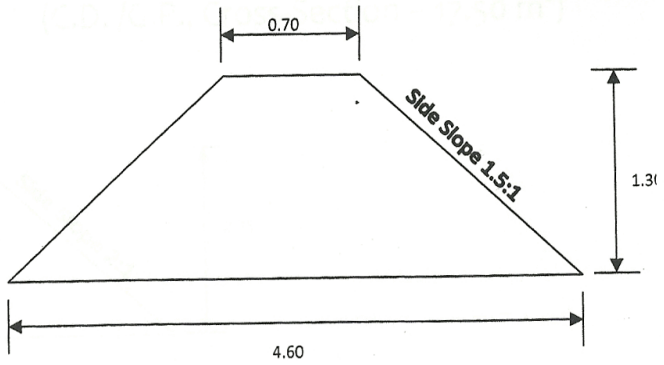
(C.B., Cross-Section – 1.085 m^2)



(S.B., Cross-Section – 1.845m^2)



(Field Bund, Cross-Section – 0.50 m^2)

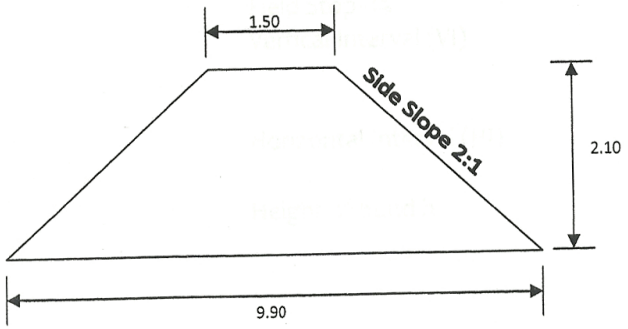


(S.B. /P.B. /M.B., Cross-Section – 3.445 m^2)

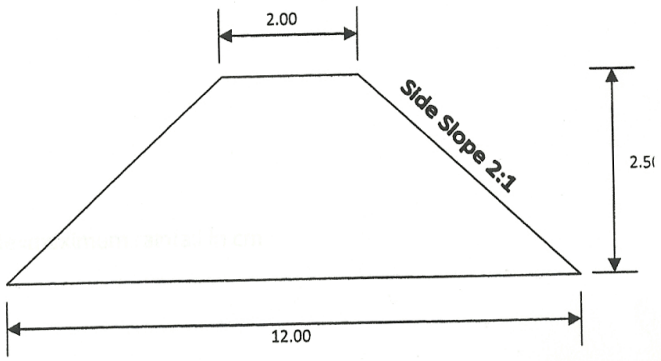
(All dimensions in Metre)

DRAWING OF EARTHEN CHEKDAM / GULLY PLUG

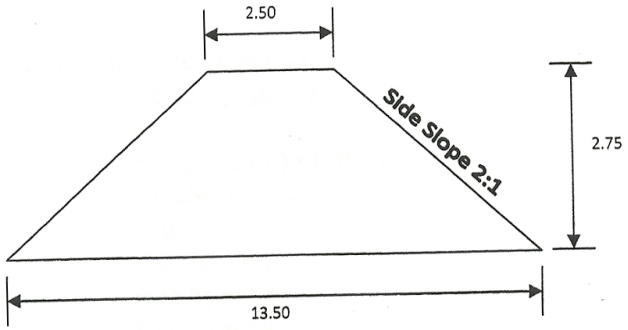
(Not to Scale)



(C.D. /G.P., Cross-Section – 11.97 m^2)



(C.D. /G.P., Cross-Section – 17.50 m^2)



(W.H.B., Cross-Section – 22.00 m^2)

(All dimensions in Metre)

DESIGN OF CONTOUR BUND

Type of Soil	-Clay
Rain fall	-24 hr in cm -25 cm
Field Stop -1%	
Vertical Interval (VI)	= [s/3+2] x 0.3
	= [1/3+2] x 0.3
	= 0.70 m
Horizontal Interval (HI)	= 100 x V.I/s
	= 100 x 0.7/1
Height of bund h	$= \sqrt{(Re \times VI)/50}$ Re=maximum rainfall in cm
	$= \sqrt{(25 \times 0.7)/50}$
	$= \sqrt{0.35}$
	= 0.59
	Say 0.60 m
Free board	=15% of height minimum -10 cm
Height	= 0.60 + 0.10
	= 0.70 m

Taking top width of bund 0.50 m and side slope 1.5:1

Then base of Bund	= 0.50 + (1.50 d) x 2
	= 2.60 m
Cross-Section of bund	= (0.50 + 2.60) x 0.70 / 2
	= 1 .085 m^2
Length of bund	= 100 s / V.I.
	= 100 x 1 / 0.70
	=142.85 m/ha
	Say 150 m/ha
Earth work/ha	= 150x1.085
	= 162.75 cum
Cost Rs. / ha	= 162.75 x 39.16 = 6373.29
	Say 6375.00

DESIGN OF SUBMERGENCE BUND

Types of soil –Clay	Rainfall intensity for 24 hrs – 25cm
Field slope 3%	V.I.=[s/3+2]x0.30
	=0.90 m
Horizontal Interval = (100xV.I.)/s	= (100x0.90)/3
	=30 m
Height of bund $h=\sqrt{(Re \times V.I.)/50}$	$=\sqrt{(25 \times 0.90)/50}$ $=\sqrt{0.45}$ = 0.67 m. **Say 0.70m**
Free board 20% of height minimum 20cm	
Total Height	=0.90m
Taking top width of bund 0.70m and side slope 1.5:1	
Bottom of bund	= 0.70+2 x 1.5d = 0.70+2.70 = 3.40
Cross Section of Submergence Bund	= (0.70+3.40) x 0.90 / 2 = 1.845 m^2
Length of bund	= 100 s / V.I. = (100 x 3) /0.90 = 333 m
Feasible length	100 + 25 + 25 = 150 m
Earth work/ha	=150 x 1.845 =276.75
Cost per ha	=276.75 x 39.16 =10,837.53 **Say 10,850=00**

[111]

TYPICAL SECTION OF FIELD BUND

Top width	= 0.50 m
Side slope	= 1:1
Height of bound	= 0.50 m
Bottom Width	= 1.50 m
Cross section	= (0.50+1.50)x0.50/2 = 0.50 m^2
Length per hectare	= 200 m
Earthwork	= 200 x 0.50 = 100 cum
Cost 39.16/cum	= Rs. 3916.00
Cost per hectare	= Rs. 3916.00

TYPICAL SECTION OF P.B., M.B., S.B.

Top width	= 0.70 m
Side slope	= 1.5:1
Height	= 1.30 m
Bottom	= 4.60 m
Cross section	= (0.70+4.60)x1.30/2
	= 3.445 m^2
Cost/ meter	= Rs. 142.00

TYPICAL SECTION OF EARTHEN CHECK DAM / GULLY PLUG

Top width	= 1.50 m
Side slope	= 2:1
Height	= 2.10m
Bottom Width	= 9.90 m
Cross section	= (1.50 + 9.90) x 2.10 / 2
	= 11.97 m^2
Cost per meter	= Rs. 551.45

TYPICAL SECTION OF CHECK DAM / GULLY PLUG

Top width	= 2.00m
Side slope	= 2:1
Height	= 2.50 m
Bottom Width	= 12.00 m
Cross Section	= (2.00 + 12.00) x 2.50 / 2
	= 17.50 m^2
Cost /meter	= Rs. 839.12

TYPICAL SECTION OF W.H.B

Top width	= 2.50 m
Side slope	= 2:1
Height	= 2.75 m
Bottom Width	= 13.50 m
Cross section	= (2.50 + 13.50) x 2.75 / 2
	= 22.00 m^2
Per meter cost	= Rs. 1085.92

HORTICULTURE DEVELOPMENT FOR WATERSHED MANAGEMENT

Horticulture is an important component of land use management. Now India is the second largest producer of fruits in the world after Brazil.

However, 53% of the total geographical area of the country is degraded due to various reasons. Fruit trees and fruit based systems are the viable alternatives for economic utilization of such lands. The basic philosophy behind the conservation horticulture is the use of available resources and skillful choice of fruits. The use of soil moisture, collection of the runoff water from the catchment area to make up the deficit requirements as well as in situ water harvesting techniques are some of the measures. The in situ water harvesting techniques should be used for growing trees in such a way that each tree has its own micro catchment area. The success of the conservation of horticulture entirely depends on the selection of economically viable hardy varieties of fruit crops resistant to moisture stress or drought and other adverse climate conditions. The fruit crops selected for degraded lands nust be such that their maximum growth take place during the period of maximum water availability in the soil and should have low demand.

The main constraints which restrict development of the horticulture land use in degraded lands are enumerated below :

(A) Basic Constraints:

(i) Lack of Suitable agro-technique for degraded lands

(ii) Lack of trained resource persons

(iii) Inadequate dissemination of the technology

(iv) lack of community approach

(v) High Biotic Interference

(vi) Lack of Infrastructure including marketing.

(B) Soil Constraints:

(i) Poor Nutrient Status of the soil

(ii) Physical Impediment

(iii) Moisture Stress / Water Logging / Inadequate Drainage

(C) Plant Related Constraints :

(i) Problem of plant Establishment

(ii) Physiological Disorders

(iii) Fruit Drop and Poor Productivity

(iv) Incidence of Insects-pests.

However, apart from the above mentioned constraints, the measure bottleneck in horticulture development are poor technological advancements, high initial establishment cost, high input demand, timely operation and seasonal shortage of labours, etc.

CONCEPT AND ADVATAGES OF CONSERVATION HORTICULTURE:

Conservation horticulture or horticulture and use based on soil and water conservation principle is a suitable alternative for utilization and management of land under rain fed condition. Thus horticulture development in watershed management appears to be the most appropriate technique for sustained productivity as well as for restoration of degraded land . In fact horticulture system meets all the basic need-food, fruits, fodder, fuel and timber besides, providing employment and sustaining a number of products for industries.

The fruit trees grown with crops can provide fuel from pruned shoots and dried branches, leaf fodder for animals and leaf litter that can be utilized as mulch material and organic matter the leaf litter of deciduous fruit trees not only protects the top soil from the impact of raindrops but also improve soil structure, reduces evaporation

aspiration, increases infiltration and add to the nutrient status of soil. Therefore conservation based horticulture land use system assumes great significance as fruit trees on degraded land provide higher returns and offer alternative opportunity in non-arable areas where cropping may not be possible.

CONSERVATION HORTICULTURE PRACTICES

Some of the important practices are given below

1-Selection of suitable fruits types:- For the success of conservation horticulture ,selection of hardly varieties resistant to diseases and pests and use of local or other hardy root stock for raising fruit-trees is great importance. The major part of the reproductive cycle i.e. Period from flowering to fruiting must also fall during maximum water availability period and the root ripening must be completed before the onset of dry summer (April-may)

Ber, Guava, Karonda, Bel, Amla, Lemon and Phalsa etc. are the plant which fulfill this requirement and all these fruit plant

are most suitable for Bundelkhand region.

2-Panting Techniques. For degraded lands, pits should be dug of 1m x1m x 1m size, the excavated soil is mixed Farmyard Manure (FYM)@5-10 kg/pit with doses of potash and phosphorous and some insecticide/pesticide (numicide / aldrex) for prevention of white ant. Planting of the fruits plants should be done with the onset of monsoon.

Use Of Root Stocks. Budding and grafting on the wild root stock gives benefit of the establishment root and in turn provides better quality fruits with high field potential. For example, ZiZiphun mauritiana, a wild Ber can be successful budded with scion of improved cultivars, this practice is only successful where sizable path of wild root stock is available. The budded/grafted stock need intensive management as it is required to be protected from the wild animals, birds, pests, etc. The wild root stock develops efficient top root to provide moisture and nutrients to the scion. Amla, Bel is other example of raising the improved cultivation the wild root stock.

IN SITE WATER HARVESTING

Since on sloppy lands, runoff water is considerably higher, therefore, it should be harvested and used. The runoff can be utilized for growing fruit plants in such a way that each tree in the established plants is at the time of fruit setting and fruiting. Moisture available at this critical period improves fruit yield.

Run of water will be harvested and stored in tanks during the rains. The stored water will be utilized at the time when the fruit trees show moisture stress during the dry months. Counter trenches will dug between the rows of fruit trees because this is effective in conserving moisture and providing soil erosion.

MULCHING

Mulching is practiced to conserve moisture. It prevents the loss of moisture by evaporation and improve water intake by the soil. Various organic (straw, hay, manure, tree leaves, dry wads) mulches are used for mulching. Use of plastic mulch has been taken in rain fed and dry farming condition to increase the productivity by minimizing evapo transpiration losses.

DRIP IRRIGATION

Drip irrigation save water by 40 to 70 percent and two to three times more areas can be irrigated with the same amount of available water. It has the advantages that ensures uniform distribution of water, provides perfect control over water application and minimizing the losses during convergence and seepage.

In Vedas, Upnishad and Puran, the importance of trees is said. There are 27 Nakshatras in a year and there is one of each Nakshatra. The people should planted the tree of their Nakshatra, and they should be never destroyed.

The name of Nakshatra and their tree are as follows :-

S.No.	Name of Nakshatras	Name of Tree
1.	Ashwini	Kuchila
2.	Bharini	Aamla
3.	Kritika	Goolar
4.	Rohini	Jaamun
5.	Mrigshira	Khair
6.	Aadra	Agar
7.	Punarvasu	Baans
8.	Pushya	Peepal
9.	Ashalekha	Chameli
10.	Magha	Bar (Banyan)
11.	Purvafalguni	Dhak
12.	Uttarafalguni	Pilkhen
13.	Hasta	Jaai
14.	Chitra	Bel
15.	Swati	Arjun
16.	Vishakha	Babool (Acacia)
17.	Anuradha	Naagkeshwar
18.	Jyeshtha	Shambhal
19.	Mool	Raal Vriksha (Bitumen)
20.	Purvaashadha	Bait (Cane)
21.	Uttaraashadha	Panash
22.	Shrawan	Aak
23.	Ghanishtha	Jaanthi
24.	Shatbhisha	Kandab
25.	Purvaabhadrapad	Aam (Mango)
26.	Uttaraabhadrapad	Nimbu (Lemon)
27.	Revati	Mahua

वेदों में वृक्षों का महत्व, नक्षत्र के वृक्ष

1.	अश्विनि का वृक्ष कुचिला है।	14.	चित्रा का वृक्ष बेल है।
2.	भरणी का वृक्ष ऑवला है।	15.	स्वाती का वृक्ष अर्जुन है।
3.	कृतिका का वृक्ष गूलर है।	16.	विशाखा का वृक्ष बबूल है।
4.	रोहिणी का वृक्ष जामुन है।	17.	अनुराधा का वृक्ष नागकेशर है।
5.	मृगशिरा का वृक्ष खैर है।	18.	जेष्ठा का वृक्ष शंभल है।
6.	आद्रा का वृक्ष अगर है।	19.	मूल का वृक्ष राल का वृक्ष है।
7.	पुनर्वसु का वृक्ष बांस है।	20.	पूर्वाषाढ़ा का वृक्ष बेंत है।
8.	पुष्य का वृक्ष पीपल है।	21.	उत्तराषाढ़ा का वृक्ष पनश है।
9.	अश्रलेषा का वृक्ष चमेली है।	22.	श्रवण का वृक्ष आक है।
10.	मद्या का वृक्ष बड़ है।	23.	घनिष्ठा का वृक्ष जांठी है।
11.	पूर्वाफाल्गुनी का वृक्ष ढाक है।	24.	शतभिषा का वृक्ष कदम्ब है।
12.	उत्तराफाल्गुनी का वृक्ष पिलखेन है।	25.	पूर्वाभाद्रपद का वृक्ष आम है।
13.	हस्त का वृक्ष जाई है।	26.	उत्तर भाद्रपद का वृक्ष नींबू है।
		27.	रेवती का वृक्ष महुआ है।

विष्णुः भगवान का वृक्ष अमलतास, लक्ष्मी का वृक्ष कचनार एवं सर्वरोग हरण तुलसी।

ये वृक्ष है। सत्ताइस नक्षत्र हैं मनुष्य को मालूम करना चाहिए कि जिस मनुष्य का जो नक्षत्र हो उसी नक्षत्र वृक्ष का पालन करना चाहिए। यह सुख देने वाली है और नक्षत्र वाले वृक्ष को काटने से शरीर में रोग उपजता है और दुख पाता है। इससे अपने नक्षत्र के वृक्ष को काटे नहीं, पालन करें।

Estimate of Orchard Development in the Watershed Per Hectare (Without Fencing)

S.No.	Particulars	Quantity	Rate	Amount	Remark
A. Horticulture					
1.	Soil working 1m x 1m x 1m size pits (270 Nos..) including cost of refilling	270.00 cum	36.66/cum	9898.20	Since, the project is to be operated in a participatory mode, contribution in the form of labour input for pit digging, FYM and its applications, weeding and hoeing are to be provided by the participating farmers, hence the costs are not including in the estimates.
2.	Application of Farmyard Manure, Including Cost	-	L.S.	450.00	
3.	Cost of NPK mixture, neemicide @250 gm/plant	-	L.S.	400.00	
4.	Cost of plants (including 15% etc. for mortality) including transportation and planting	310 Nos..	15.00/Plant	4650.00	
5.	Casualty replacement @ 10% of item No. 4 & 5			465.00	
6.	Cost of 2 weedings and hoeing		1.00/Plant	540	
7.	Contingency and unforeseen (3%)			492.00	
	Total			**Rs. 6,007.00**	
	Say			**Rs. 6,000.00**	
	Maintenance cost IInd year onwards - 15% of Ist year cost			900.00	
	For next 5 years i.e. Rs. 900 x 5			4500.00	
	Total Cost			**Rs. 10,500.00**	
	Say			**Rs. 10,500.00**	
B. Agro-Horticulture (Cost per Ha)					
1.	Cost of raising 270 plants up to 5 years @ Rs. 10,000.00			10,500.00	The remarks mentioned under Horticulture are also applicable for Agro-Horticulture.
2.	Cost of raising agricultural crops @ Rs. 5,000 per Hectare per year			5,000.00	
	Total			**Rs. 15,500.00**	

Estimate of Orchard Development in the Watershed Per Hectare (With Fencing)

S.No.	Particulars	Quantity	Rate	Amount	Remark
A. Horticulture					
1.	Soil working 1m x 1m x 1m size pits (270 Nos..) including cost of refilling	270.00 cum	36.66/cum	9898.20	Since, the project is to be operated in a participatory mode, contribution in the form of Labour input for pit digging, FYM and its applications, weeding and hoeing are to be provided by the participating farmers, hence the costs are not including in the estimates.
2.	Application of Farmyard Manure, Including Cost		L.S.	450.00	
3.	Cost of NPK mixture, neemicide @250 gm/plant	-	L.S.	400.00	
4.	Cost of plants (including 15% etc. for mortality) including transportation and planting	310 Nos..	15.00/Plant	4650.00	
5.	Casualty replacement @ 10% of item No. 4 & 5			465.00	
6.	Cost of 2 weedings and hoeing		1.00/Plant	540	
7.	Contingency and unforeseen (3%)			492.00	
	Total			**Rs. 6,007.00**	
	Say			**Rs. 6,000.00**	
	Maintenance cost IInd year onwards - 15% of Ist year cost			900.00	
	For next 5 years i.e. Rs. 900 x 5			4500.00	
	Total Cost			**Rs. 10,500.00**	
	Say			**Rs. 10,500.00**	
B. Agro-Horticulture (Cost per Ha)					
1.	Cost of raising 270 plants up to 5 years @ Rs. 10,000.00			10,500.00	The remarks mentioned under Horticulture are also applicable for Agro-Horticulture.
2.	Cost of raising agricultural crops @ Rs. 5,000 per Hectare per year			5,000.00	
3.	Fencing			45,300.00	
	Total			**Rs. 60,800.00**	

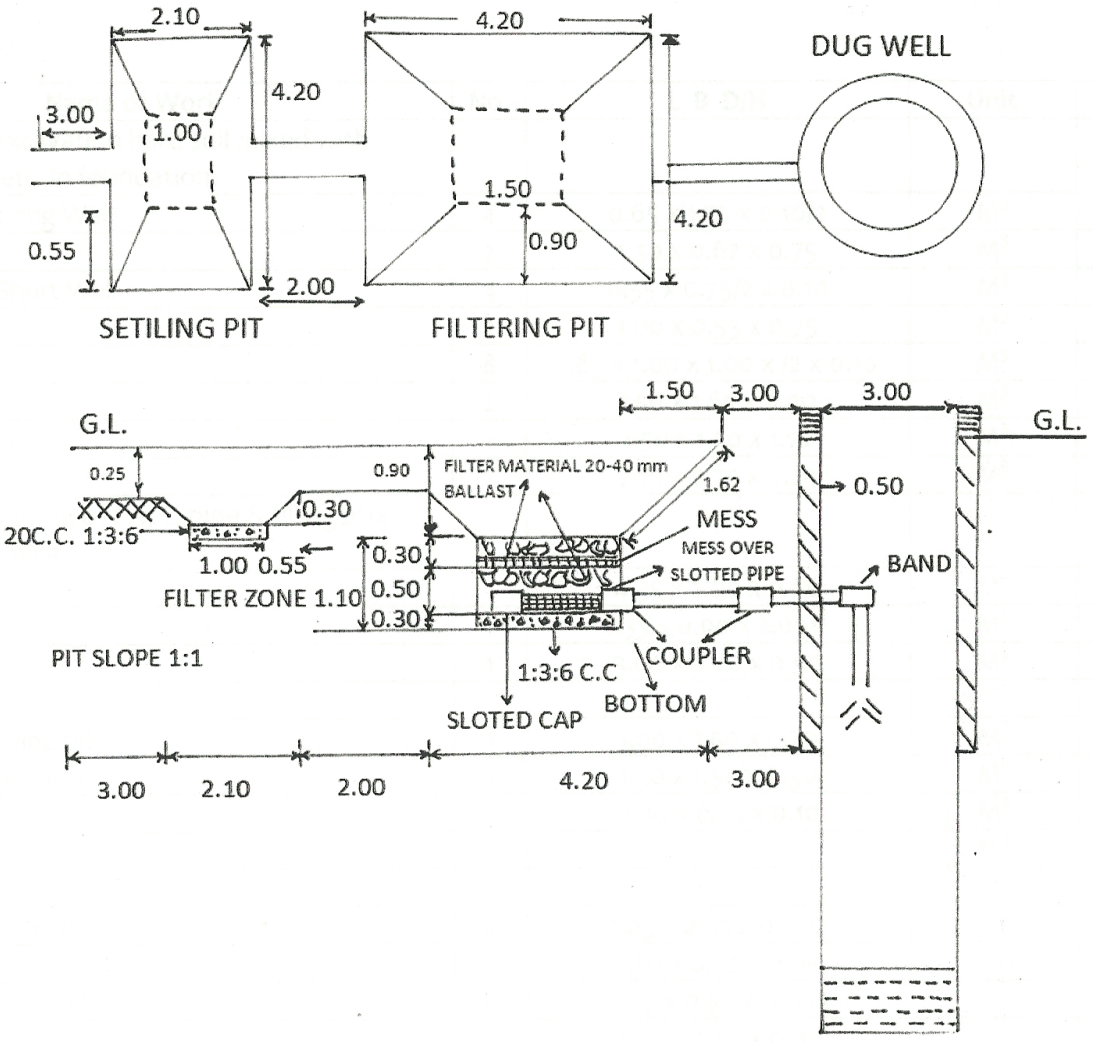
COST IN PLANTING ONE PLANT WITH DIGGING, FILLING MIXED WITH FYM AND COST OF PLANT

S.No.	Particulars	Nos..	L	B	D/H	Quantity	Rate	Amount
1.	Earth work in digging	1	1.0	1.0	1.00	1.00	36.66	36.66
2.	Cost of FYM, in kg/pit	1	-	-	-	10 kg	8.00	80.00
3.	Filling of pits mixed with FYM and soil	1	1.0	1.0	1.0	1.00	36.66	36.66
4.	Cost of plants	1	-	-	-	1	18.00	18.00
Total								**Rs. 171.32**
Say								**Rs. 172.00 only**

ESTIMATE FOR SILVI-PASTORAL SYSTEM (RS. HA^{-1}) PLANTATIONS (800 $PLANTShA^{1}$)

S.No.	Particulars of Works	Rate (Rs.)	Cost (Rs.)	Remarks
1.	Clear felling or bush clearance of area protected infected with Lantana etc. including Cost of burning	LS	550.00	The area is to be through bio-fencing
2.	Soil Working - earth work, Digging of Pits/holes 60 cm deep, 30 cm dia -800 Nos.. including cost of refilling and trenching (400 trenches/Ha)	LS	6085.00	
3.	Cost of seeding for 900 Nos. and grass seeding/legumes seeds and planning/sowing	-	2050.00	Rs. 2.00 Per
4.	Weeding and hoeing (2 Nos..)	LS	300.00	
	Total		**8985.00**	
	Maintenance II^{nd} year 15% of the 1st year expenditure including being up of I^{st} year failure		1350.00	
	Grand Total		**Rs. 10,335.00**	
	Say		**Rs.10,350.00**	

DUG WELL RECHARGING STRUCTURE



DETAILS OF MEASUREMENT (DUG WELLS RECHARGING)

S.No.	Name of work	Nos..	L x B x D/H	Unit	Quantity
1.	Earth work in excavation hard soil mixed with Kankar gravel, etc. in foundation.				
(a)	Setting pit (i) Long Wall	4	0.65 x 1.75 x 0.10/2	m^3	0.09
		2	1.50 x 0.62 x 0.75	m^3	1.39
	(ii) Short Wall	4	0.55 x 0.75/2 x 0.10	m^3	0.08
		2	1.00 x 0.55 x 0.75	m^3	0.82
(b)	Filtering Pit	8	1.85 x 1.00 x 1.00/2 x 0.10	m^3	1.19
		2	1.5 x 1.62 x 0.90	m^3	4.37
(c)	Drain -Filter Zone	1	1.50 x 1.50 x 1.10	m^3	2.47
		1	7.10 x 0.75 x 0.25	m^3	1.86
(d)	Excavation for laying of P.V.C. pipe & Filling after laying of P.V.C. pipe				
		1	4.35 x 2.00 x 0.80	m^3	6.96
		1	1.35 x 0.90 x 2.00/2	m^3	1.21
		1	3.00 x 2.00 x 0.90	m^3	5.40
	Total			**m^3**	**25.84**
2.	C.C. in 1:3:6 setting pit	1	1.00 x 1.50 x 0.20	m^3	0.30
	Filtering pit filter zone	1	1.50 x 1.50 x 0.30	m^3	0.67
	Drain - Filter Zone	1	7.00 x 0.75 x 0.10	m^3	0.52
	Total			**m^3**	**1.49**
3.	Brick Work 1:4				
(a)	Setting pit Long Wall	4	1.05 x 0.55 x 0.10/2		0.11
		2	1.50 x 0.62 x 0.05		0.09
	Setting pit Short Wall	4	0.55 x 0.55 x 0.10/2		0.06
		2	1.00 x 0.62 x 0.05		0.06
(b)	Filtering pit	8	1.85 x 1.62 x 0.05/2		0.60
		2	1.50 x 1.62 x 0.05		0.24
	Total			**m^3**	**1.16**
4.	Plaster Work 1:2				
	Drain-Bottom	1	7.00 x 0.25	m^2	1.75
	Drain-Side	2	7.00 x 0.25	m^2	3.50
	Selting Base	1	1.50 x 1.00	m^2	1.50
	Filtering Base	1	1.50 x 1.50	m^2	2.25
	Total			**m^2**	**9.00**

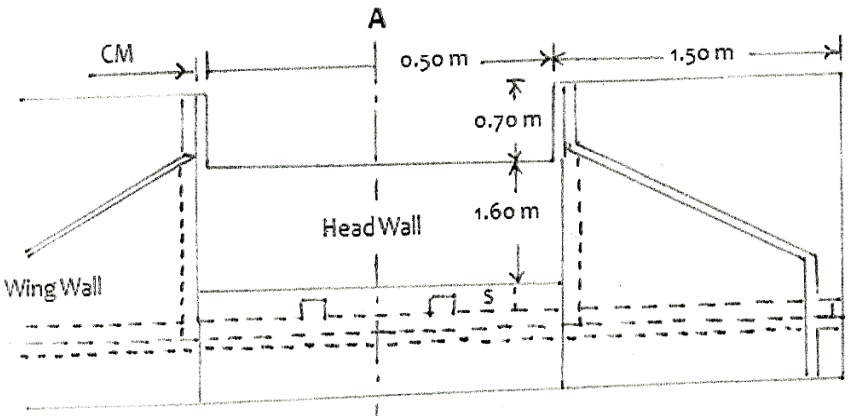
5.	Supply & Fixing of 110 mm P.V.C. Pipe	1	6.00	m	6.00
6.	Slotted Cap of 110 mm P.V.C.	1	-	No.	1.00
7.	P.V.C. Bend 110 mm	1	-	No.	1.00
8.	P.V.C. coupler 110 mm	1 x 2	-	No.	2.00
9.	Mesh ss S/F between	1 x 2	-	Job	2.00
10.	S/O Stone sign board	1	-	Job	1.00
11.	Filter Material of 20-40 mm blast	1	1.50 x 1.50 0.80	m^3	1.80
12.	Slotted pipe P.V.C.110 mm	1	1 x 1	m	1.00

ABSTRACT OF COST HARD ROCK W/O JAGAT

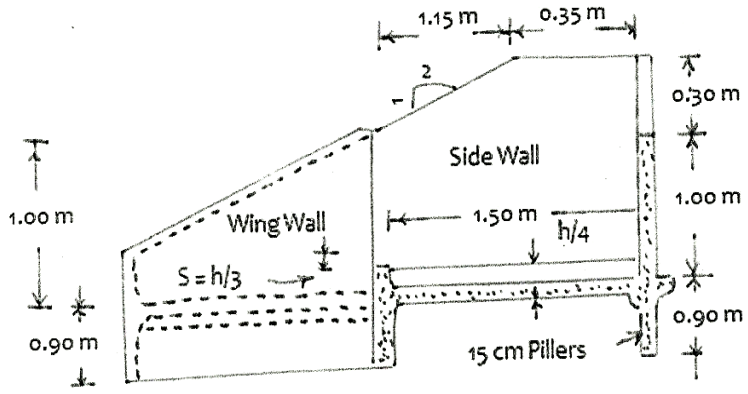
S.No.	Name of Work	Quantity	Unit	Rate	Amount
1.	Earth Work	25.84	m^3	36.36	947.29
2.	C.C.W Work in 1:3:6	1.49	m^3	2766.00	4121.34
3.	Brick Work	1.16	m^3	4000.00	4640.00
4.	Plaster Work in 1:2	9.00	m^3	81.98	737.80
5.	S/F of 110 mm P.V.C. Pipe	6.00	R.M.	150.00	900.00
6.	Slotted Cap 110 mm P.V.C.	1	No.	150.00	150.00
7.	P.V.C. Bend 110 mm	1	No.	130.00	130.00
8.	P.V.C. Coupler 110 mm	2	No.	100.00	200.00
9.	Mesh ss S/F between	2	Job	100.00	200.00
10.	S/O Fixing of Sign Board	1	Job	1850.00	1850.00
11.	Filter Material of 20-40 mm blast	1.8	m^3	855.00	1539.00
12.	Slotted Pipe P.V.C.110 mm	1	R.M.	250.00	250.00
	Total				**Rs. 15,665.43**
	Say				**Rs. 15,700.00 only**

DRAWING OF SPILLWAY OF CREST LENGTH 0.5 m

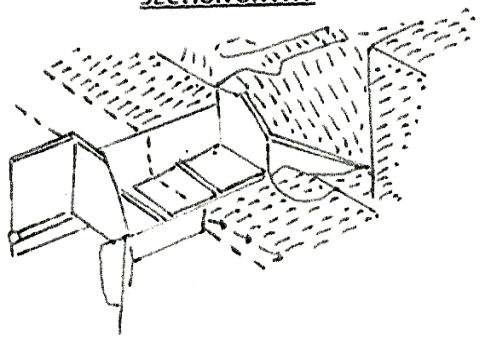
Not to Scale



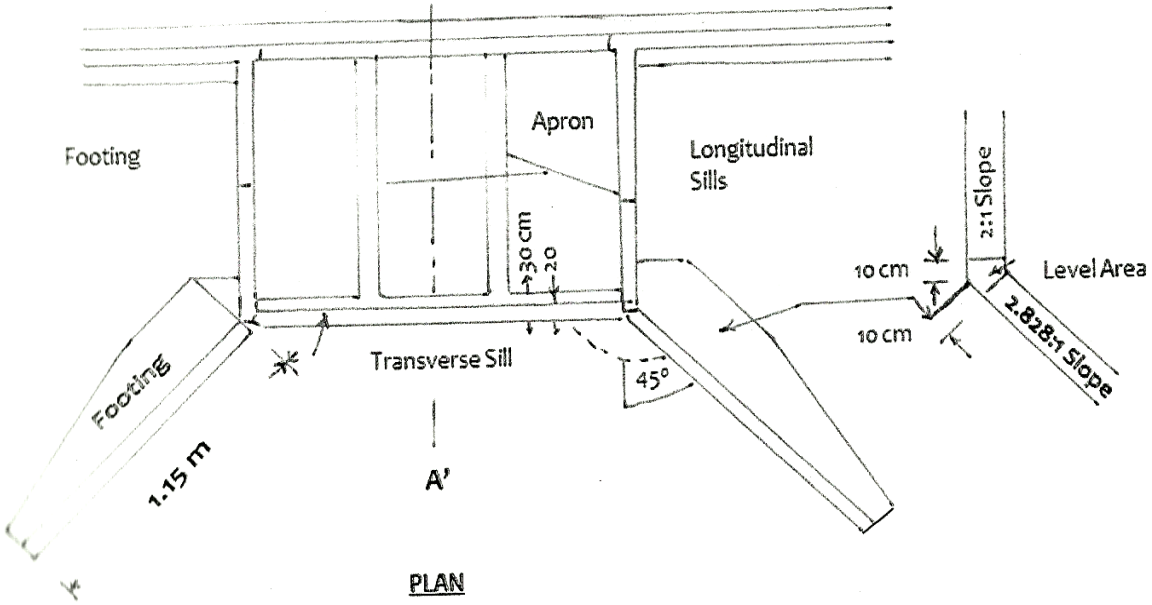
DOWN STREAM ELEVATION



SECTION ON A-A'



PERSPECTIVE VIEW

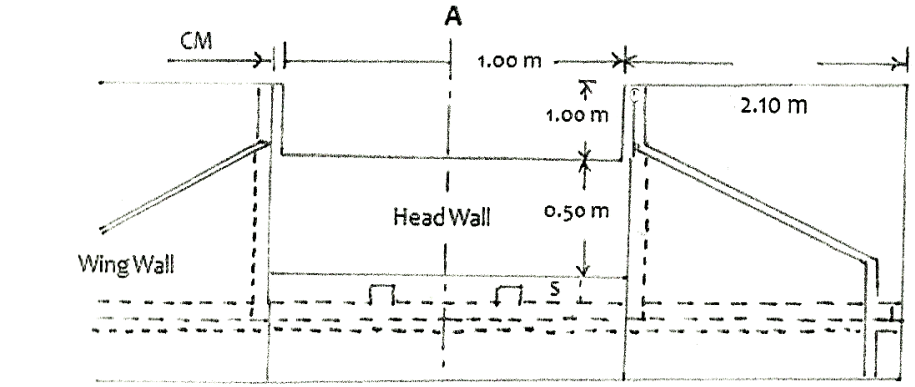


PLAN

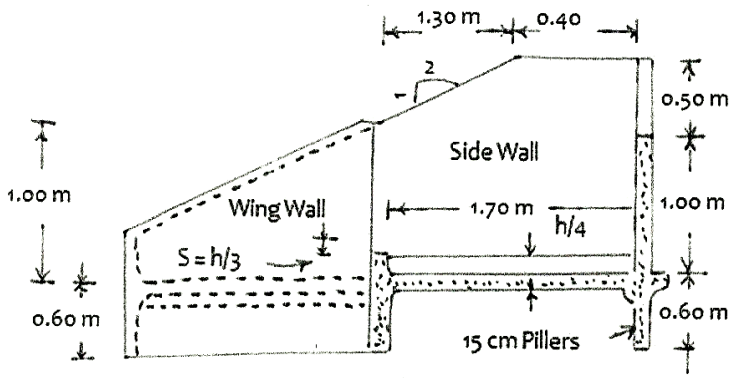
All Dimensions in Metre

DRAWING OF SPILLWAY OF CREST LENGTH 1.0 m

Not to Scale



DOWN STREAM ELEVATION



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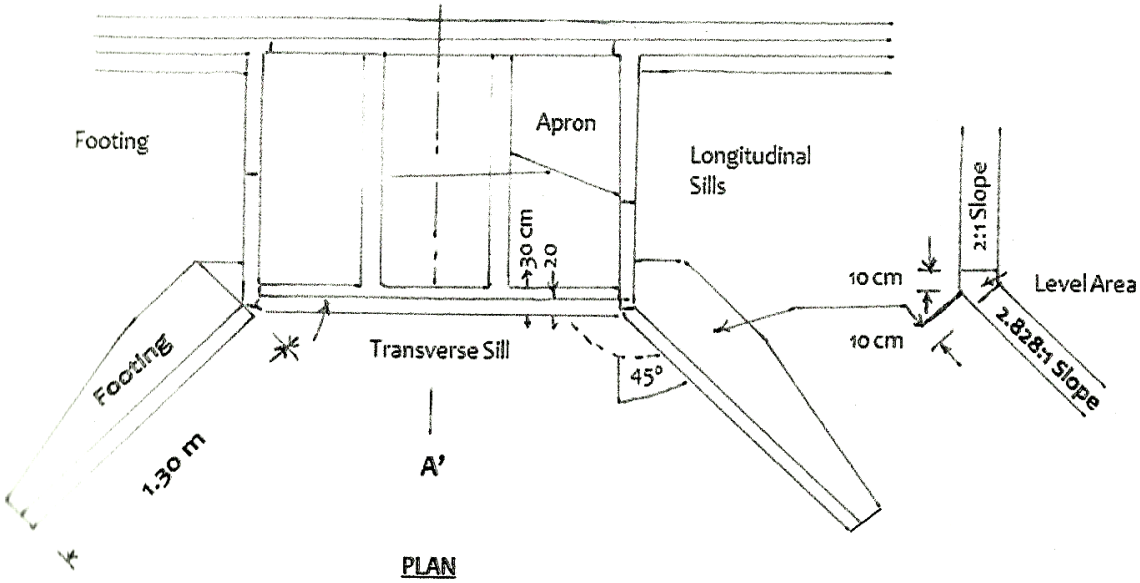
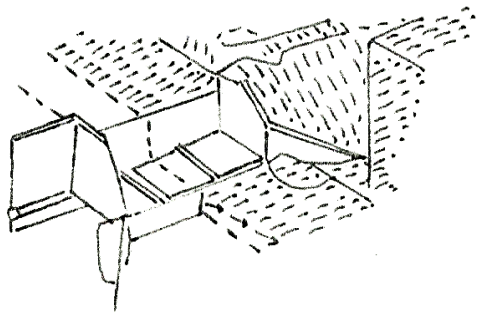


PLAN

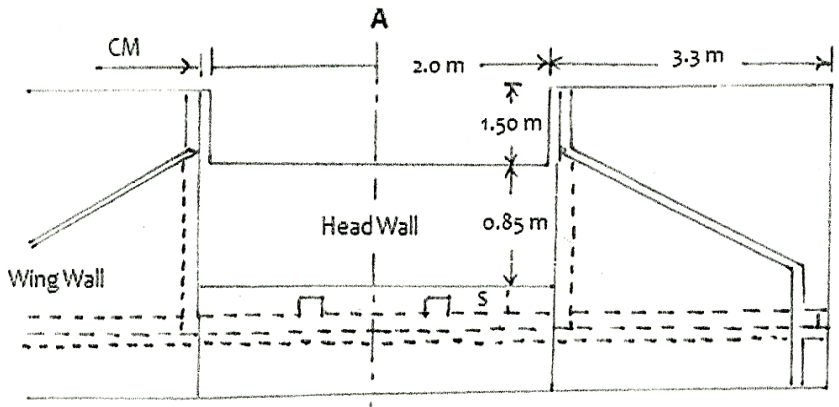


PERSPECTIVE VIEW

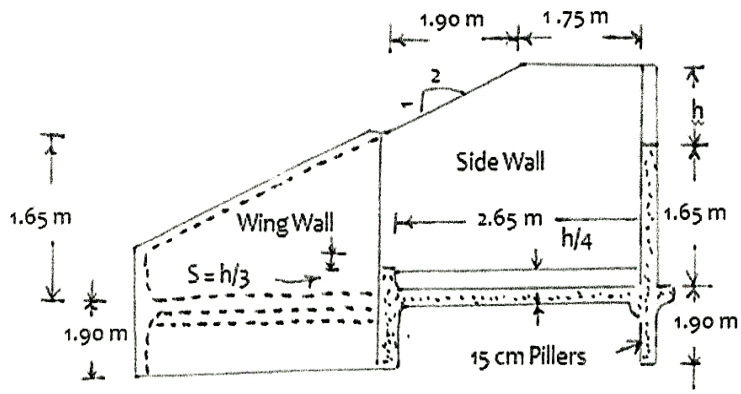
All Dimensions in Metre

DRAWING OF SPILLWAY OF CREST LENGTH 2.0 m

Not to Scale



DOWN STREAM ELEVATION



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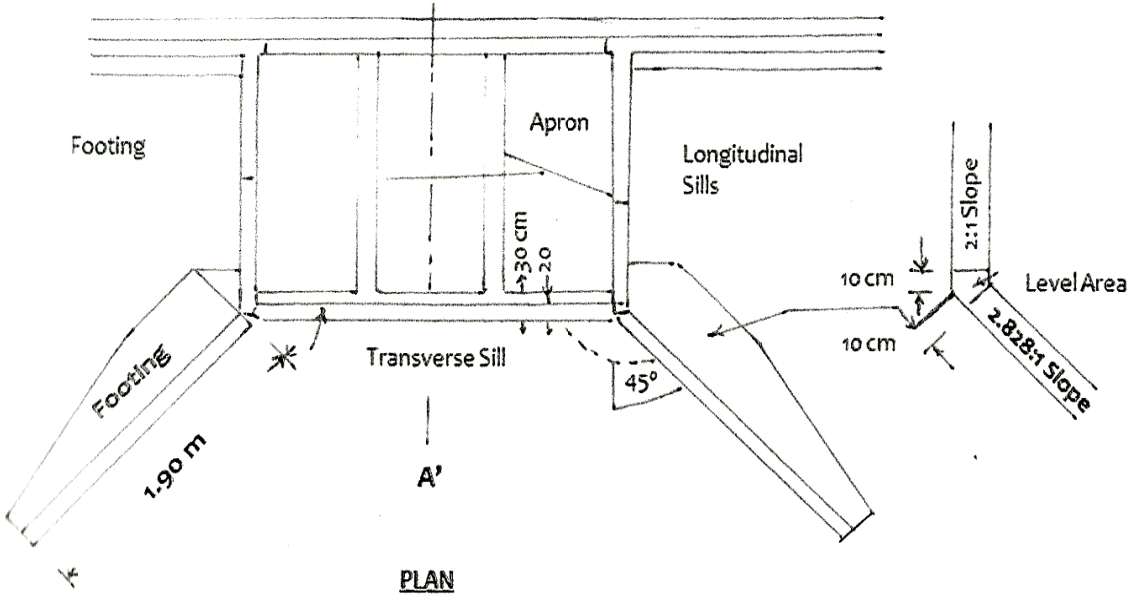
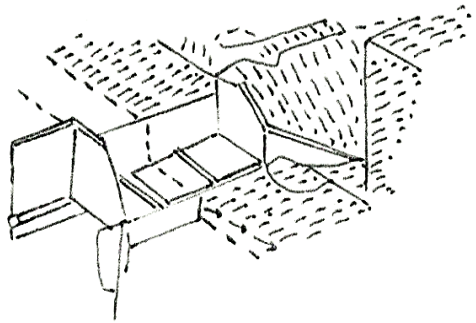


PLAN

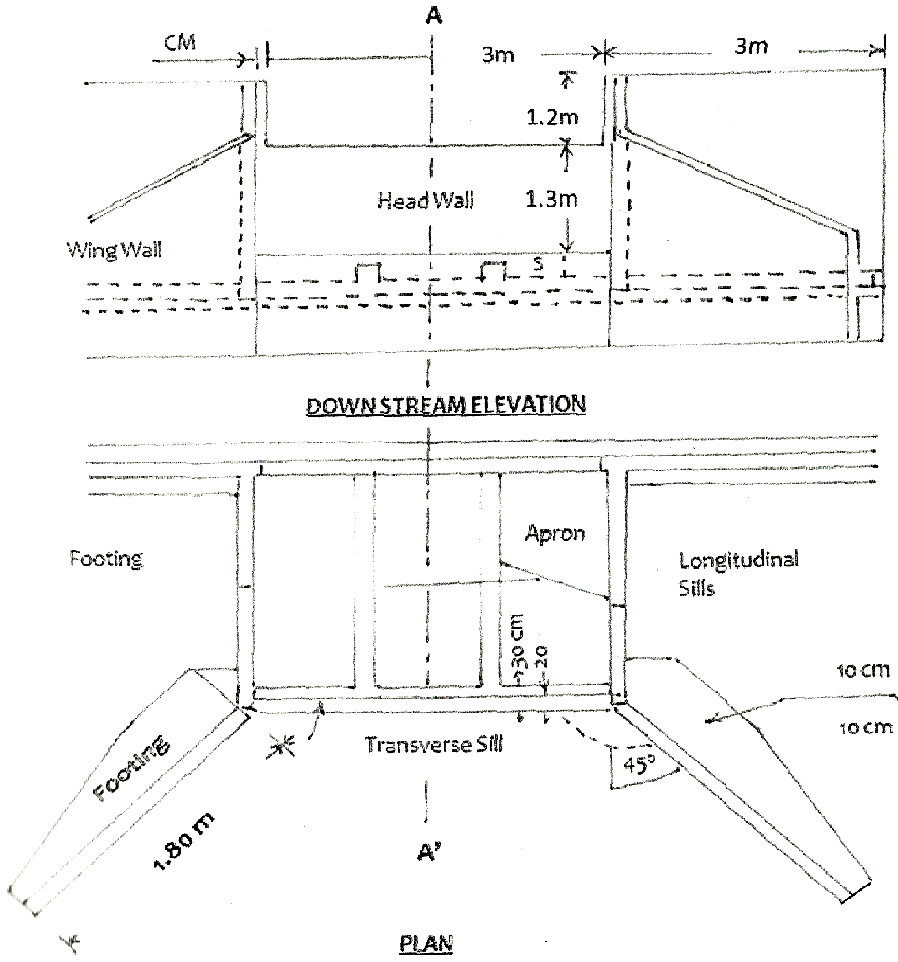


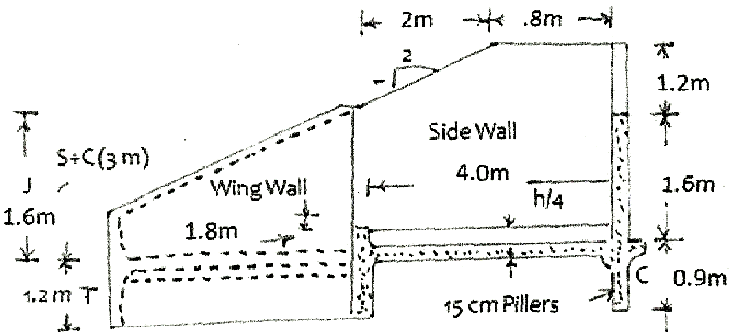
PERSPECTIVE VIEW

All Dimensions in Metre

DRAWING OF SPILLWAY OF CREST LENGTH 3.0 m

Not to Scale





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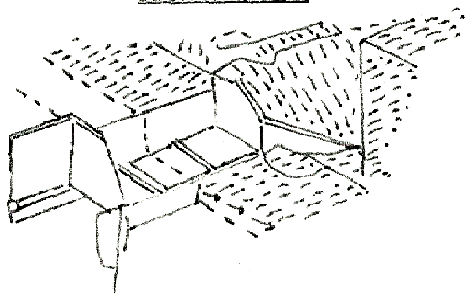
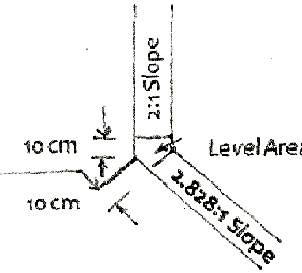


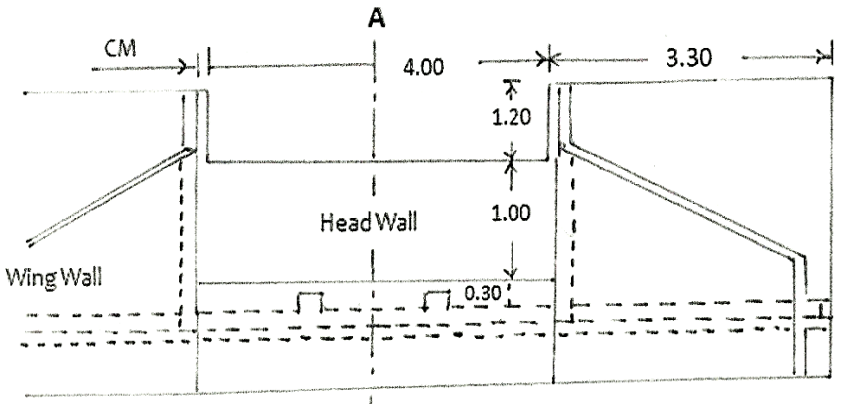
PERSPECTIVE VIEW



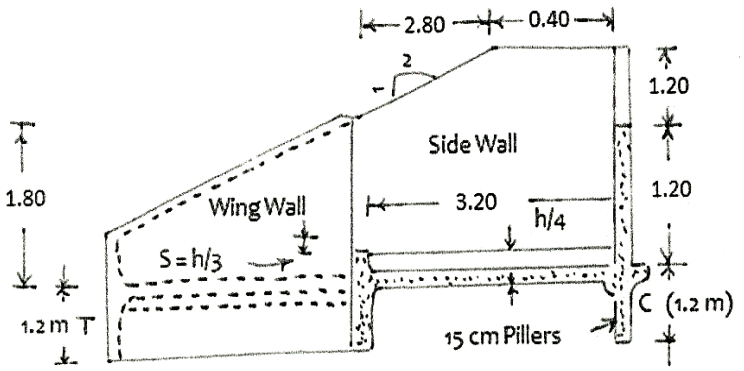
All Dimensions in Metre

DRAWING OF SPILLWAY OF CREST LENGTH 4.0 m

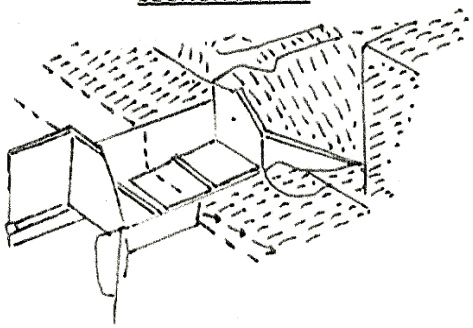
Not to Scale



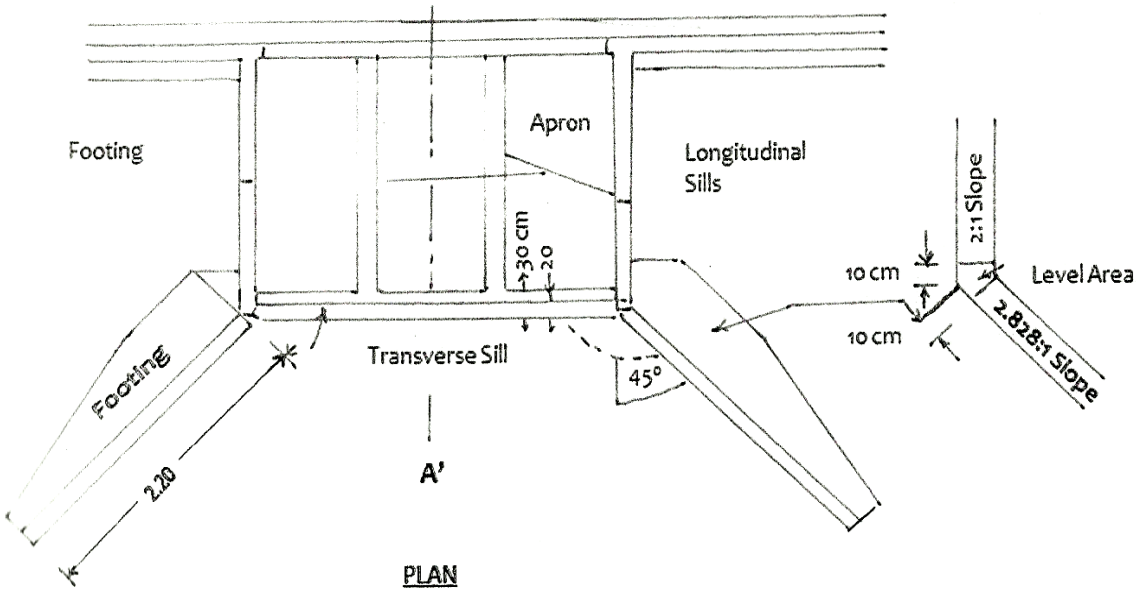
DOWN STREAM ELEVATION



SECTION ON A-A'



PERSPECTIVE VIEW



PLAN

All Dimensions in Metre

DRAWING AND DETAIL ESTIMATE OF PRODUCTION SYSTEM AND MICRO-ENTERPRISES IN WATERSHED WORK PHASE

DEMONSTRATION OF WHEAT

1- Variety recommended for District - Fatehpur

Irrigated - W.H-542

Unirrigated - K-8027, k-5351 (Mandakini)

Kathia - Raj 1555

2- Seed Rate - 100-125 Kg/hectare

3- Requirement of fertilizers/ha N-125 Kg, P-70-75 Kg., K-70-75 Kg.

ESTIMATE OF DEMONSTRATION OF WHEAT IN WATERSHED (Per Ha)

S.No.	Particulars	Quantity	Rate	Amount	Remark
1.	Tillage operation or Preparation of field for sowing	1.0 ha	1000.00/ha	1000.00	Since the project is to be operated in a participatory Mode, contribution in form of the tillage, sowing, irrigation and harvesting done by farmer is not included in the estimates
2.	Cost of Seed	100.00 kg	18.00/kg	1800.00	
3.	Sowing by seed drill	1.0 ha	1000.00/ha	1000.00	
4.	D.A.P. 18:46	160 kg	573.00/50 kg	1833.60	
5.	Urea	210 kg	270.00/50 kg	1134.00	
6.	Potash (M.O.P.)	150 kg	300.00/50 kg	900.00	
7.	Irrigation (three irrigation)	1.00 ha	650.00/ha	650.00	
8.	Harvesting	1.00 ha	2000.00/ha	2000.00	
Total				**5667.60**	
Say				**5700.00**	

Hence demonstration cost of wheat / ha is Rs. 5700.00

DEMONSTRATION OF GRAM IN WATERSHED AREA (Per Ha)

1- Variety Irrigated - vdai, KWR-108

Rain fed - J.G.-315, Avrodhi

2- Seed Rate - 50-55 Kg/hectare

3- Requirement of fertilizers/ha N-25.0 Kg, P-80 Kg., K-30 Kg.

ESTIMATE FOR DEMONSTRATION OF GRAM (Per Ha)

S.No.	Particulars	Quantity	Rate	Amount	Remark
1.	Tillage operation or Preparation of field and seed sowing	1.0 ha (Twice)	1000.00/ha	2000.00	Since the project is to be operated in a participatory Mode, contribution the farmer of the tillage, sowing, operation sowing and harvesting is not included in the estimates
2.	Cost of Seed	55 kg	90 /kg	4950.00	
3.	D.A.P.	175 kg	573.00/50 kg	2005.50	
4.	M.O.P.	65 kg	300.00/50 kg	390.00	
5.	Medicine	1.00 ha	Lump Sum	1250.00	
6.	Harvesting	1.00 ha	700.00/ha	700.00	
Total				**8595.50**	
Say				**8600.00**	

Hence demonstration cost of Gram / ha is Rs. 8600.00

DEMONSTRATION OF ARHAR IN WATERSHED AREA (Per Ha)

1- Variety -Malviya-13, Narendra-1, Amar

2- Seed Rate - 30 Kg/hectare

3- Requirement of fertilizers/ha N-20.0 Kg, P-50 Kg., K-40 Kg.

ESTIMATE FOR DEMONSTRATION OF GRAM (Per Ha)

S.No.	Particulars	Quantity	Rate	Amount	Remark
1.	Tillage operation or Preparation of field and seed sowing	1.0 ha	1000.00/ha	2000.00	Since the project is to be operated in a participatory Mode, contribution by the farmer in the form of tillage, operation sowing and harvesting is provided by participating farmers, hence this is not included in the estimates
2.	Cost of Seed	30.0 kg	120.00 /kg	3600.00	
3.	Nitrogen N.P.K. 16:32:16	190.0 kg	470.00/50 kg	1786.00	
4.	M.O.P.	-	-	-	
5.	Urea	-	-	-	
6.	Medicine	1.00 ha	Lump Sum	1000.00	
7.	Harvesting	1.00 ha	650.00/ha	650.00	
Total				**6386.00**	
Say				**Rs. 6400.00**	

Hence per Hectare of demonstration - Rs. 6400.00

DEMONSTRATION OF HYBRID BAJRA IN WATERSHED AREA (Per Ha)

1- Requirement of Seed Rate - 10 Kg/hectare

2- Requirement of fertilizers/ha N-60.00 Kg, P-40.00 Kg., K-40.00 Kg.

ESTIMATE FOR DEMONSTRATION OF BAJRA (Per Ha) RAIN FED

S.No.	Particulars	Quantity	Rate	Amount	Remark
1.	Tillage operation or Preparation of field and seed sowing	1.0 ha	1000.00/ha	2000.00	Since the project is to be operated in a participatory Mode, contribution of tillage operation, and harvesting cost
2.	Cost of Seed	10.0 kg	130.00 /kg	1300.00	
3.	Nitrogen N.P.K. 16:32:16	125.0 kg	470.00/50 kg	1175.00	
4.	M.O.P.	40 kg	300.00/50kg	240.00	
5.	Urea	90 kg	270.00/50 kg	486.00	
6.	Harvesting	1.00 ha	650.00/ha	600.00	
Total				**3201.00**	
Say				**Rs. 3200.00**	

Hence per Hectare of demonstration of Bajra is Rs. 3200.00/ha

DEMONSTRATION OF AGRO-FORESTRY / HORTICULTURE

DEMONSTRATION OF AGRO-HORTICULTURE USING PLASTIC DRUM OF 200 LITRES CAPACITY

District Fatehpur is situated in Middle Zone region where there is scarcity of water and in summer temperature rises up to 51^0C causing upper layer of fields dry and therefore mortality rate of plants is very high. Farmers usually like to grow grain crops only. They are not interested in horticulture because of Anna Pratha and less holding. The production of crops decreases below the tree.

Therefore to promote horticulture with crops a demonstration model using plastic drums for horticulture is made. A mainly crops root goes in to the soil up to "4-5" in cereal crops and "6-9" in pulses. Using plastic drums the plants will be planted 50-60 cm below the ground level which is below the root zone of crops. Therefore trees will not able to take nutrients from upper layer of fields and there will no effect of plants on crops.

In summer season up to 1 to 1.50m depth of soil becomes dry causes more mortality rate of plants, using drums plants are planted below 50-60 from Ground level and in rainy and winter season up to February roots of plants goes below 2.10m below where moisture will be available and plants will be safe in summer also. Using barbed wire fencing the plants will be protected by Anna Pratha.

Therefore, it is hoped that farmers will adapt this procedure for Agro-forestry and will become prosperous.

DETAIL ESTIMATE OF DEMONSTRATION OF HORTICULTURE AND MIXED CROPPING

S.No.	Description of Work	No.	L	B	D/H	Quantity
1	Earth work in cutting	156	3.14 x 1.20	-	1.35	793.54
	Trench	156	1.50	0.75	0.75	131.62
	Fencing Poll	133	0.20	0.20	0.20	1.064
Total						**926.22 cum**
2	Farm yard manure	156 x 10	3.14 x 1.00	-	-	1560 kg
3	Filling of earth work with farm yard manure	156	0.20	0.20	1.20	587.80 cum
4	C.C.W. 1:2:4 for fencing poll	133	1.80	-	0.20	1.064 cum
5	Angle iron for poll	133	400	-	-	239.40 m
6	Barbed wire	3	-	-	-	1200.00m
7	Plants	156	-	-	-	156 Nos..
8	Plastic drums (200 liter)	156	-	-	-	156 Nos..

CONSUMPTION OF MATERIALS

S.No.	Description of work	Quantity	Farmyard Manure (kg)	Cement Bags (Nos.)	Coarse Sand (cum)	G.S. Grit 10-20 mm	Angle iron (m)	Barbed Wire (kg)	Planting Durm (Nos.)
1	C.C.W. 1:2:4	1.064 cum	-	6.49	0.446	0.883	-	-	-
2	Angle iron	239.4m	-	-	-	-	239.40	-	-
3	Barbed wire	1200.0m	-	-	-	-	-	1200.0	-
4	Farmyard manure	1560.0kg	1560 kg	-	-	-	-	-	-
5	Plastic drum	156 Nos..	-	-	-	-	-	-	156
	Total		**1560.0 kg**	**6.49**	**0.446**	**0.883**	**239.40**	**1200.0**	**156**
	Say		**1560.0 kg**	**6.50 bags**	**0.450 cum**	**0.900 cum**	**239.40**	**1200.0 m**	**156**

COST OF MATERIALS

S.No.	Particulars	Quantity	Rate	Amount
1	Farm yard manure	1560.0 kg	10.00/kg	15600.00
2	Barbed wire	1200.0 m/120.0 kg	6.50/kg	726.00
3	Angle iron	239.40 m/785 kg	40.50/kg	31792.50
4	Plastic drum	156 Nos..	690.00 each	107640.00
5	Cement	6.50 bags	255.00/bag	1657.50
6	Coarse sand	0.450 cum	910.00/cum	409.50
7	G.S. Grit 10-20 mm	0.900 cum	1250.00/cum	1125.00
8	Plants	156 Nos.	18.00 each	2808.00
Total				Rs. 1,68,292.50

LABOUR CHARGES

S.No.	Particulars	Quantity	Rate	Amount
1	Earth work	1514.02 cum	36.66/cum	55503.97
2	C.C.W. 1:2:4	1.064	492.00/cum	523.88
3	Fixing of angle iron	10 Man Days	100/Man Day	1000.00
4	Fixing of barbed wire	15 Man Days	100/Man Day	1500.00
Total				**Rs. 58,527.85**

TOTAL EXPENDITURE	
1. Cost of materials	1,68,292.50
2. Labour Charges	58,527.85
Total	**Rs. 2,26,819.50**
Say Rs. 2,26,820.00 only	

DEMONSTRATION OF GREEN MANURING

Green Manuring is very useful but due to sowing of Kharif season crop, lack of suitable type of seeds, and limitation of moisture, it is not widely practiced. Green Manuring brings immediate advantage because of its quick decomposition where as FYM and compost improves the soil physical condition in the long-run. Benefits of Green Manuring accrue from substitution of chemical fertilizers; enhance soil biological activities and erosion control due to vegetative cover.

Sesbania Species (Dhaincha) and *Crotolaria Juneea* (Sunhemper Sanai) are most common green manure crops. they accumulate about 100 kg N/ha in their biomass and 64-88% of this is derived from atmosphere. Apart from direct benefit of green Manuring as a source of nutrients and organic matter, it has the capacity to mobilize soil phosphorus and other nutrients. it also helps in reclamation of problem of soil, e.g., *Sesbania* helps in removing exchangeable sodium and reclamation of salt affected soils.

In District Fatehpur more fields are kept fallow and only single crop in Rabi is grown.

Therefore, this area is suitable for Green Manuring. Therefore, in I.W.M.P. Ist Project, efforts will be made to oblige the farmers for Green Manuring.

A Typical Estimate is made for Green Manuring is given below:

ESTIMATE FOR GREEN MANURING IN THE WATERSHED (PER ha)

S.No.	Particulars	Rate	Cost	Remark
1	Seed of Sesbania (Dhaincha)25kg/ha	25.00/kg	625	Since the project is to be operated in a participatory mode, contribution in the form of tillage will be done by farmers is not included in the estimate.
2	Tillage operation before sowing and to plough the plants of Dhaincha after 40-50 days of sowing for Green Manuring.	1000/ha Before and after saring	2000.00	
Total			**Rs. 625.00**	

Therefore cost per hectare of Green Manuring is Rs. 625.00/ha

PASTURE MANAGEMENT

Introduction: The sound animal industry in any country centers around good quality feed and fodders. The livestock population in India is nearly 15% of the total livestock population of the world, tough we have only 2% of the world's geographical area. The project on for green and dry fodder requirement in India has been estimated at 1061 and 590 million tons by 2010 A-*D, while the present feed and fodder resources in the country can meent only 4% of the requirement. The grazing intensity is very high i.e., 26 adult cattle unit (ACU)/ha as against 0.8 ACU in the developing countries.

The importance of grasses for protection and production, the two aspects of soil and water conservation is well known. Grass is unique in that it is the only resource utilized in situ by grazing. a "grassland" or more appropriately, a "range" is defined as "the areas which are predominantly covered with grasses or grass like plants and are primarily utilized as for age for grazing animals or used as hay." The grasslands are the major sources of food to the animals.

Pasture Management: All grazing areas are referred to as pastures, but ore specifically the term is applied to cultivated grassland used for grazing. Thus pastures are artificial grasslands with of without non-grass vegetation (such as legumes) that are created with selected high forage-yielding grass and legume species and with inputs like fertilizers and irrigation and carefully managed to exclude all other vegetation. Pastures are usually fenced and used for grazing, for gay and silage making or for both.

Intensive fodder Production: In areas where the major enterprise of the farmers centers on the milk production. Continuous supply of green fodder round the year is the basis for success of such as industry. Under the aegis of ICAR's all India coordinated Research Project of Forage Crops, Several highly production fodder cropping system have been tested and recommendations made for their general use. For region important intensive crop rotations are presented as given below

Zone wise crop rotation yield (t/ha)	**Green fodder**
Cenntral region	
1- Hybrid napier + Cowpea - Berseem + Japanrape	286.3
2- Maize + Cowper - Jowar - Berseem + japanrape	197.2
3- Jawar + Cowper - Berseem + Japanrape - Jawer + Cowpea	168.6

Conservation on of Forages: In order to sustain animal production, it is essential that the optimum feeding should be maintained round the year. In India, we have two seasons, rainy season and winter season, when surplus quantities of green fodder is available-country to this there are 2 to 3 months of lean periods (October-November and April to July) when the fodder availability to animals is at its low. In the summer months, it is difficult even to meet the maintenance requirements of the animals. Stage of maturity to feed the animals adequately during the lean period. The conservation of forages could be done in the form of silage from cultivated fodders (legumes and cereals) and also pasture grasses. Forages could also be conserved in the form of hay when dried to its nutrients. This feed stuff is quantitatively important from both maintenance and nutritional point of view.

Agro-forestry system for fodder production: A number of fodder trees play an important role in human food se4curity through their function as animal food sources, especially as drought services. Agro-forestry systems consisting of such tress and animals and/or pasture are called Silvi-Pastoral system.

Silvi-Pasture (or Silvi-pastoral system) is the most promising alternate land use system shich integrates multipurpose trees, shrubs, legumes and grasses mostly on non-arable, degraded and marginal lands for optimizing land productivity. It helps in conservation of vegetation, soil and nutrients and provides forage, timber and fuel wood on a sustainable basis.

Potentials of Semi-arid region for different forage production systems.

Region	Forge Production System
Semi arid	Integration of Agro-Silvi-Pasture, dry land agriculture on cultivated Land. Forage-cum- Copping forming on the marginal and sub marginal lands with intercropping dry lands cereals and legumes

ROLE OF GRASSLAND IN SOIL CONSERVATION

the grass plant itself protects the soil from the forces of water erosion including the impact of rain drops and surface flow. Grass acts a spring cushion intercepting and broking up the falling rain drops in their way down. Conducting the water down the blades and stems of the plants and finally allowing it to reach the ground as fine sprays without disturbing the surface. Clamps of grass plants, in a mechanical way, obstruct-flowing water and reduce its rate of flow.

In fact to control soil erosion whatever technique is adopted, there are four approaches to deal with the problem:

1- To condition the soil to make it resistant to determent and transportation and create more absorptive surface layer.

2- To cover the soil so that it is protected from the impact of wind and rain drops.

3- To decrease the velocity of wind or runoff water.

4- To provide safe disposal outlet for surplus run off.

Grass in the nature highly efficient device to protect the soil from destructive forces like rain, wind etc. Grass and legumes increase the aggregation of soil particles; Improve soil structure and water holding capacity of the soil. Grasses gives quicker protection to eroded lands. To establish gully sides, water ways, gully head and check dams. Grass is perhaps the most effective and economical tool. It can put to various uses in soil conservation:

1- Strip cropping, rotational cropping or lay farming.

2- Stabilization of bunds and terraces.

3- Stabilization of gullies, diversion or drainage channels.

4- Stabilization of sand dunes.

5- Meadows and pasture on steep slopes.

6- Fertility builder for eroded soil.

PHOTOGRAPHS

OF

SOIL MAP, SOCIAL MAP,

RESORSE MAP, OF

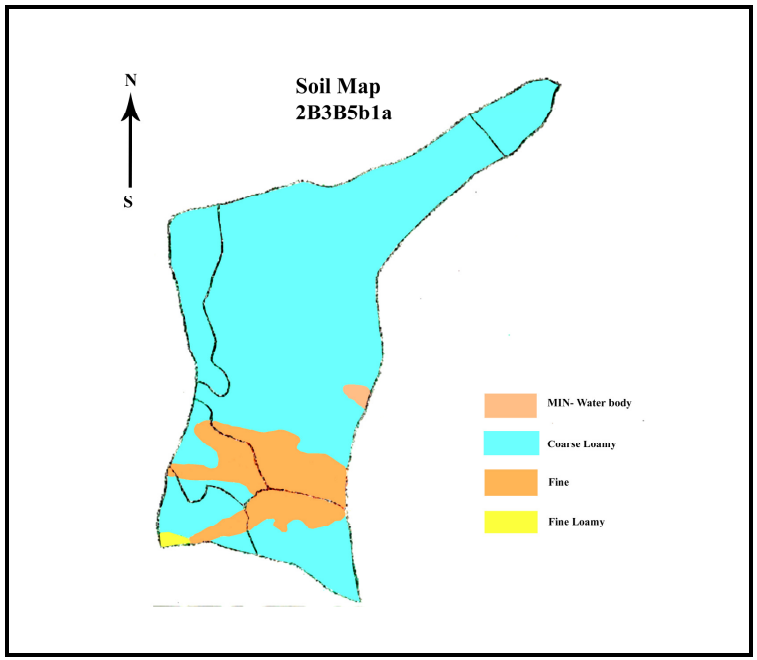
ALL VILLAGES IN I.W.M.P. - Ist

AND

SELF HELP GROUPS (SHG's)

IN

PARTICIPATORY RURAL APPRAISAL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MIN- Water body
Coarse Loamy
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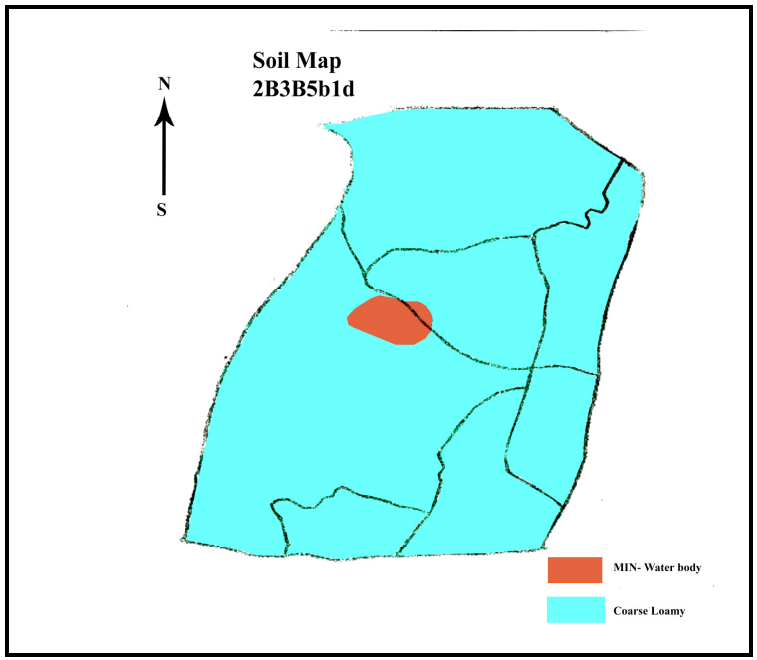
Fine Loamy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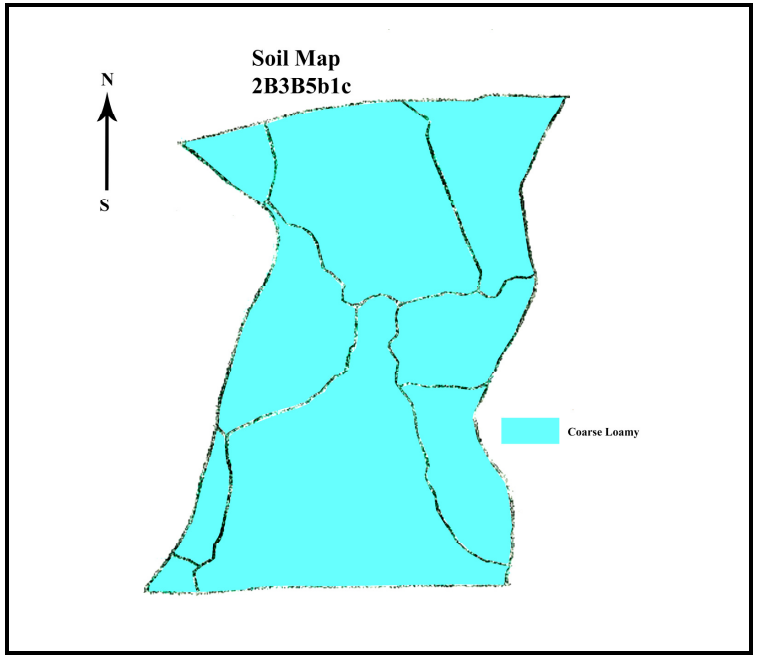
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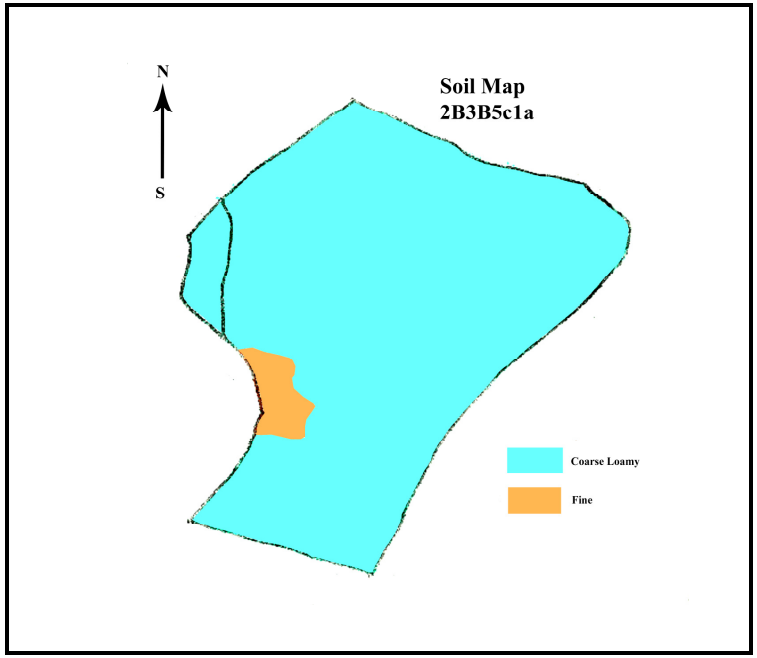
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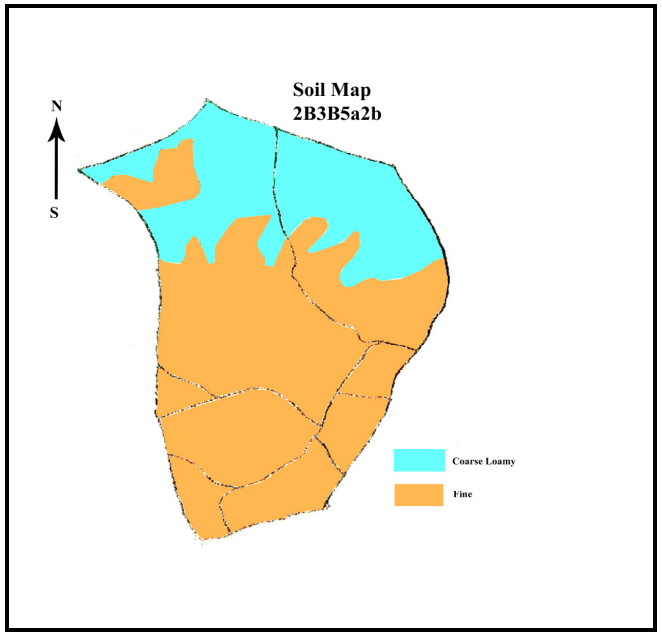
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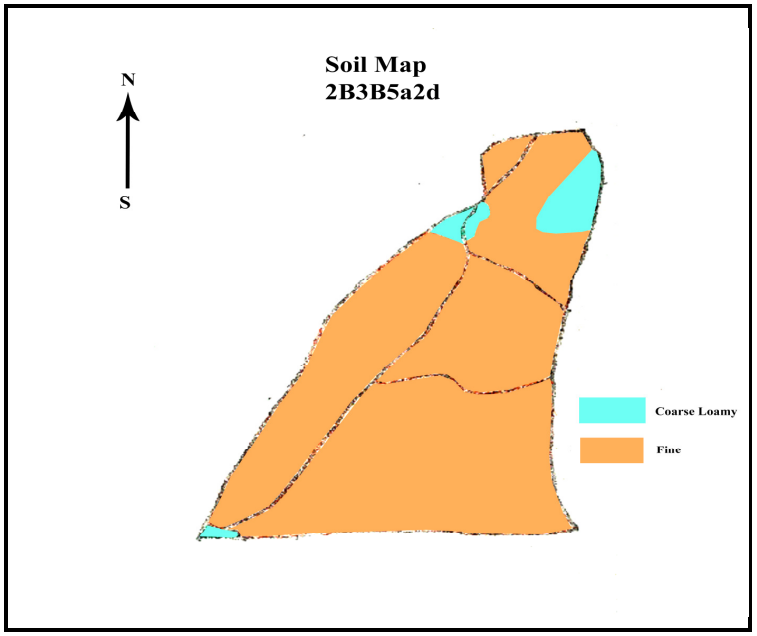
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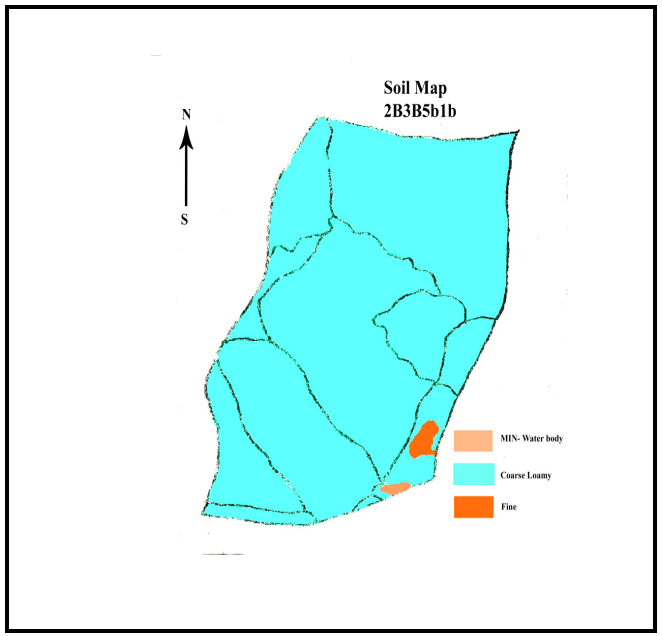
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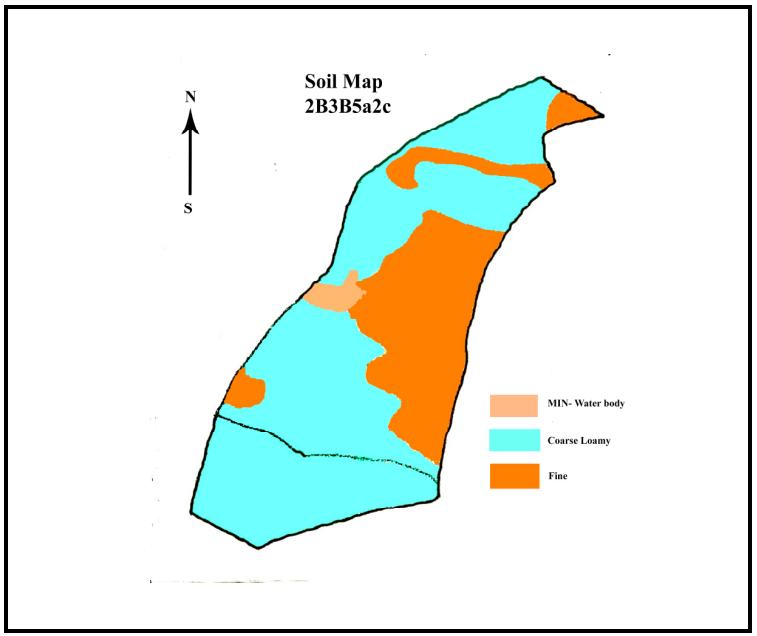
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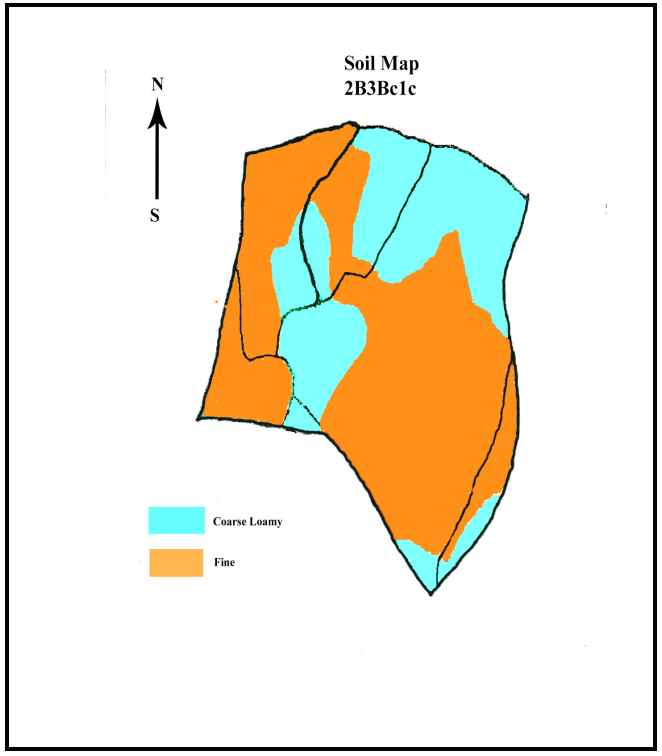
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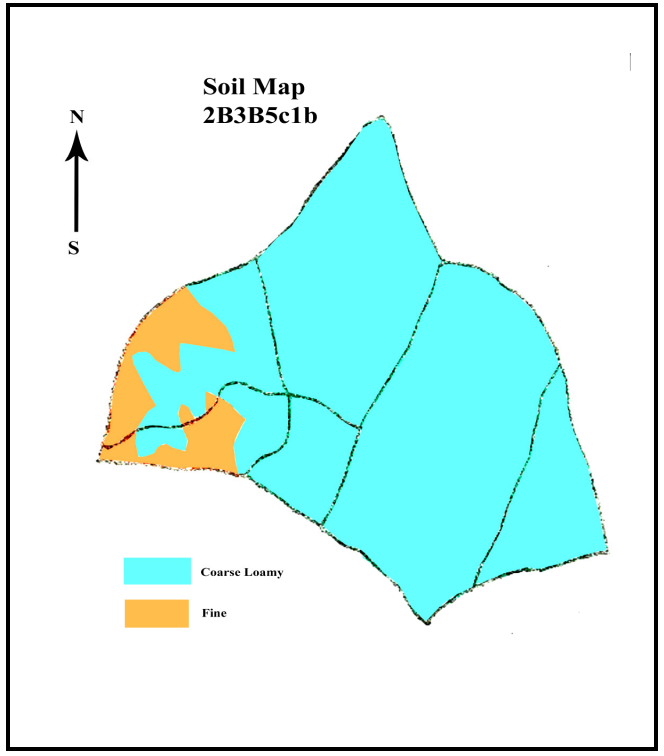
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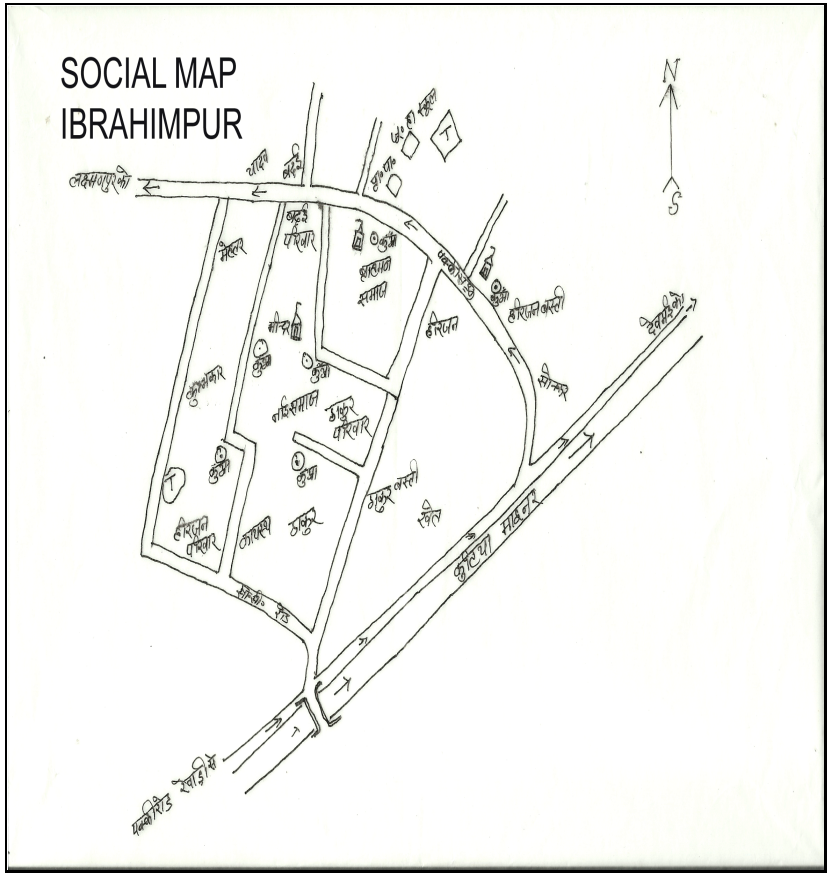
SOCIAL MAP
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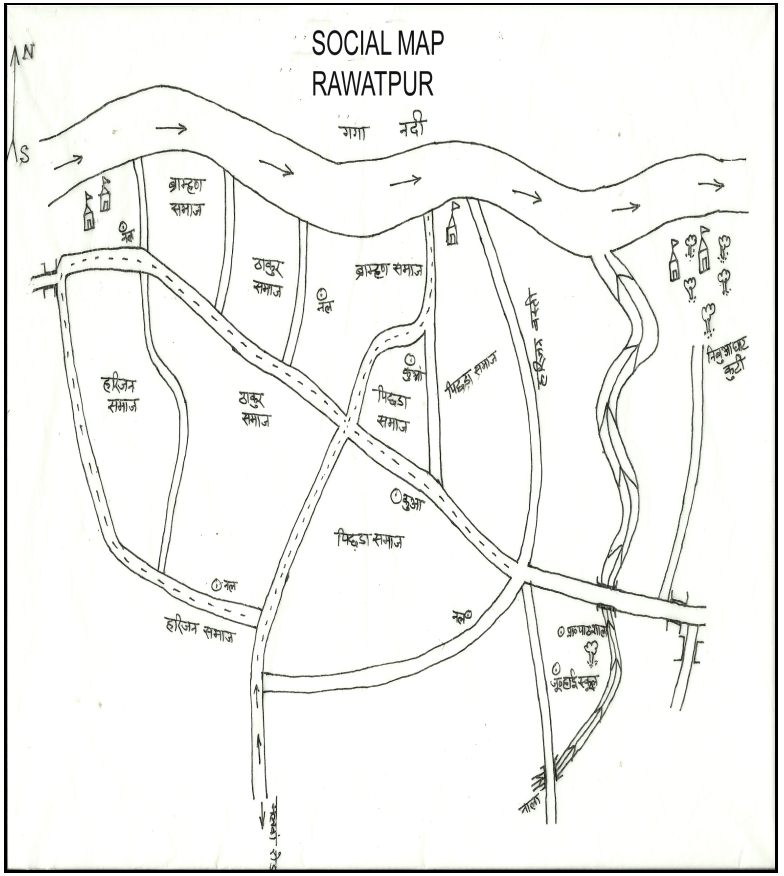
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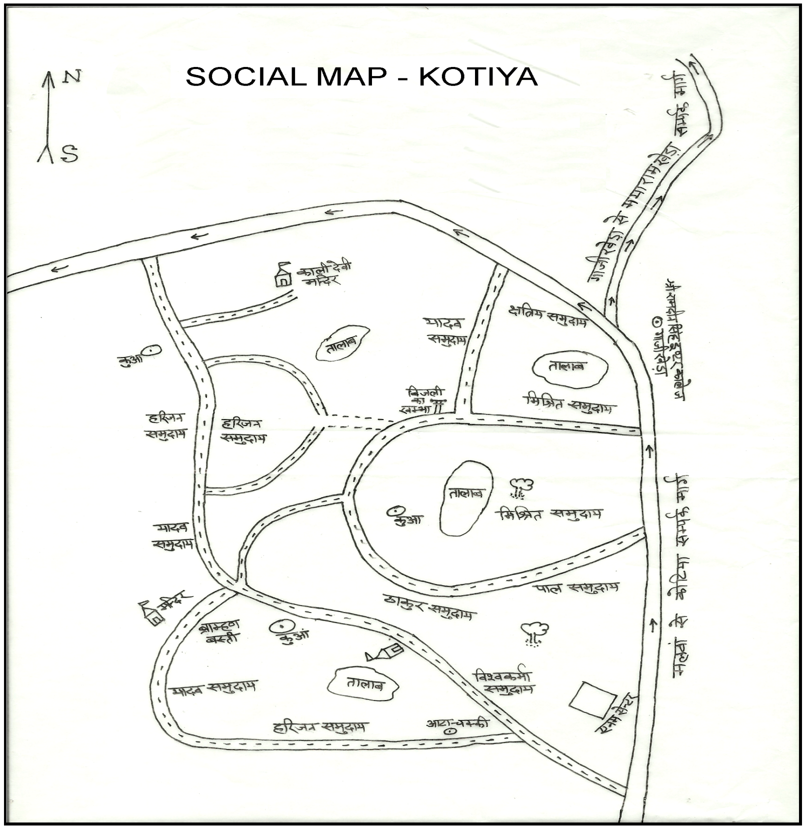
SOCIAL MAP - KOTIYA
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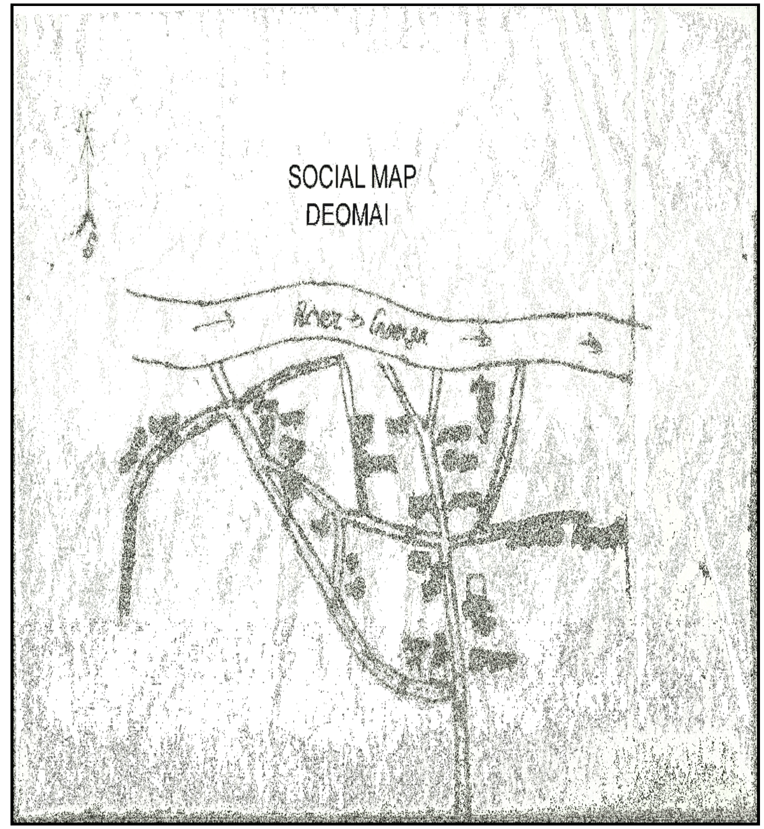
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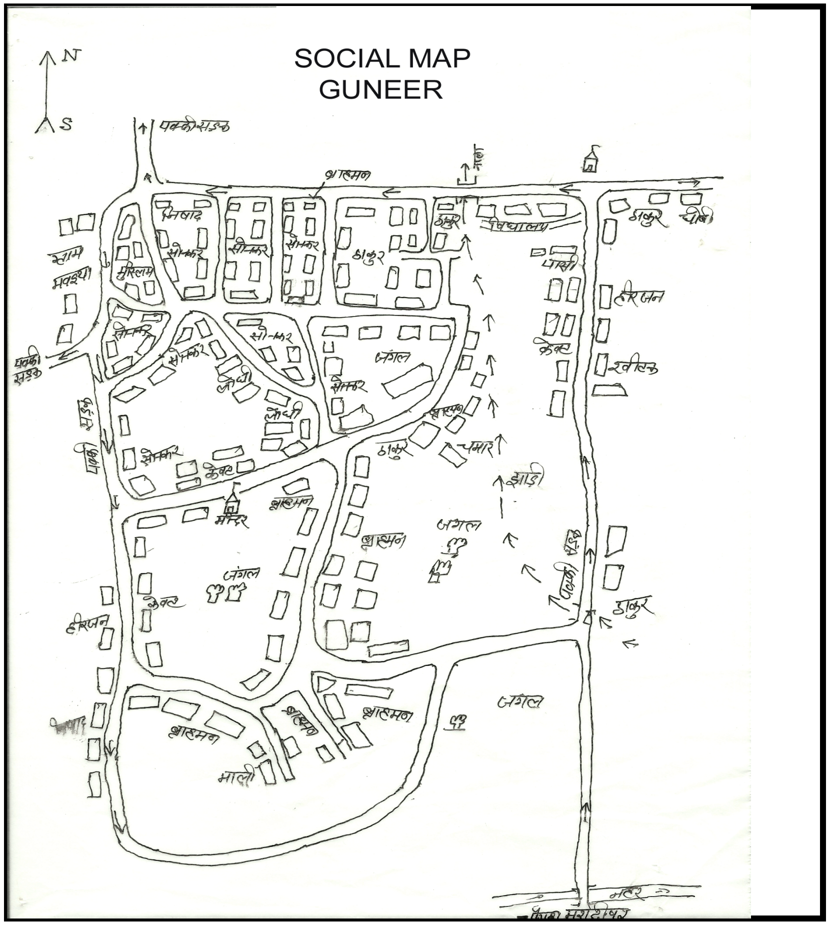
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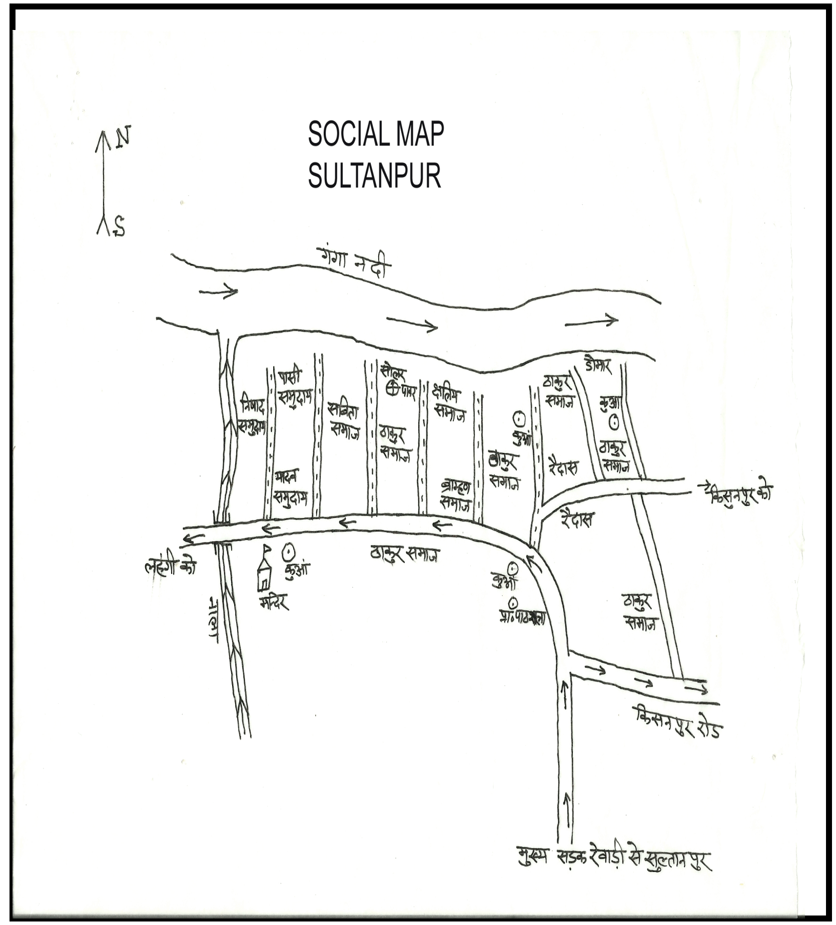
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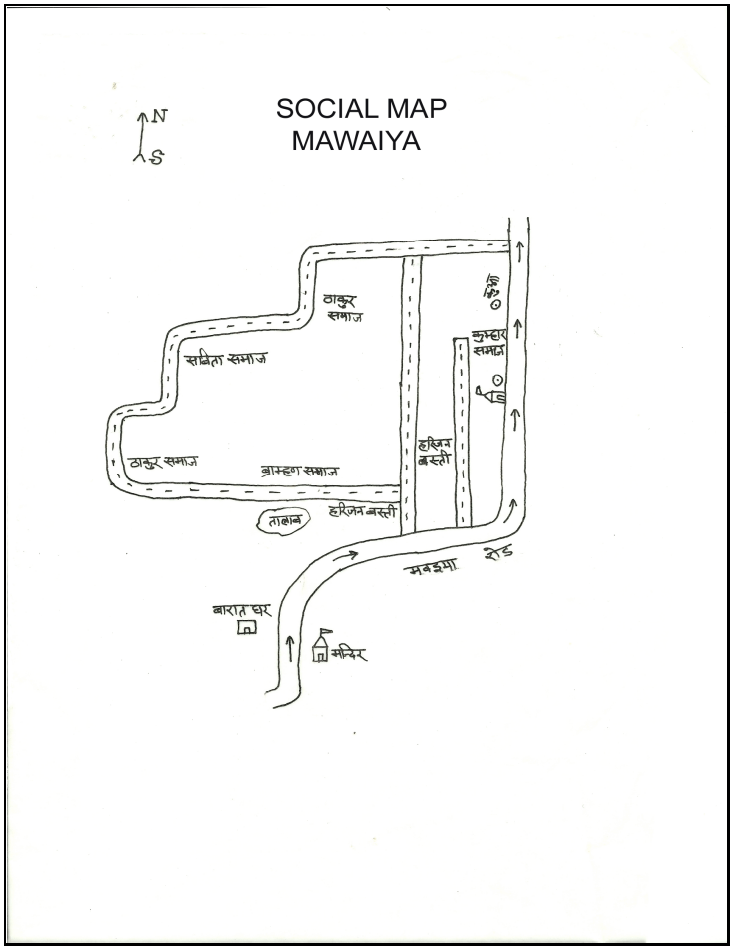
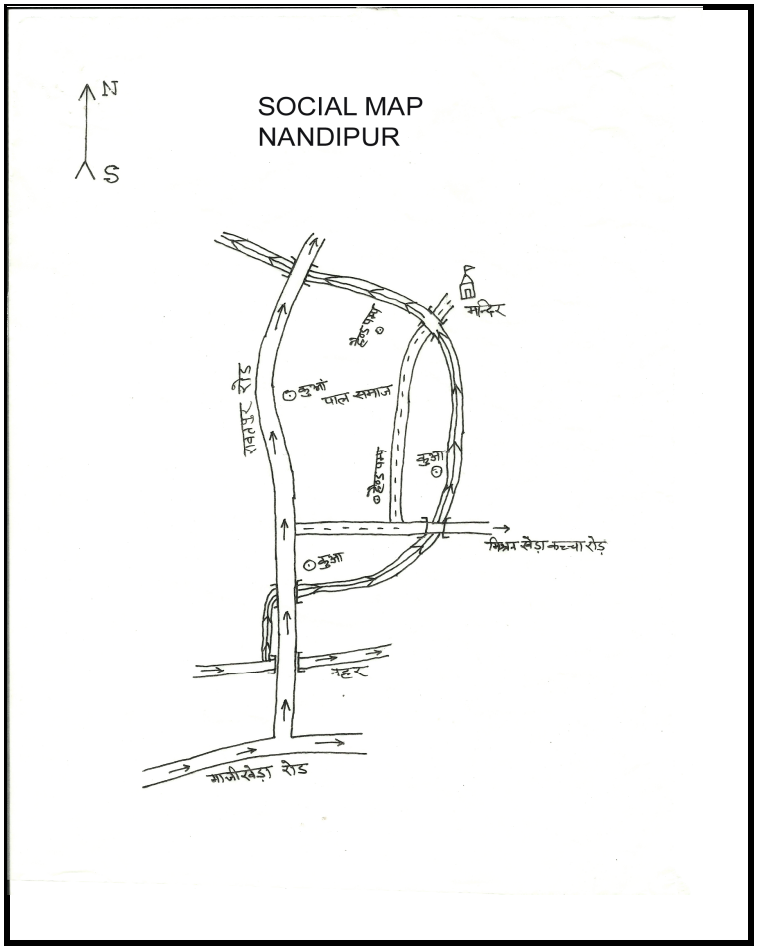
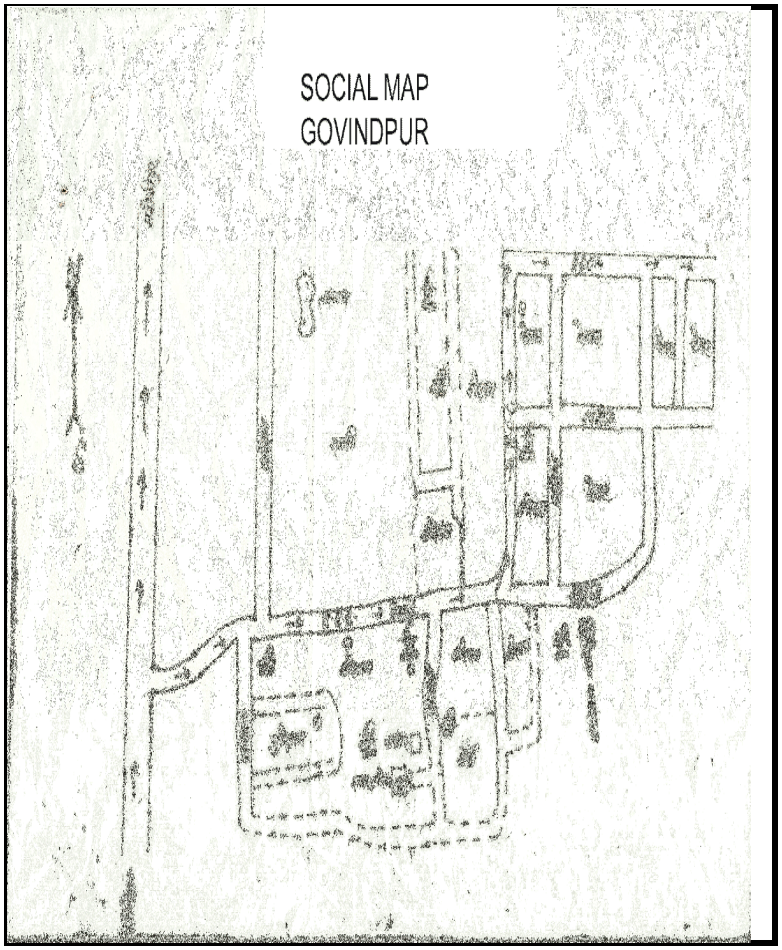
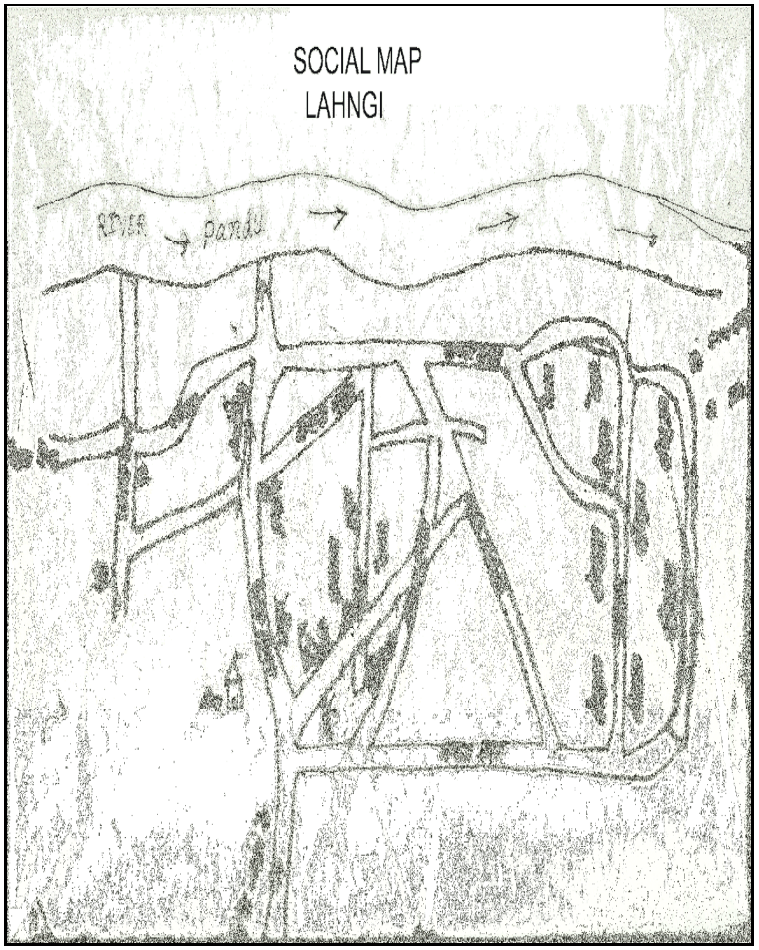
गंगा नदी
किसनपुर रोड
मुख्य सड़क रेवाड़ी से सुल्तानपुर


N
S
SOCIAL MAP
MAWAIYA
ठाकुर समाज
साहिता समाज
कुम्हार समाज
ठाकुर समाज
ब्राम्हण समाज
हरिजन बस्ती
तालाब
हरिजन बस्ती
मवइया रोड
बारात घर
मन्दिर


N
S
SOCIAL MAP
NANDIPUR
मन्दिर
हैण्डपम्प
कुर्मी घाल समाज
राजनगर रोड
हैण्डपम्प
कुर्मी
मिश्रम सेड़ा-कच्चा रोड़
कुर्मी
नहर
गाजीखेड़ा रोड


SOCIAL MAP
GOVINDPUR

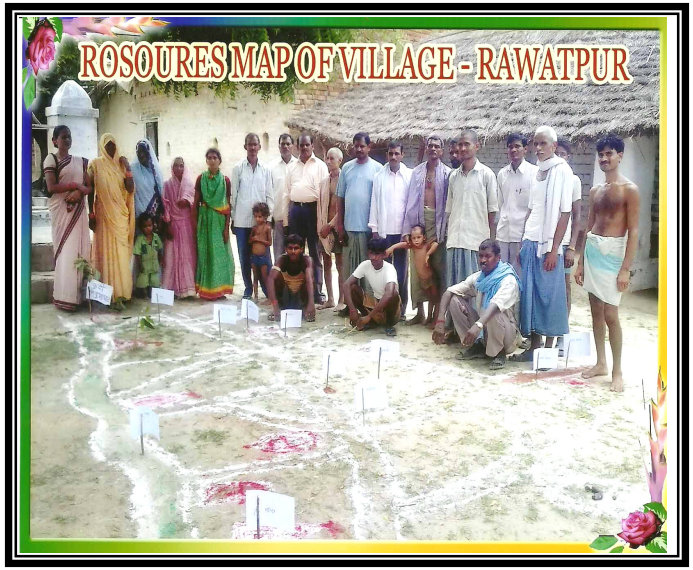

SOCIAL MAP
LAHNGI


RESOURSE MAP OF VILLAGE - LAHNGI

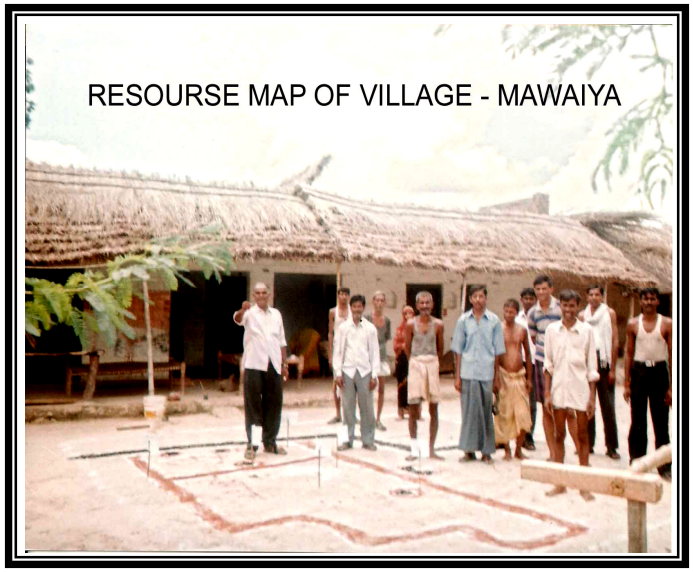

ROSOURES MAP OF VILLAGE - IBRAHIMPUR

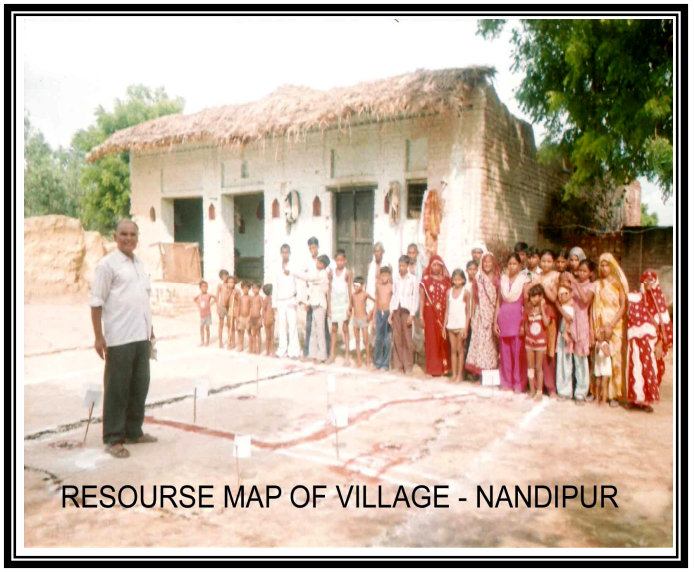

ROSOURES MAP OF VILLAGE - GAJIKHERA MAJARA KOTIYA

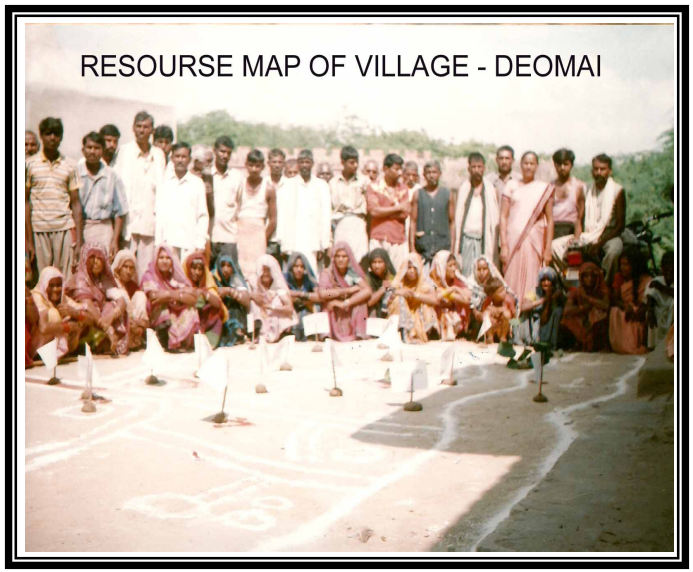

ROSOURES MAP OF VILLAGE - SULTANPUR


ROSOURES MAP OF VILLAGE - RAWATPUR


RESOURSE MAP OF VILLAGE - GUNEER

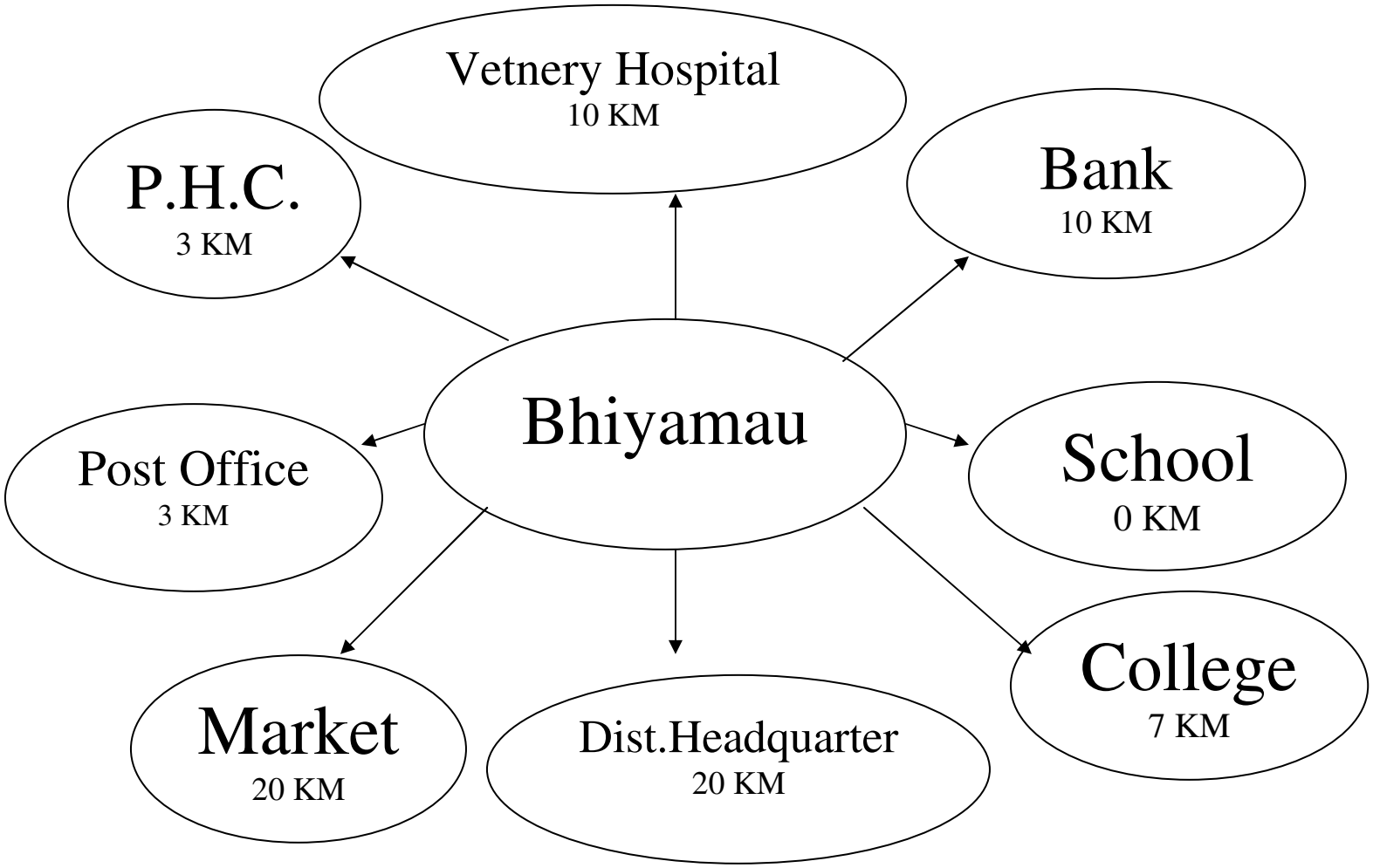

RESOURSE MAP OF VILLAGE - MAWAIYA


RESOURSE MAP OF VILLAGE - NANDIPUR

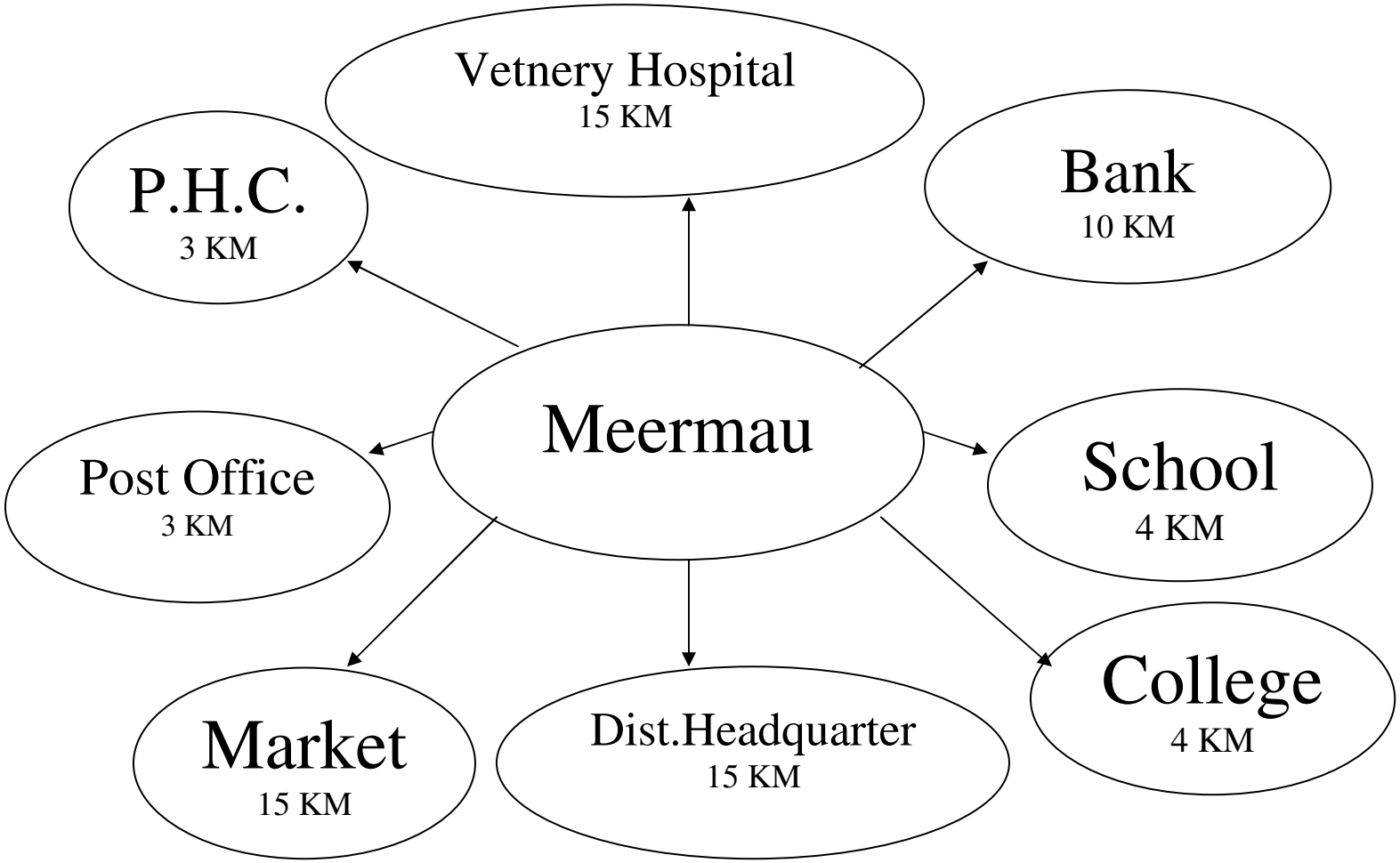


DISCUSS BETWEEN S.H.G AND WOMEN MEMBER OF W.D.T.,

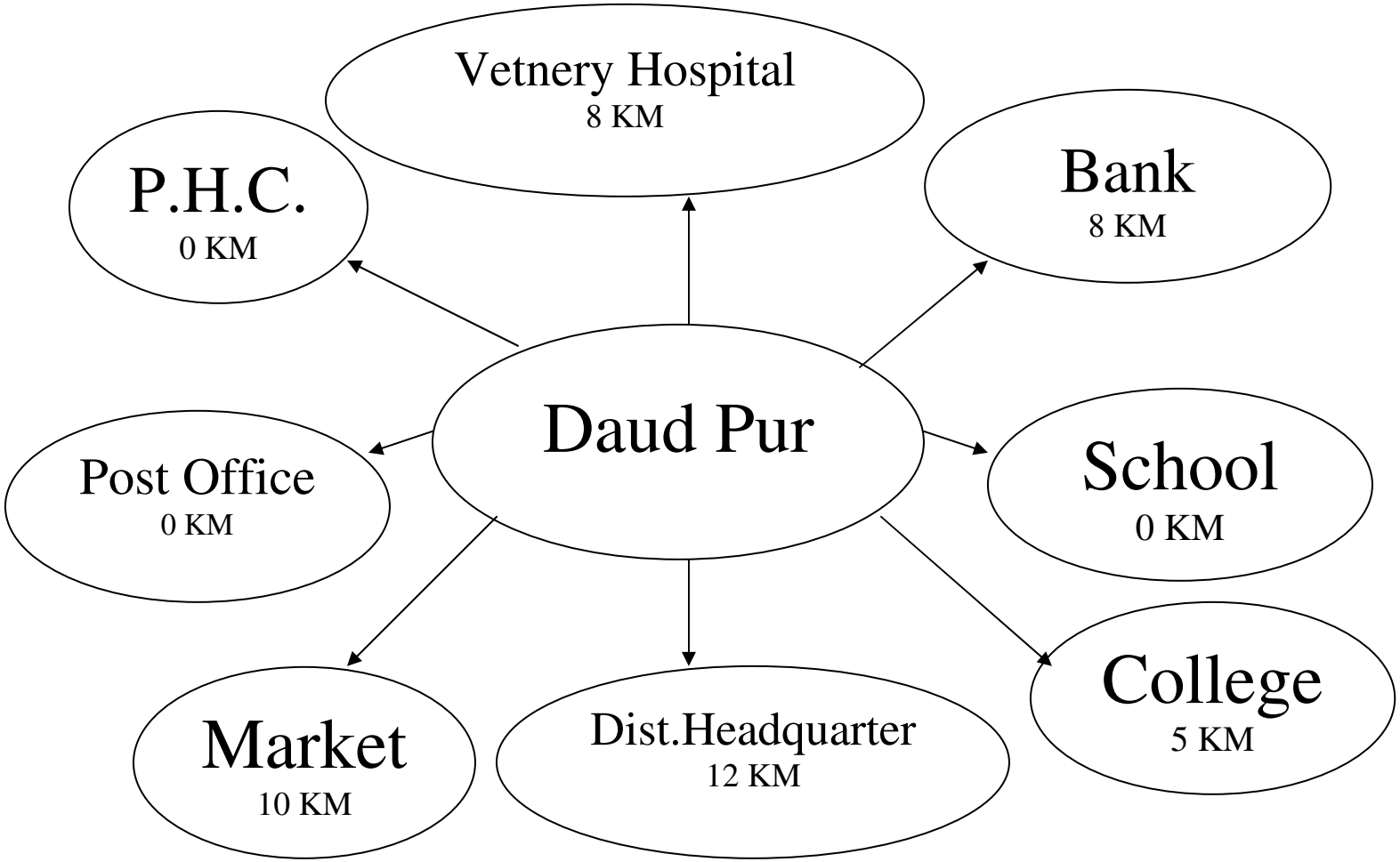
VILLAGE-WISE INFRASTRUCTURE



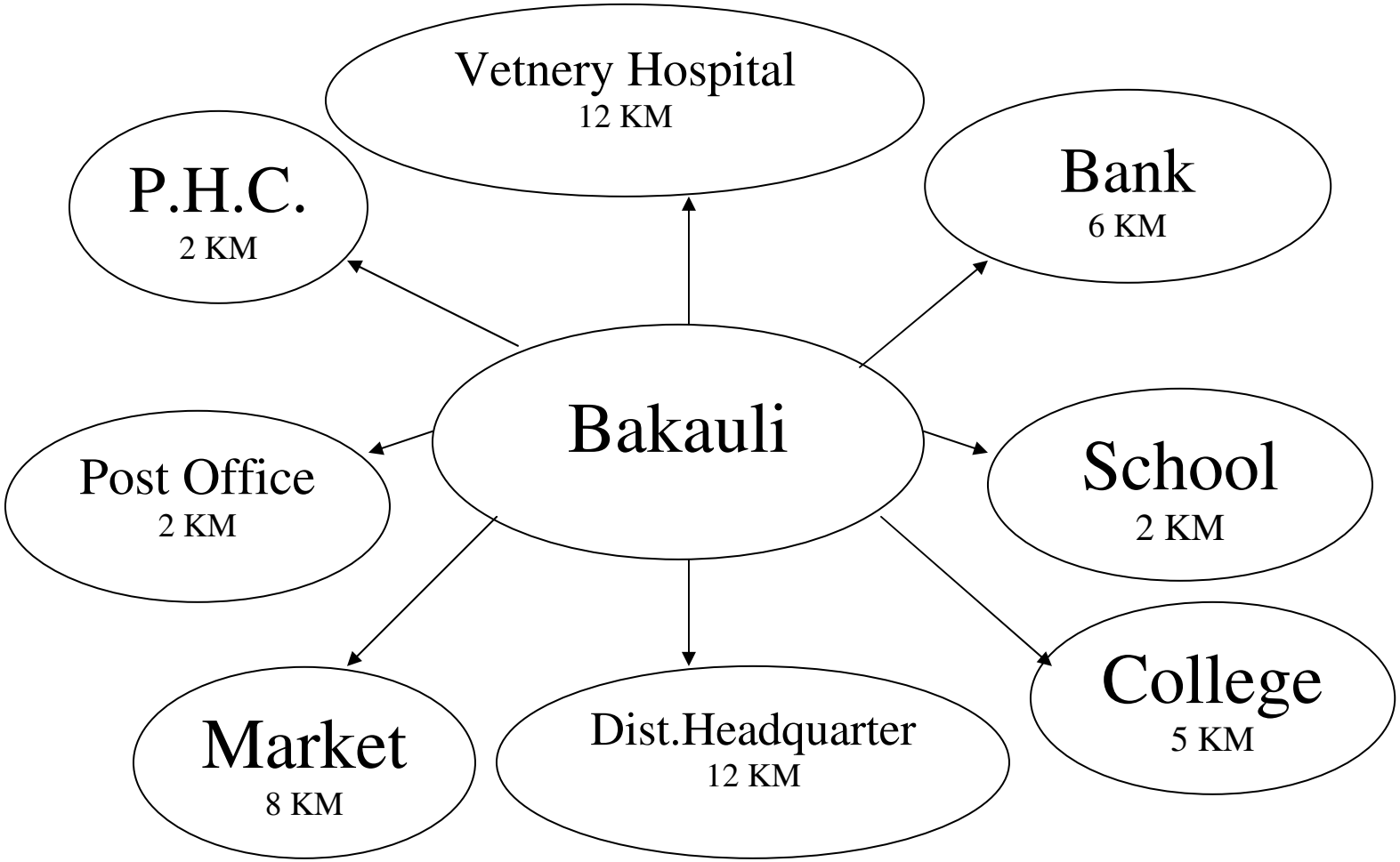
VILLAGE-WISE INFRASTRUCTURE



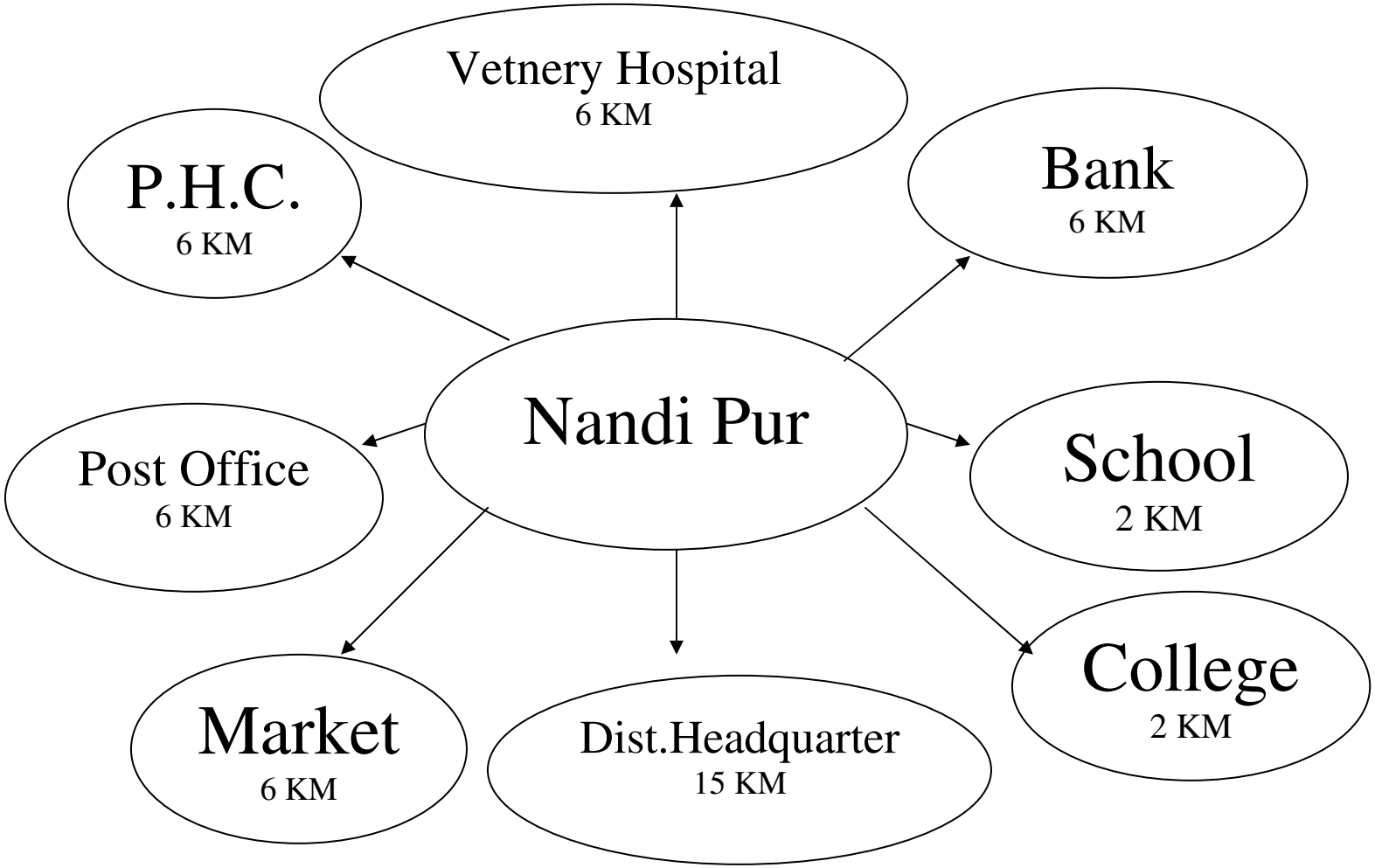
VILLAGE-WISE INFRASTRUCTURE



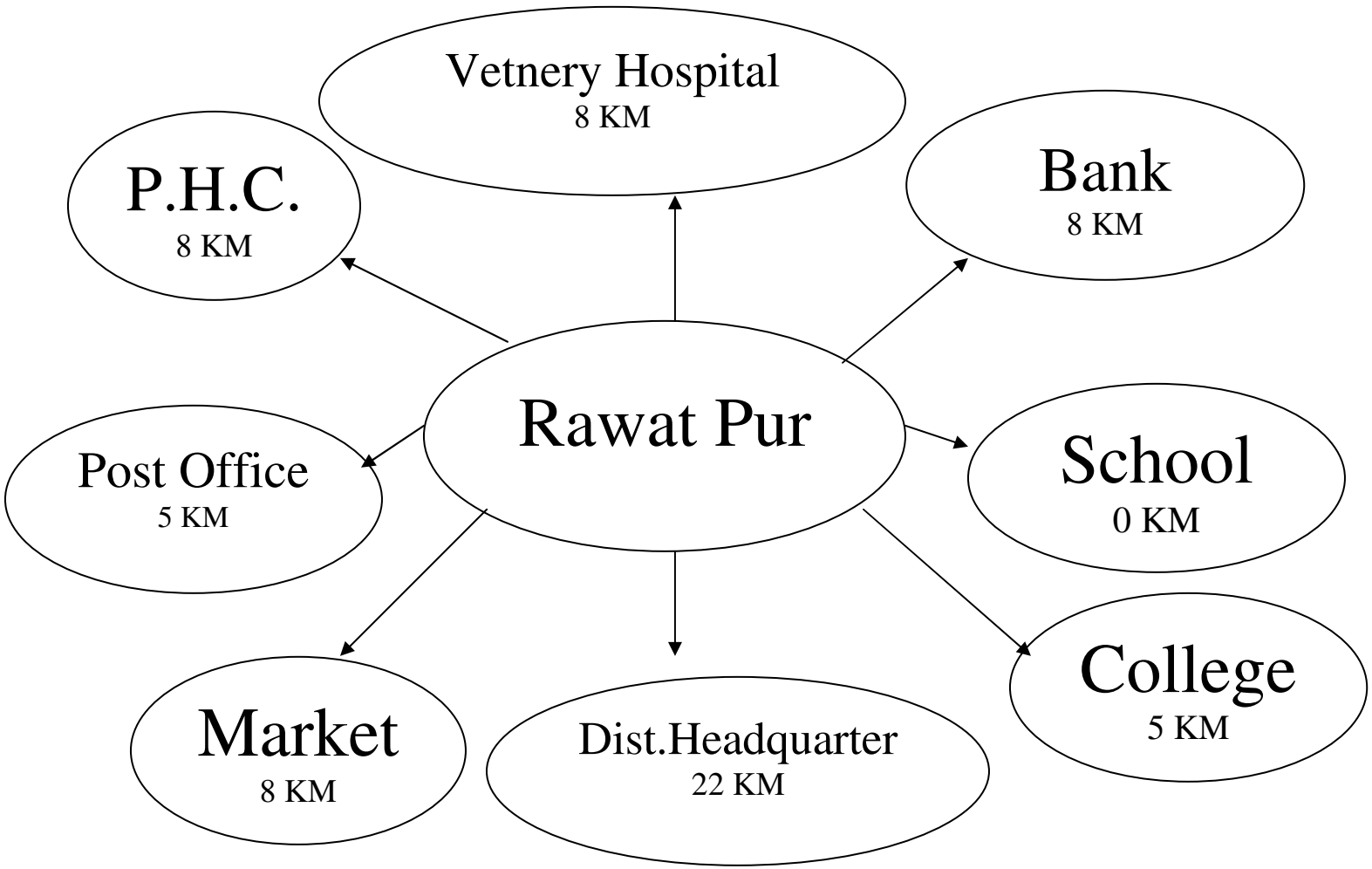
VILLAGE-WISE INFRASTRUCTURE



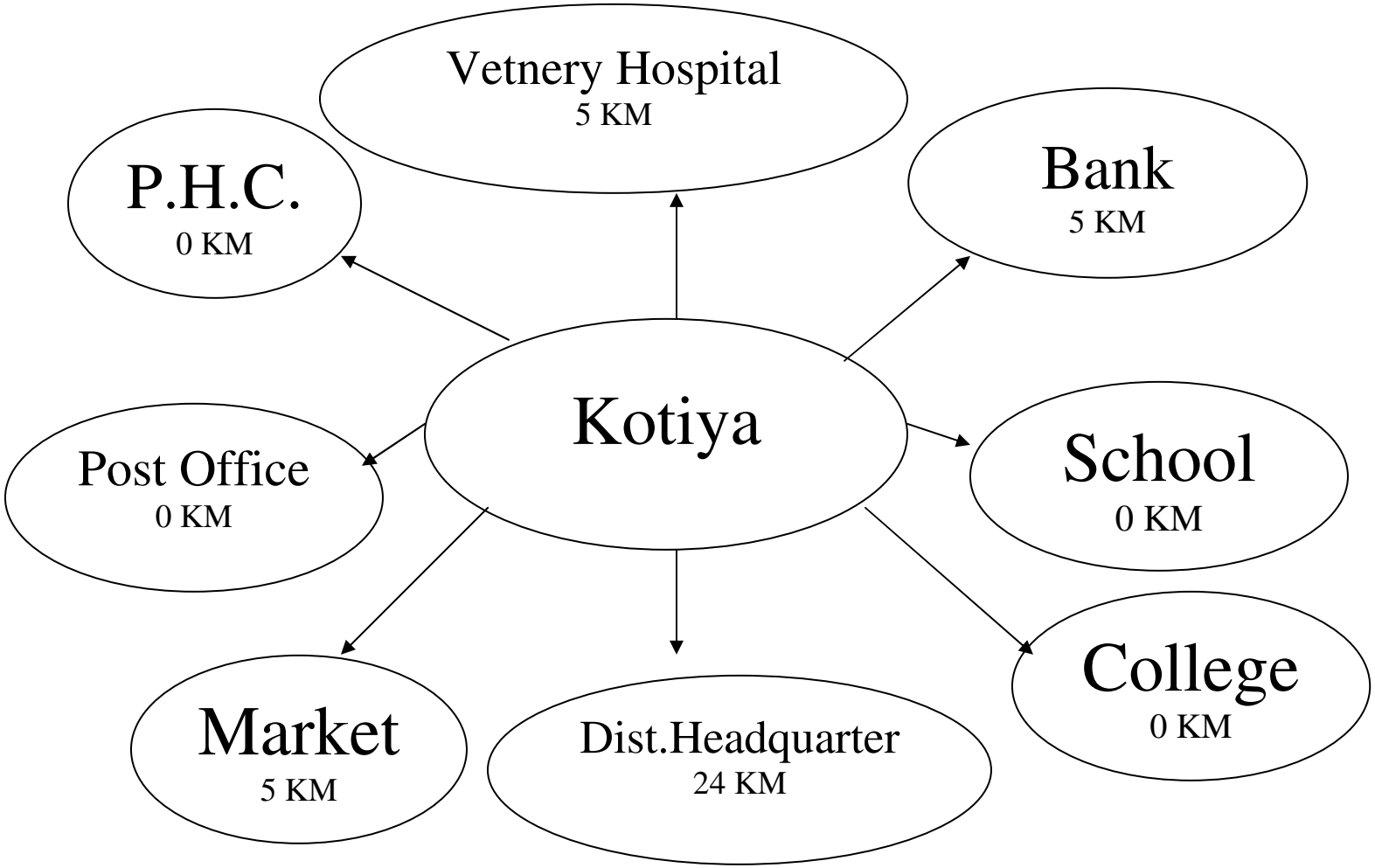
VILLAGE-WISE INFRASTRUCTURE



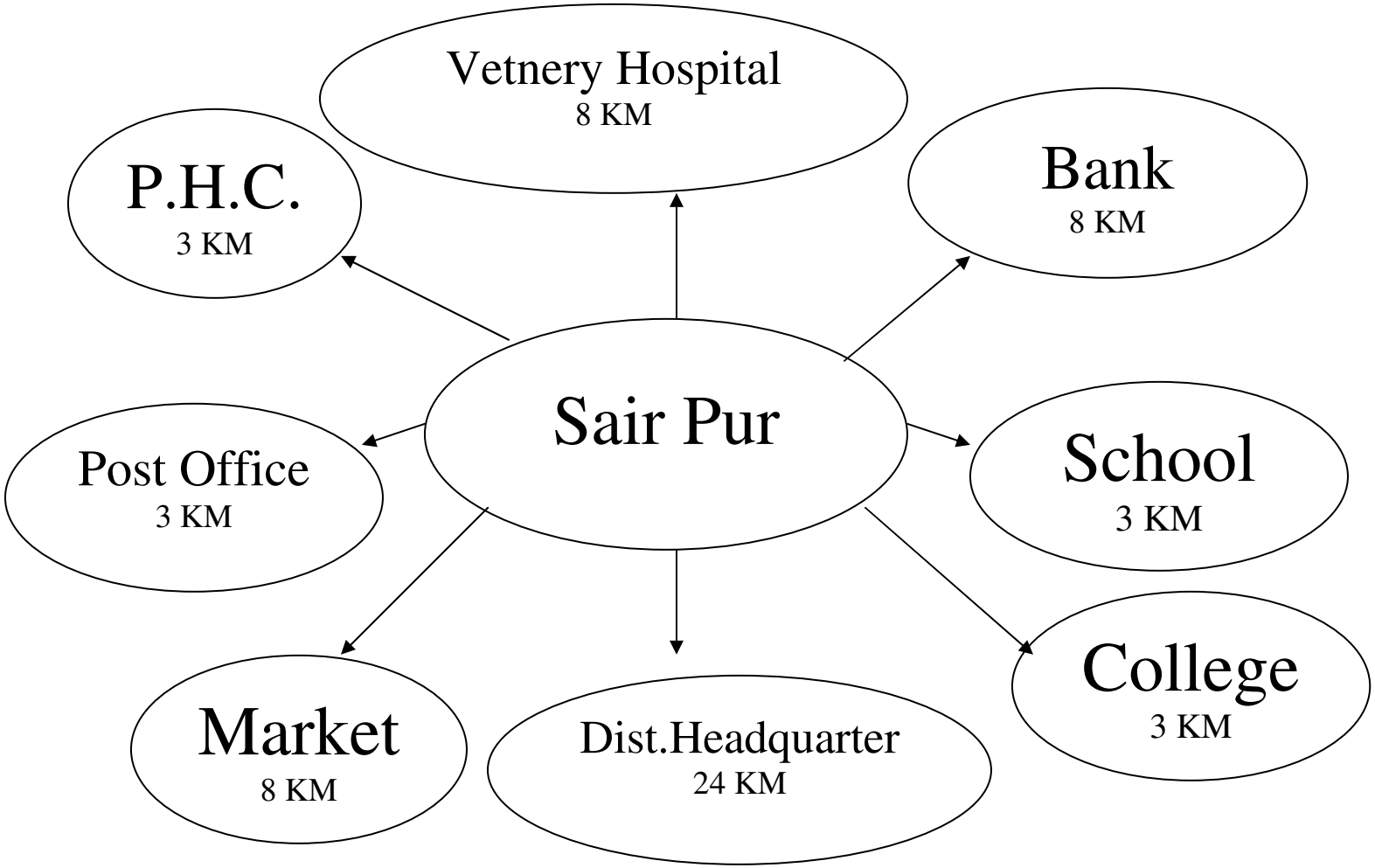
VILLAGE-WISE INFRASTRUCTURE



VILLAGE-WISE INFRASTRUCTURE



VILLAGE-WISE INFRASTRUCTURE



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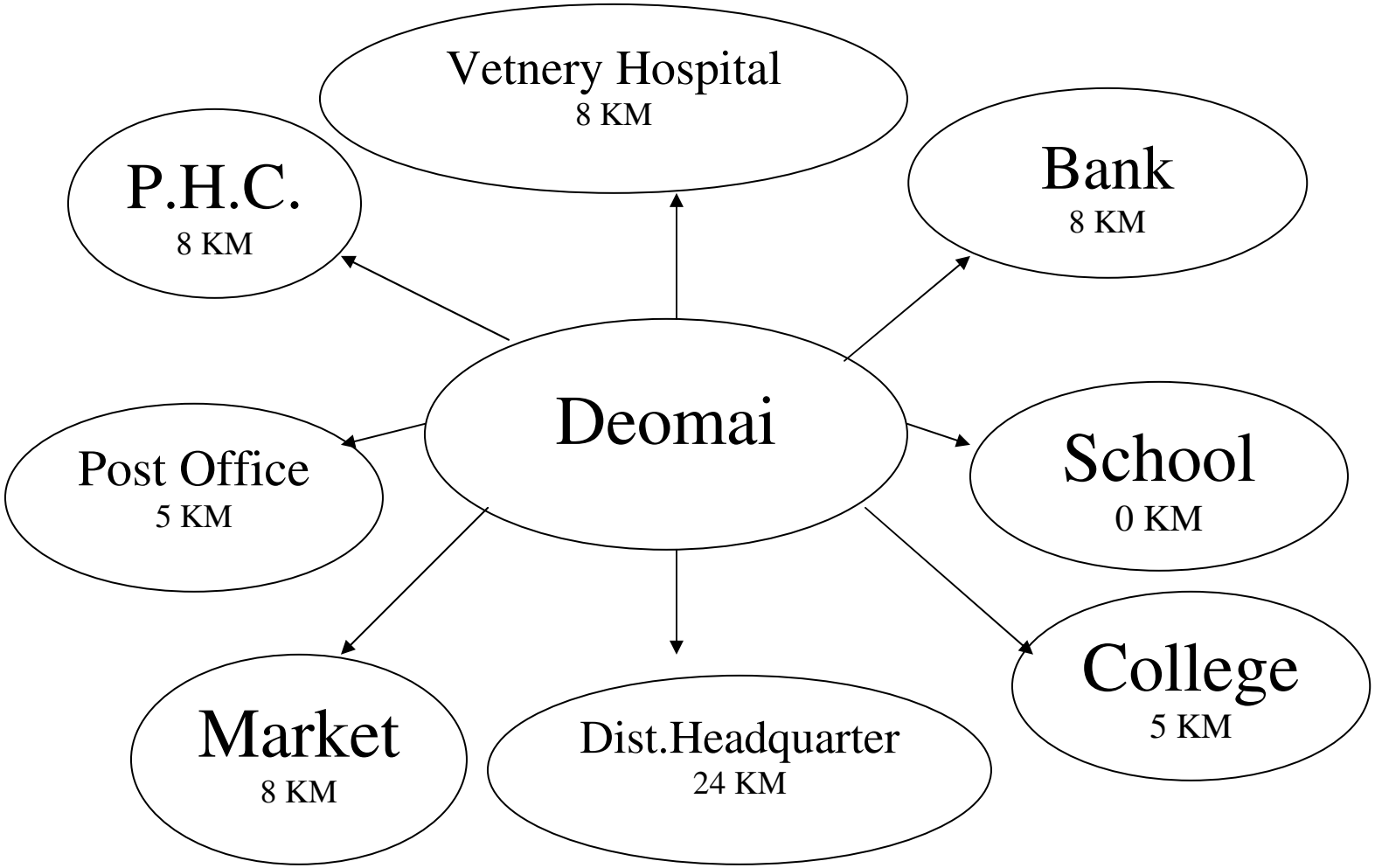

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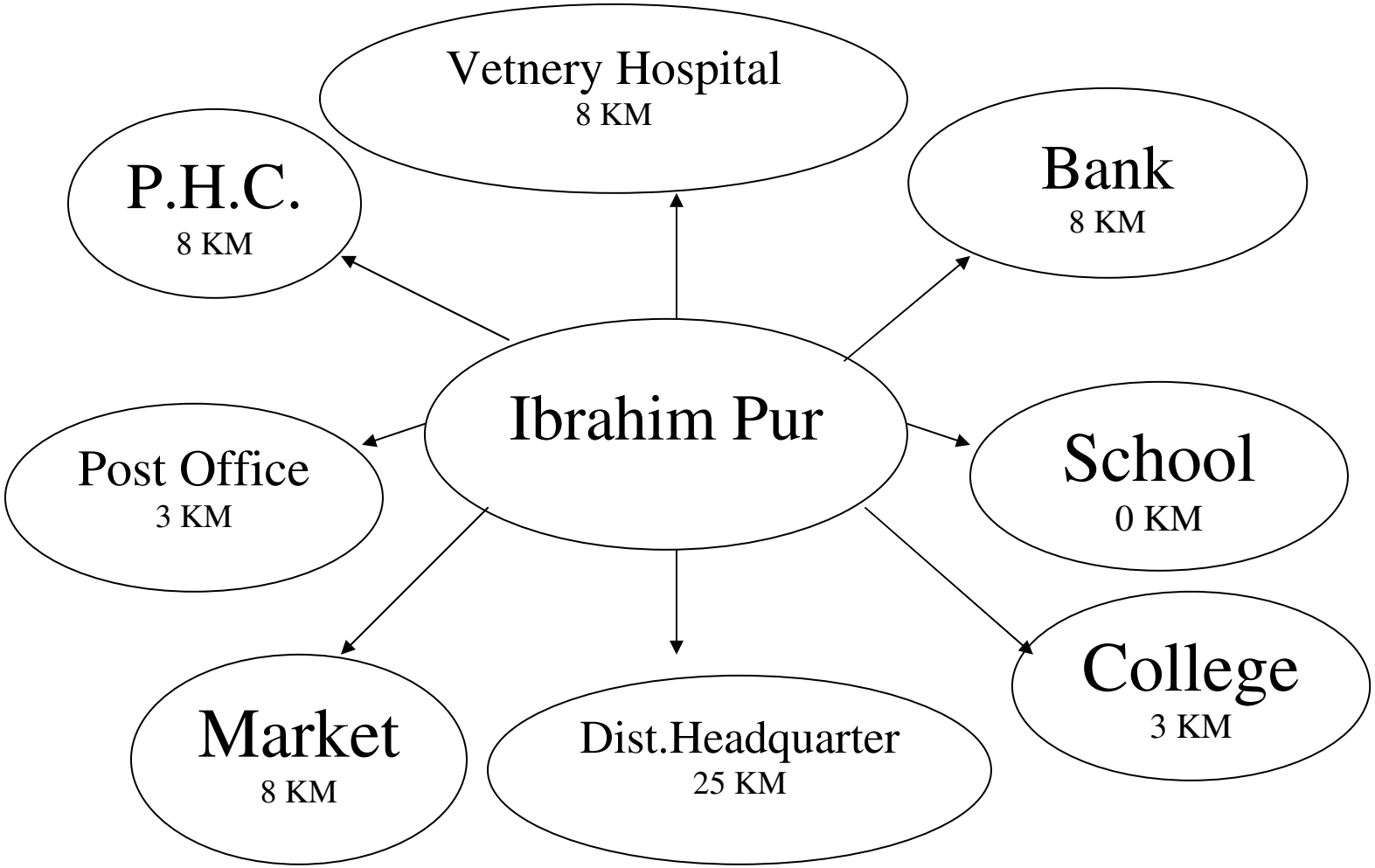
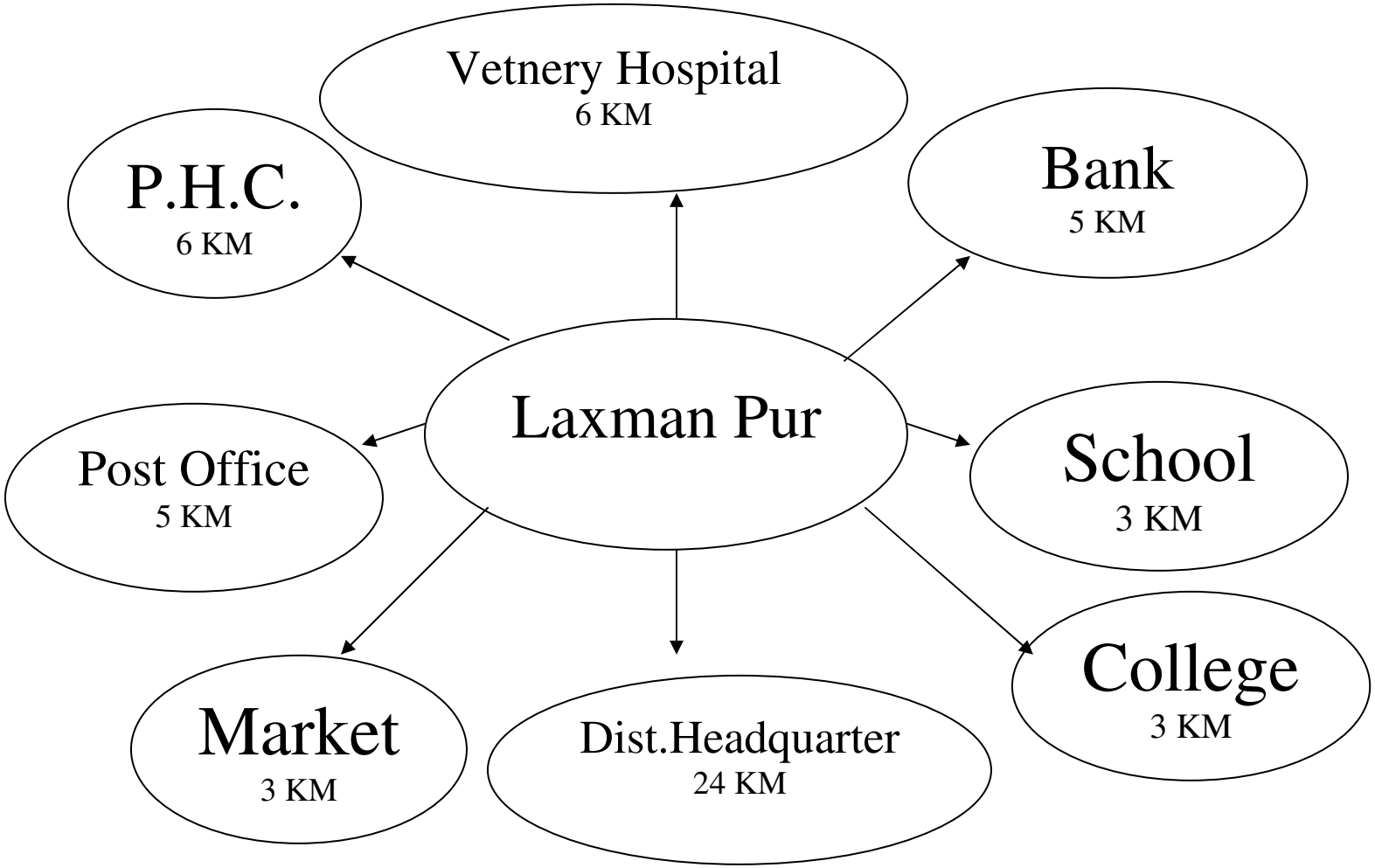


VILLAGE-WISE INFRASTRUCTURE



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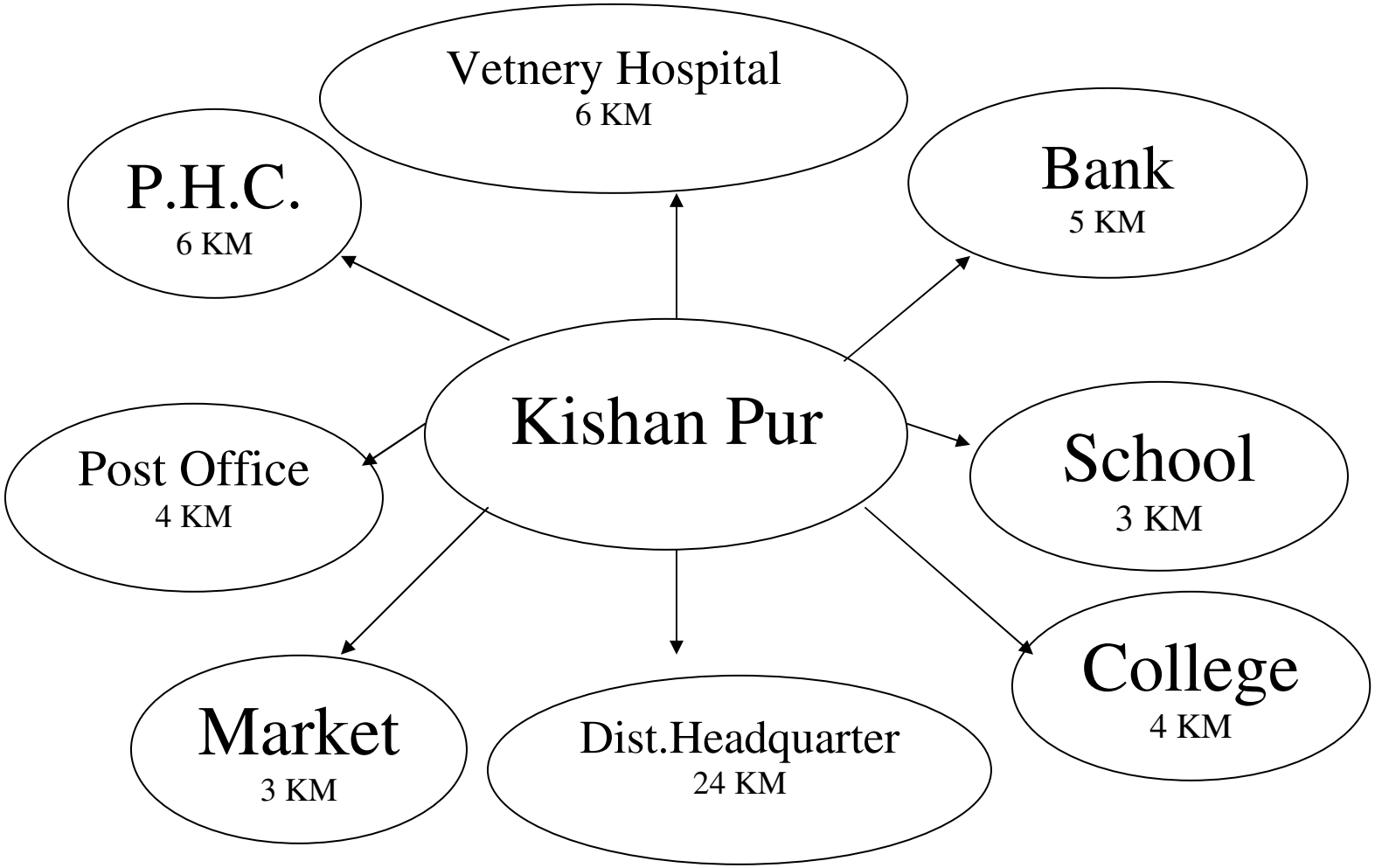

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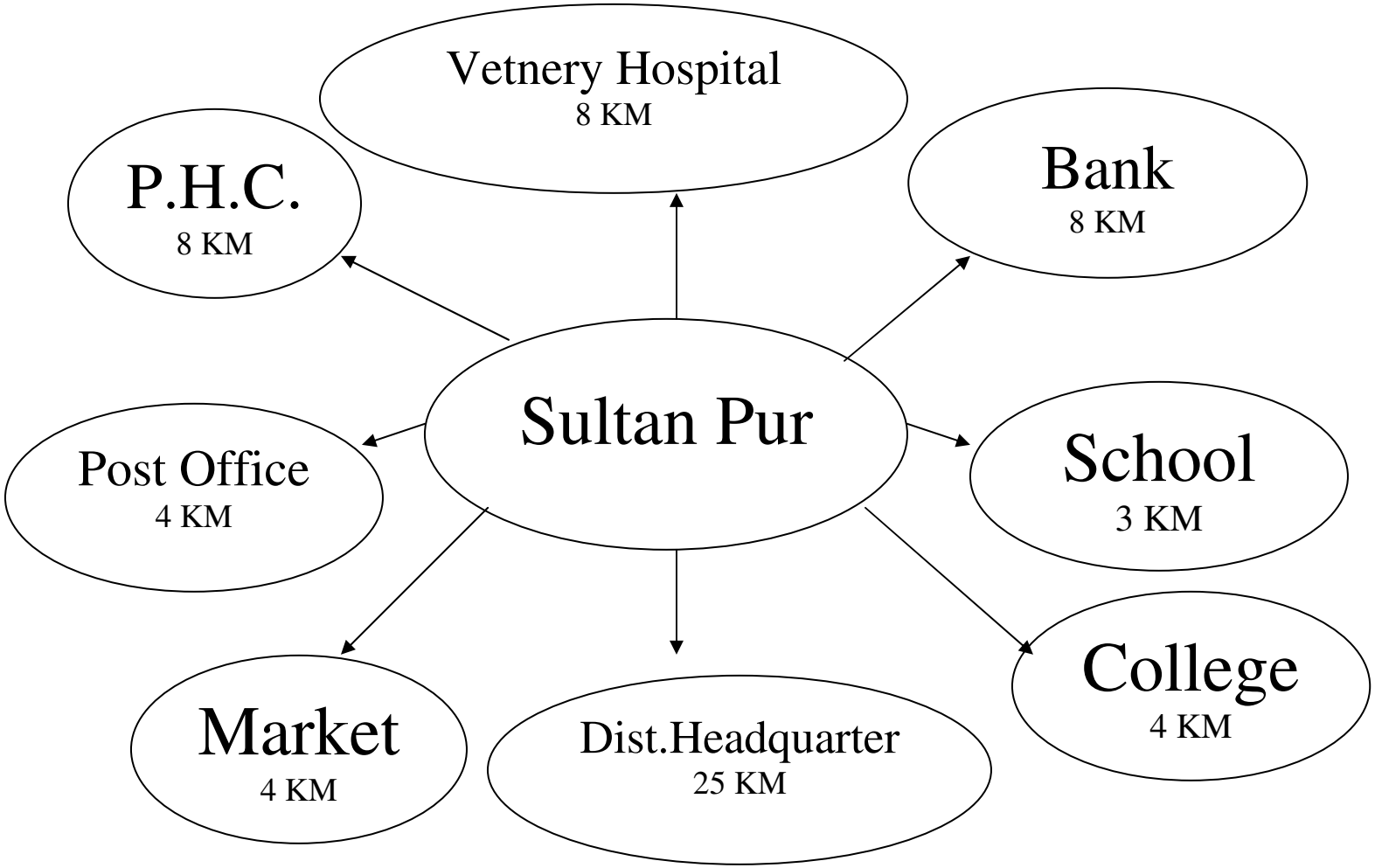
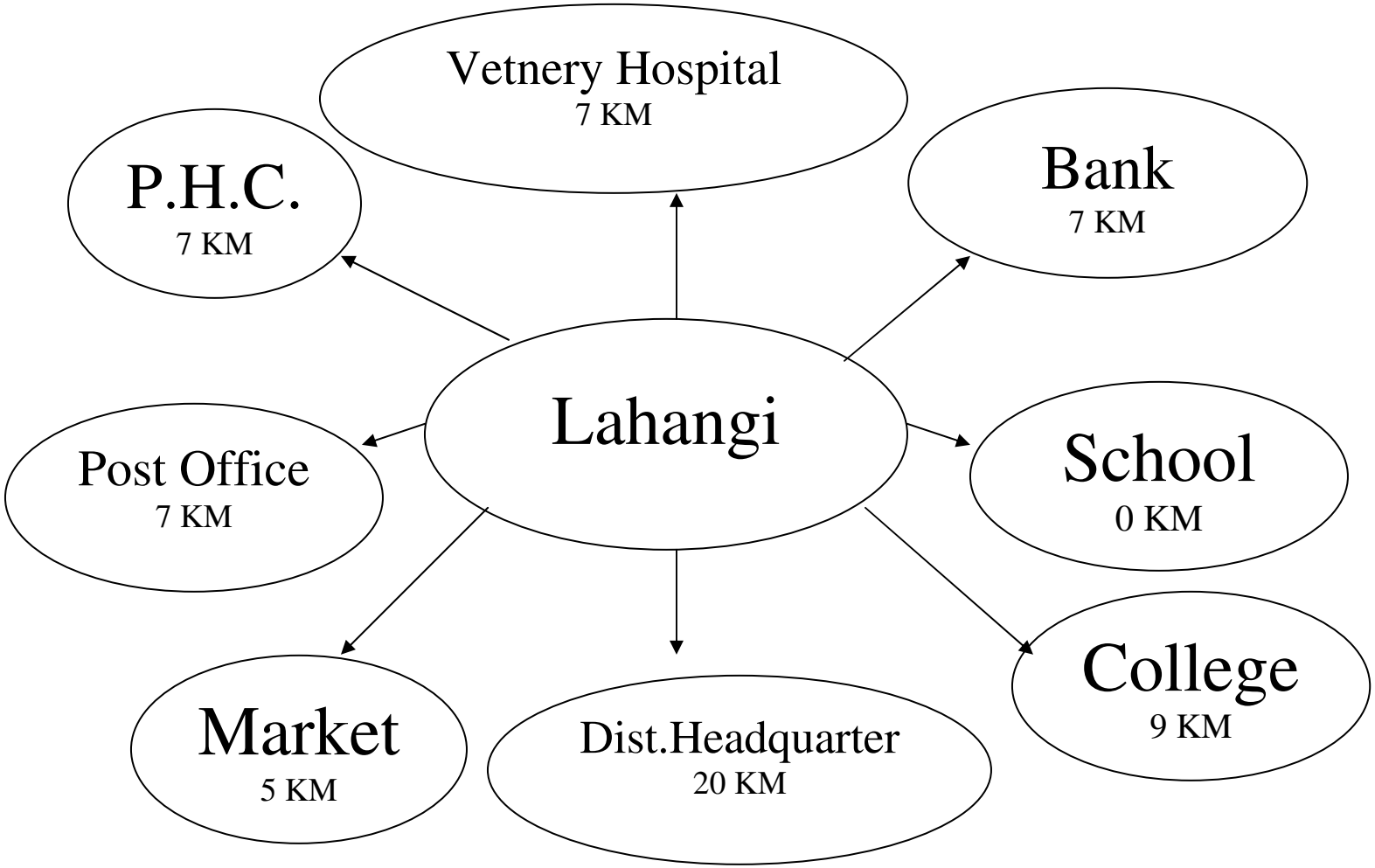
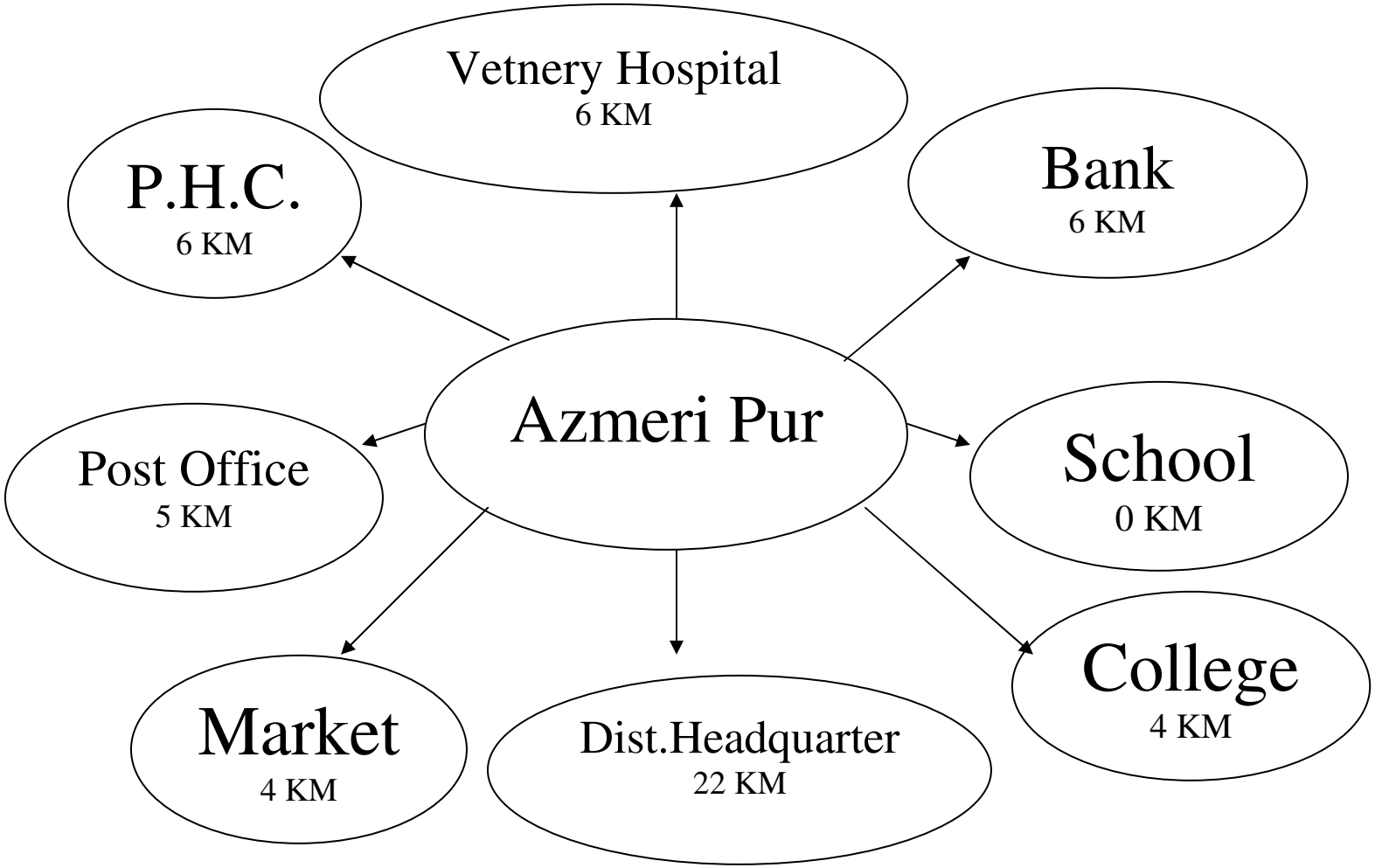


VILLAGE-WISE INFRASTRUCTURE



VILLAGE-WISE INFRASTRUCTURE



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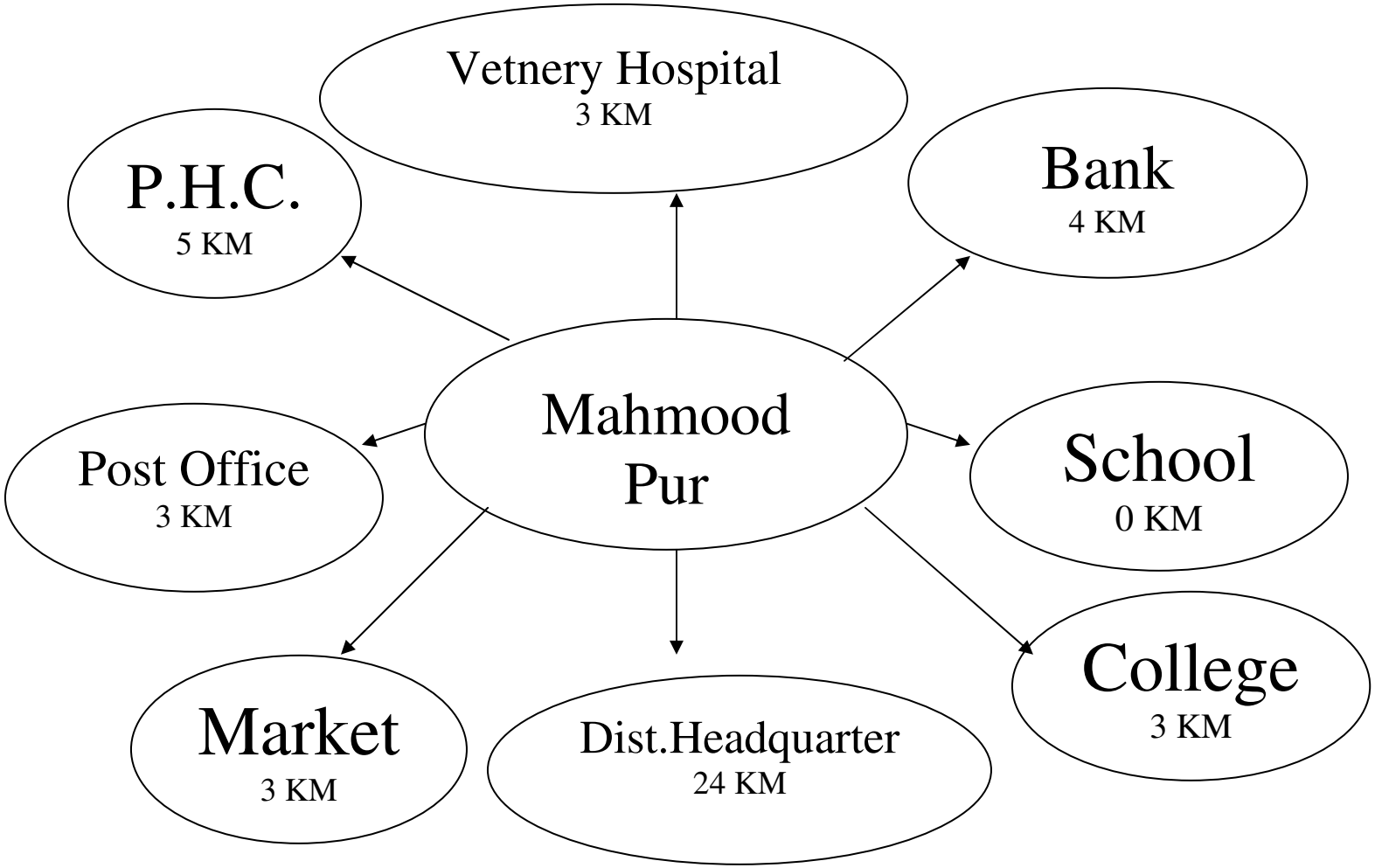
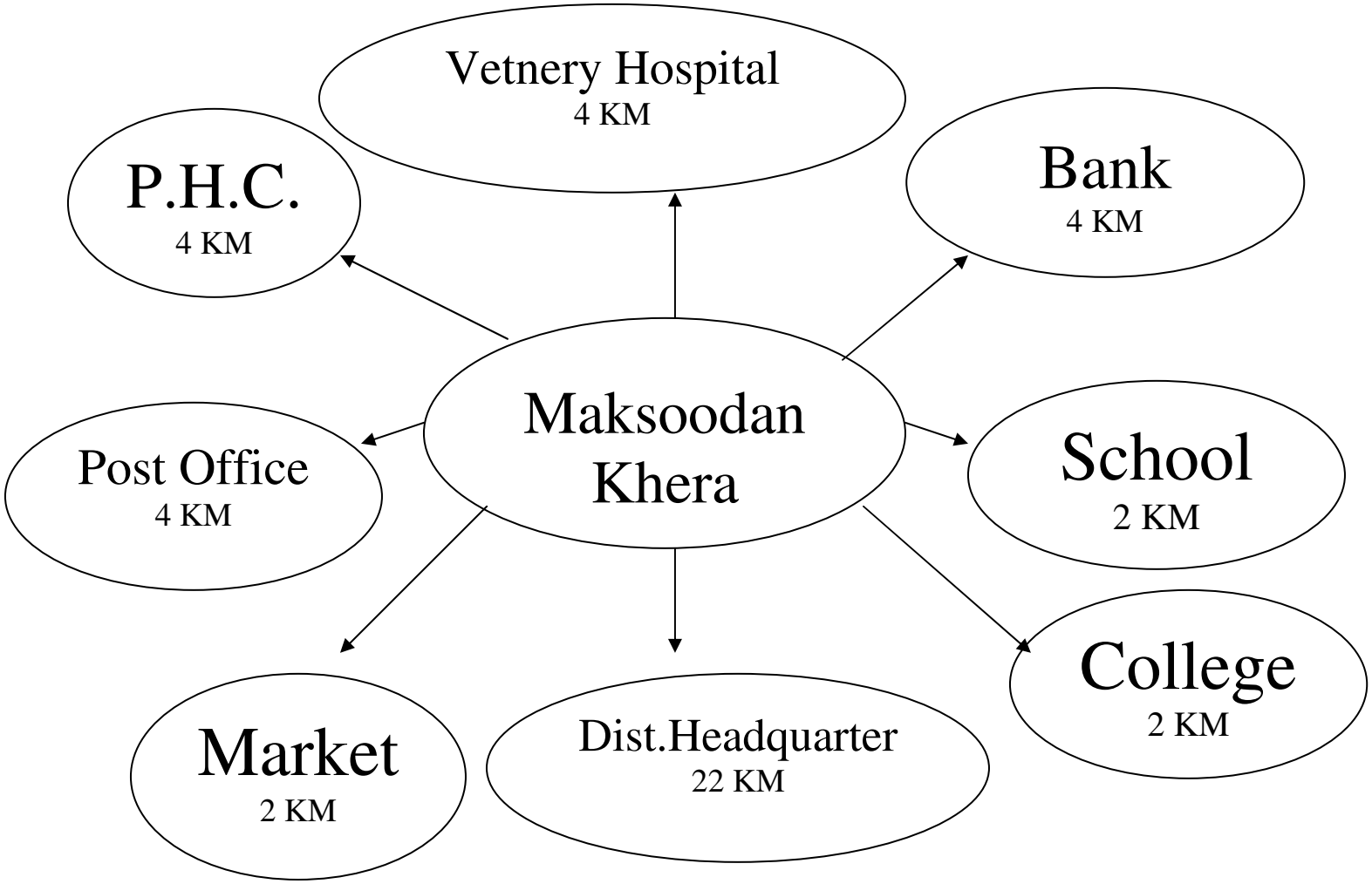


VILLAGE-WISE INFRASTRUCTURE



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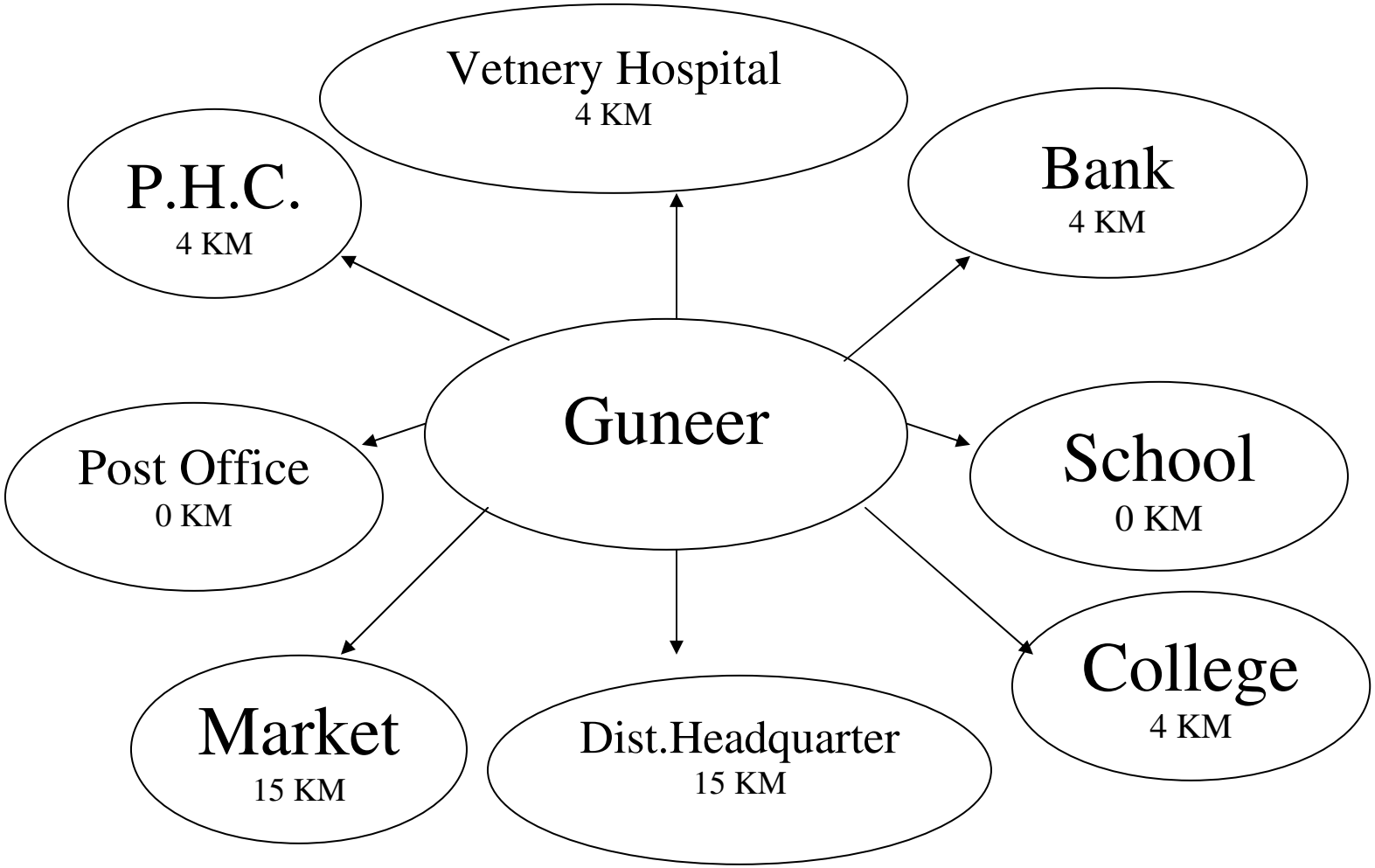

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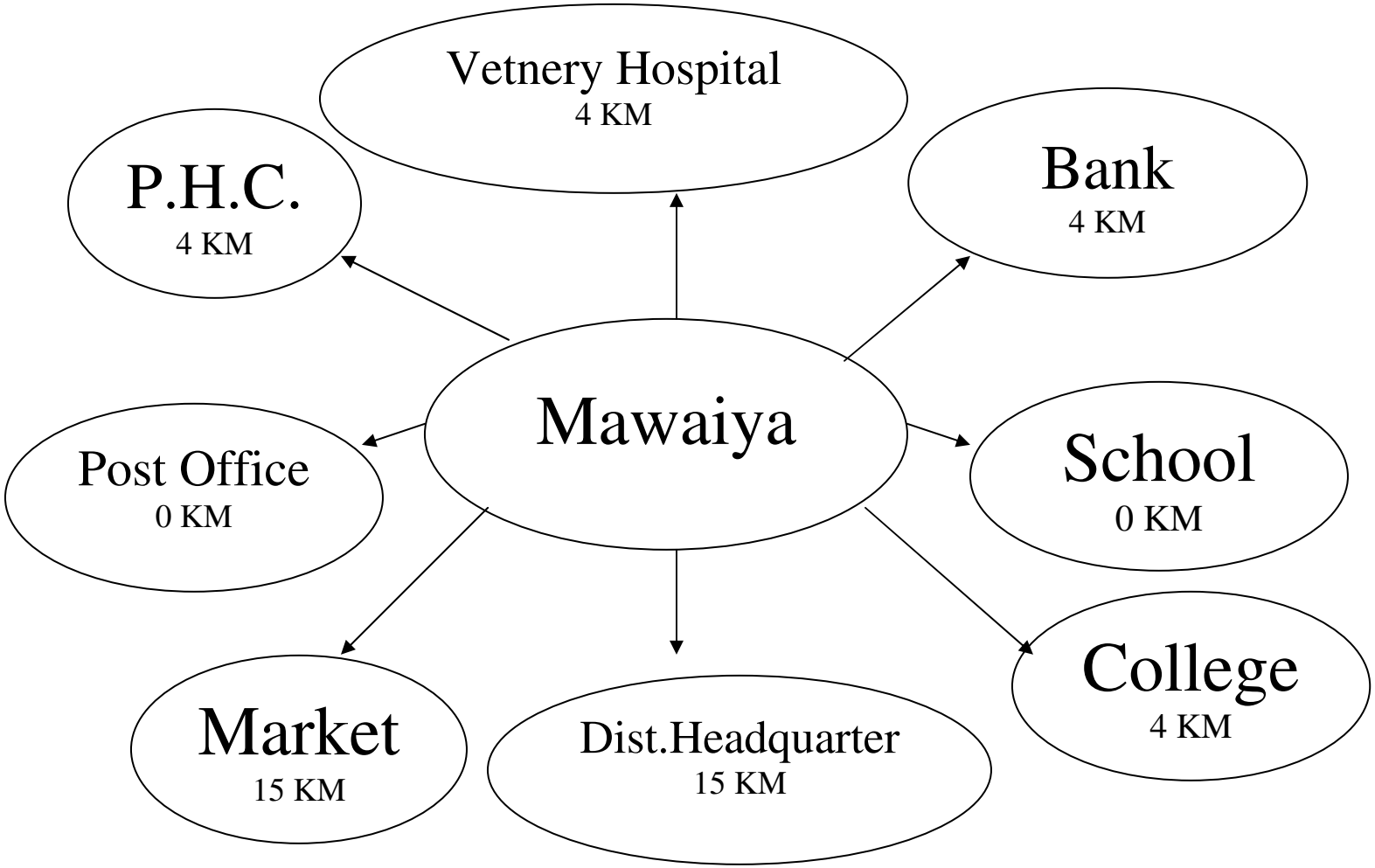

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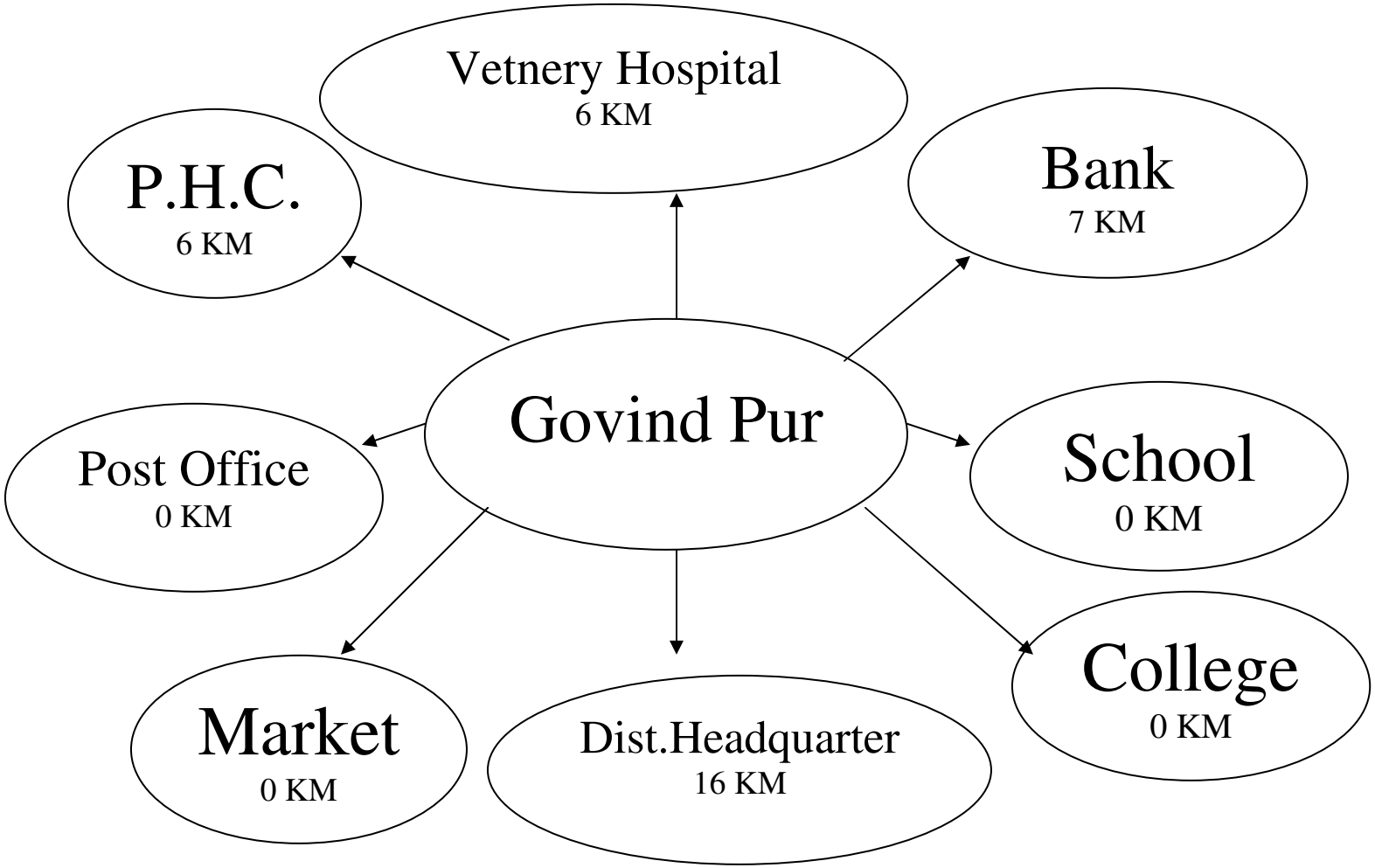

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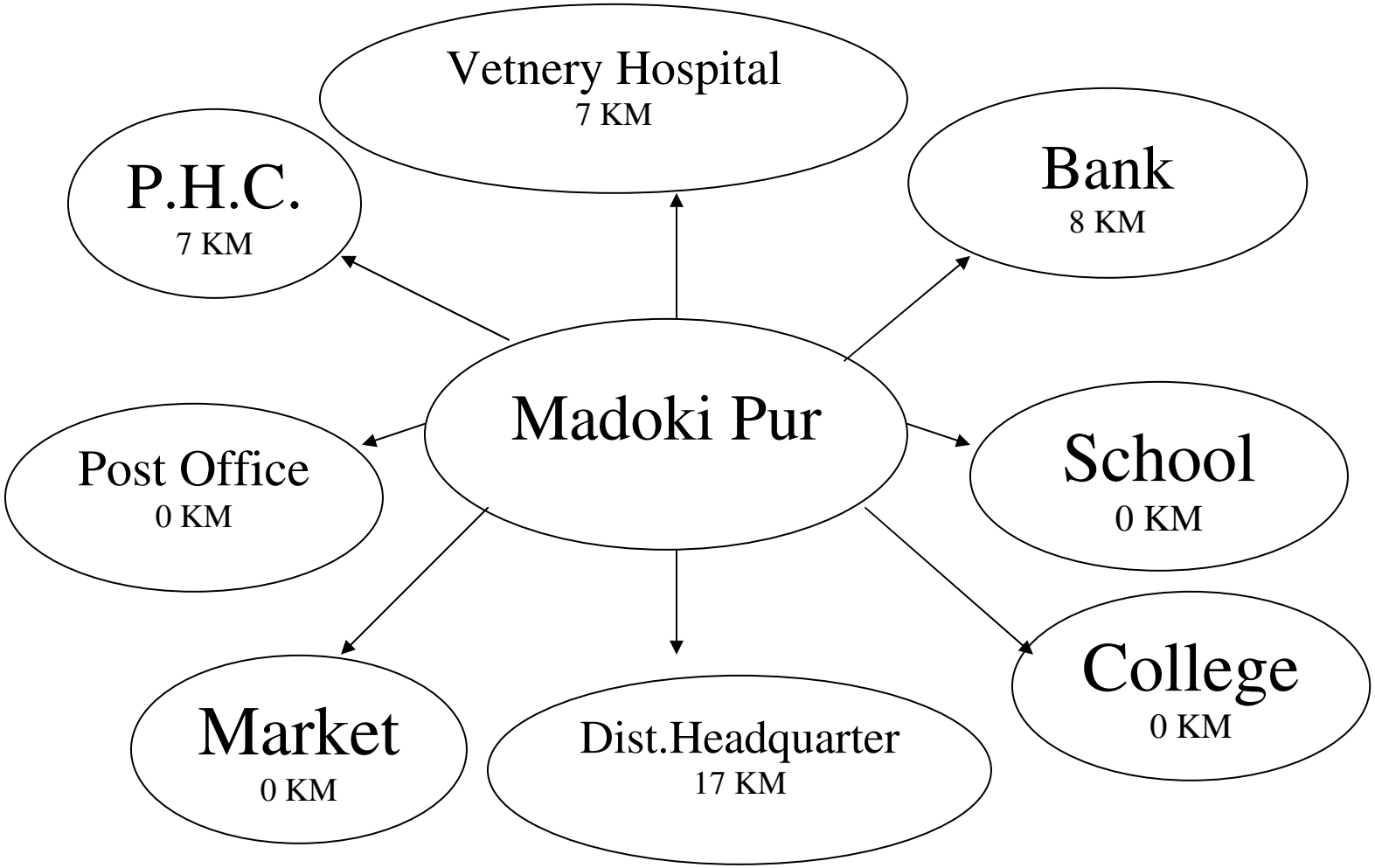


MAP OF TOPO SHEET WATERSHED-WISE,

MAP OF VILLAGE-WISE WATERSHED

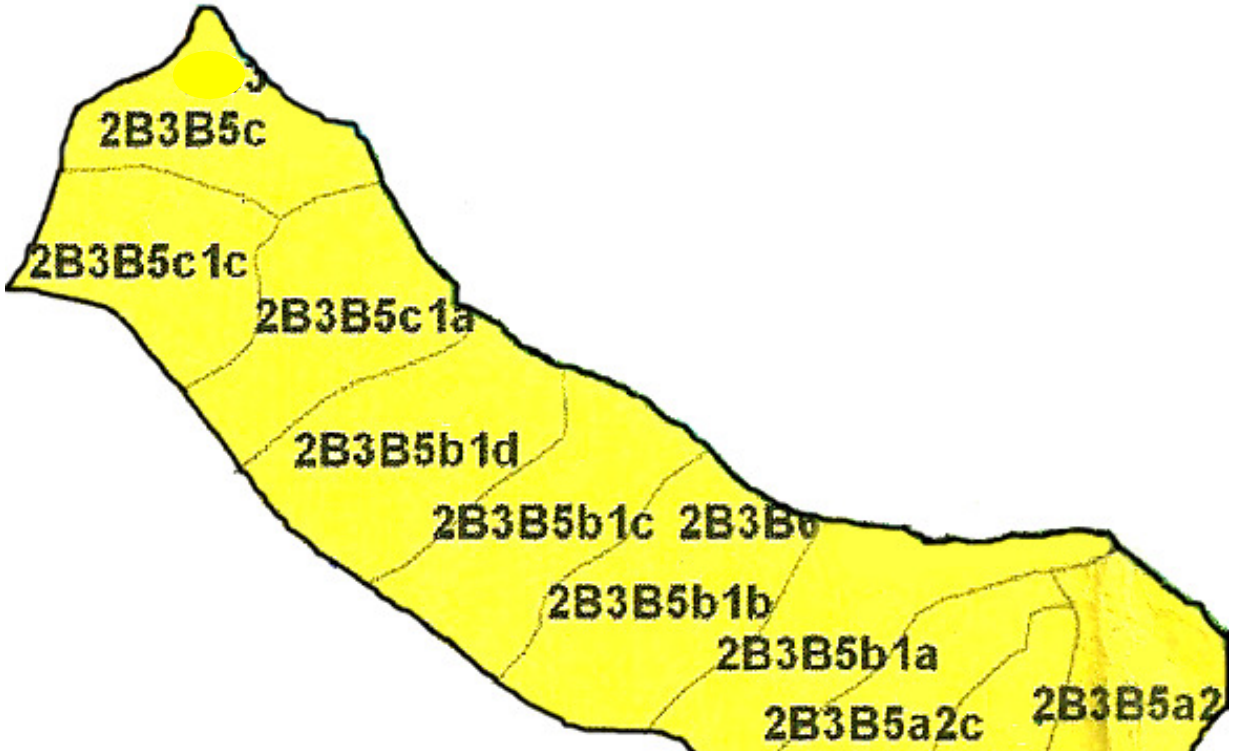
AND

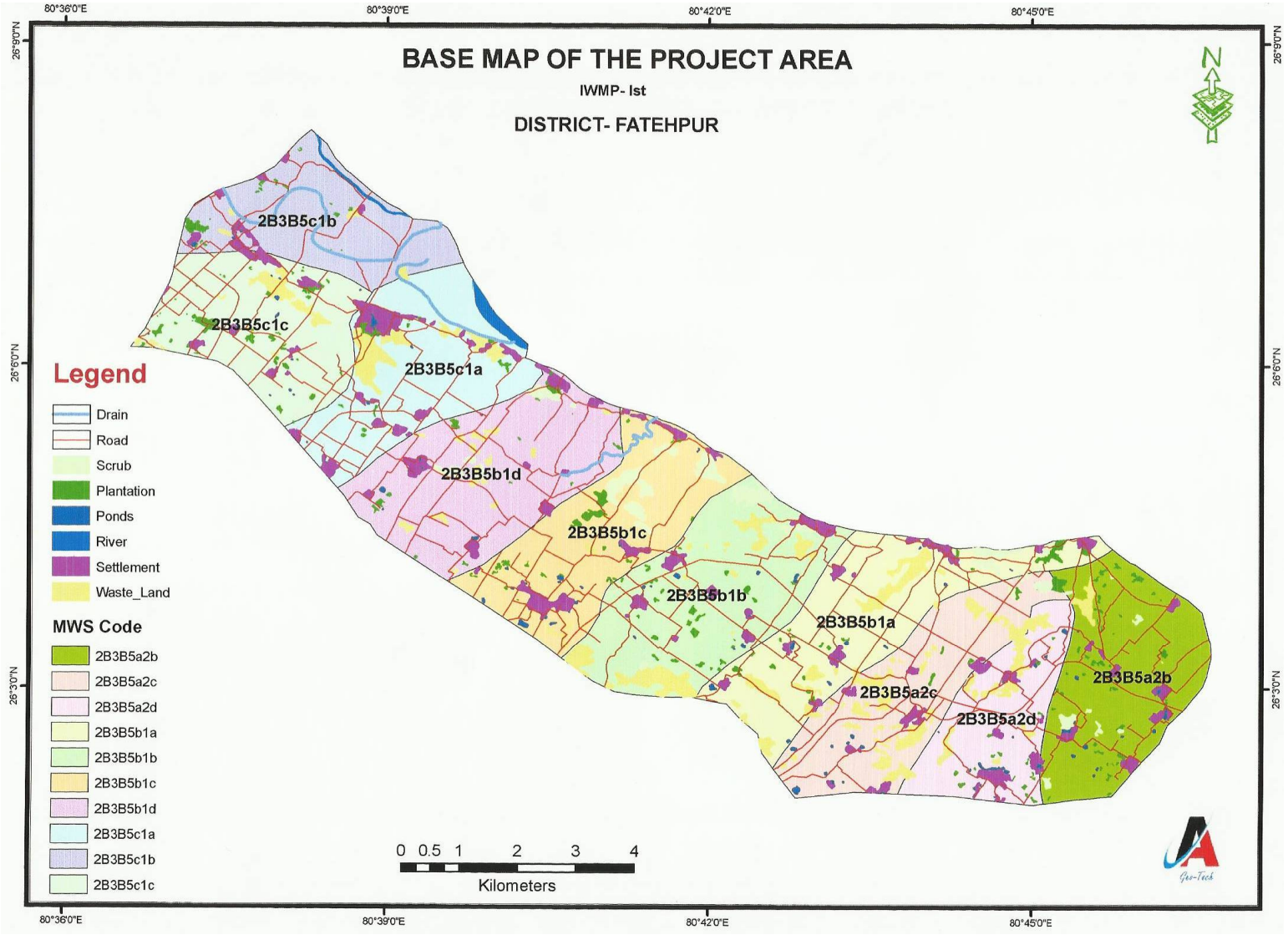
DRAINAGE MAP WATERSHED-WISE

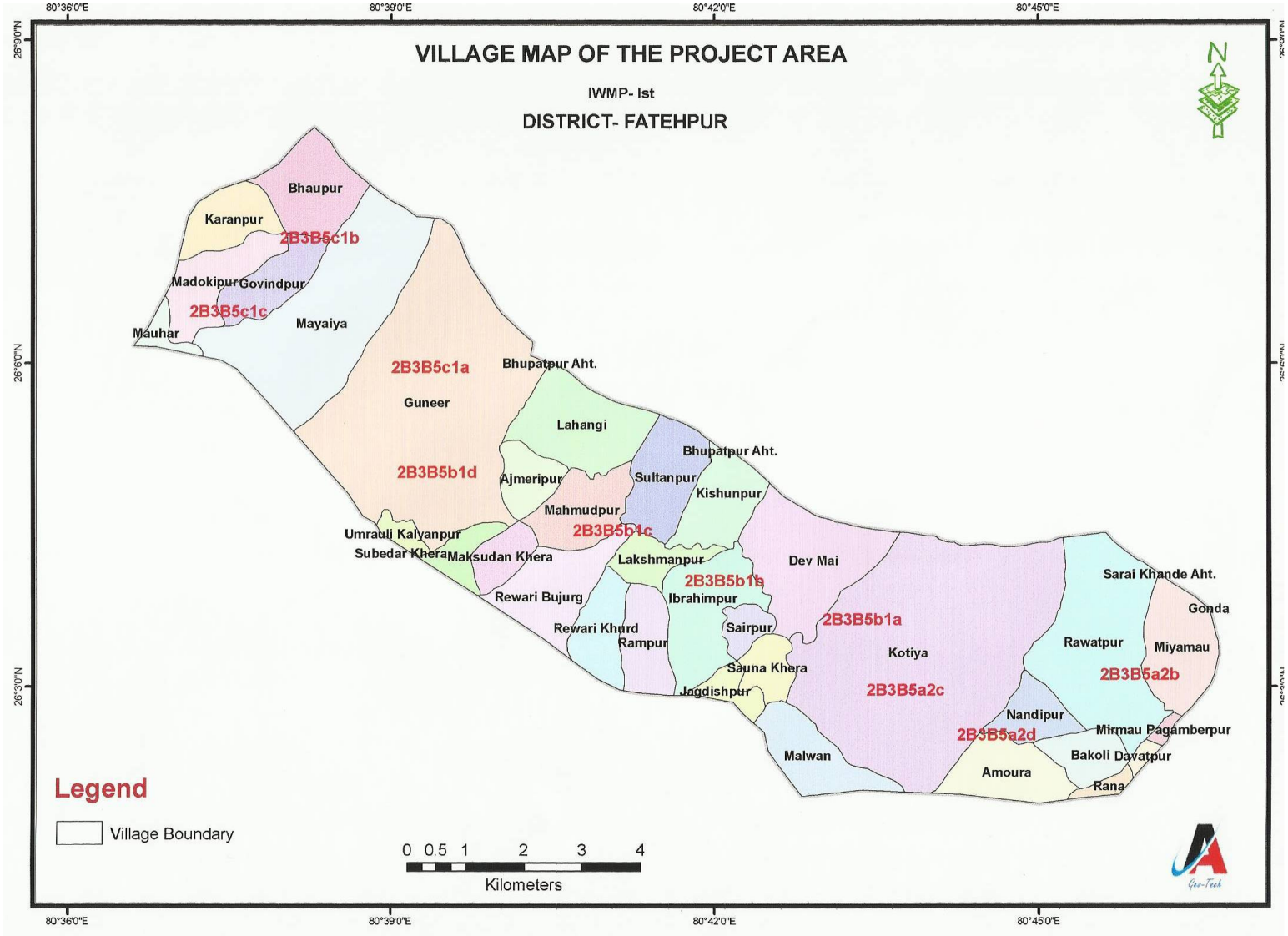
OF

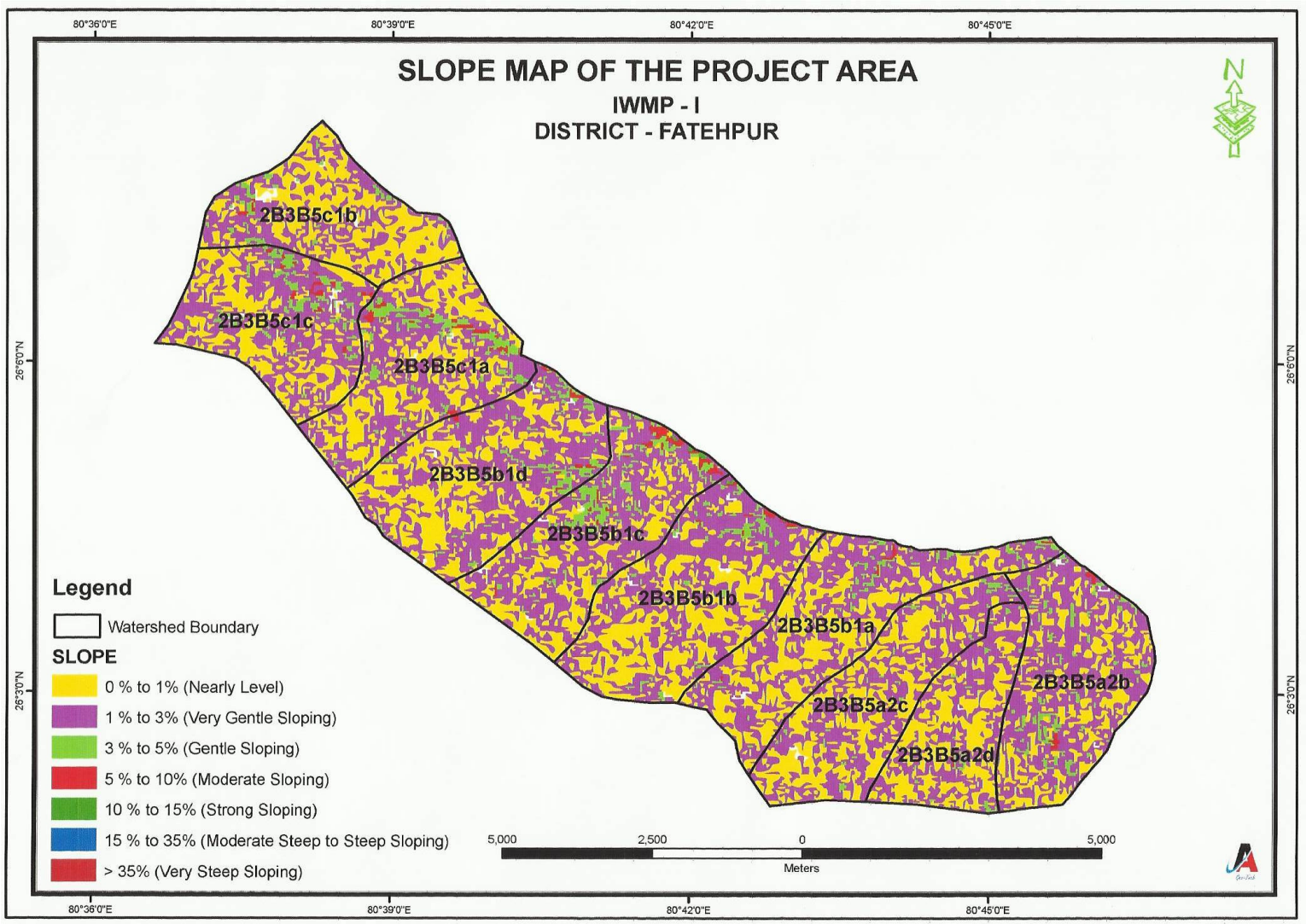
I.W.M.P. - Ist

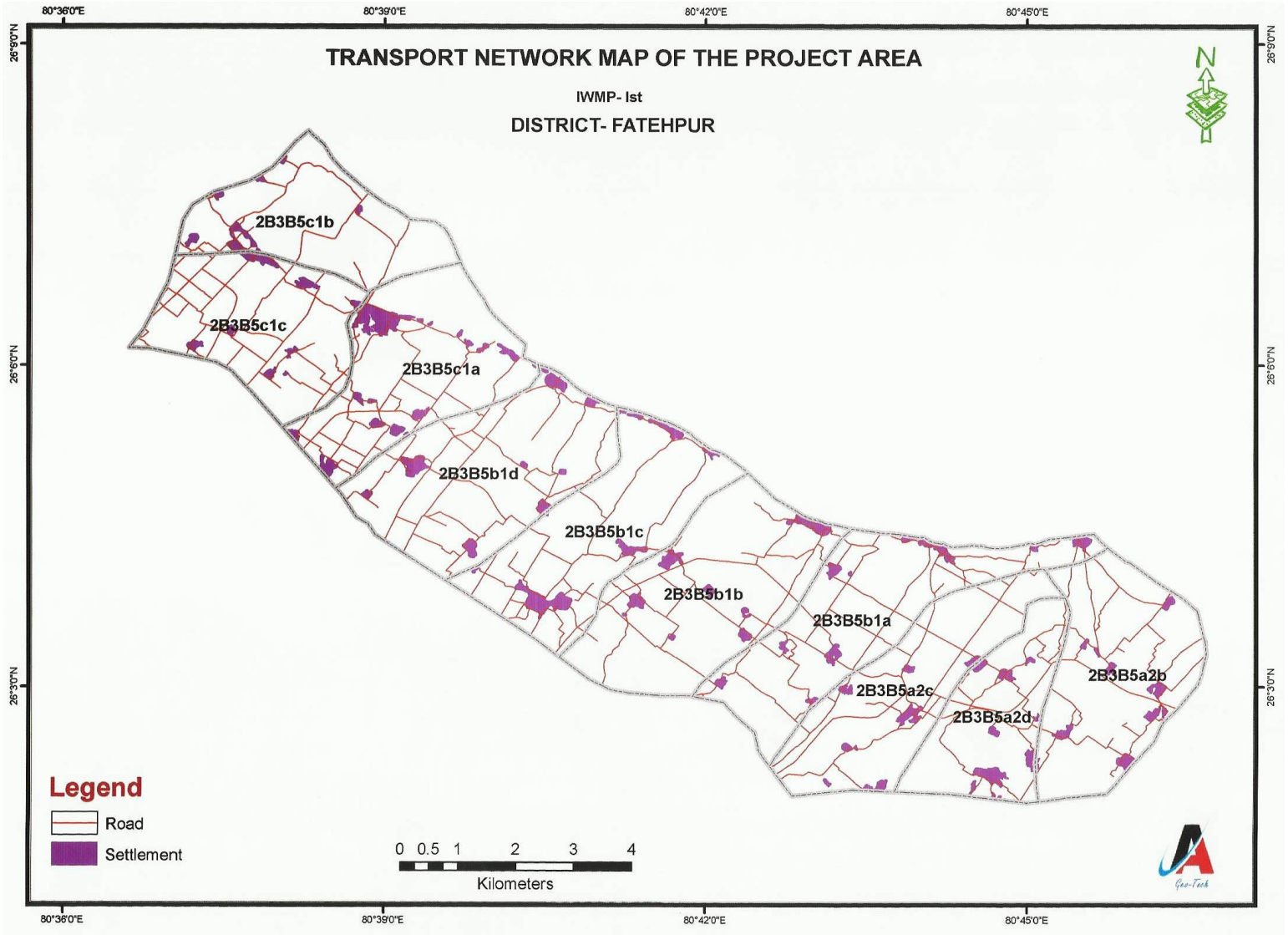
VILLAGE-WISE WATERSHED MAP
OF
I.W.M.P.- Ist



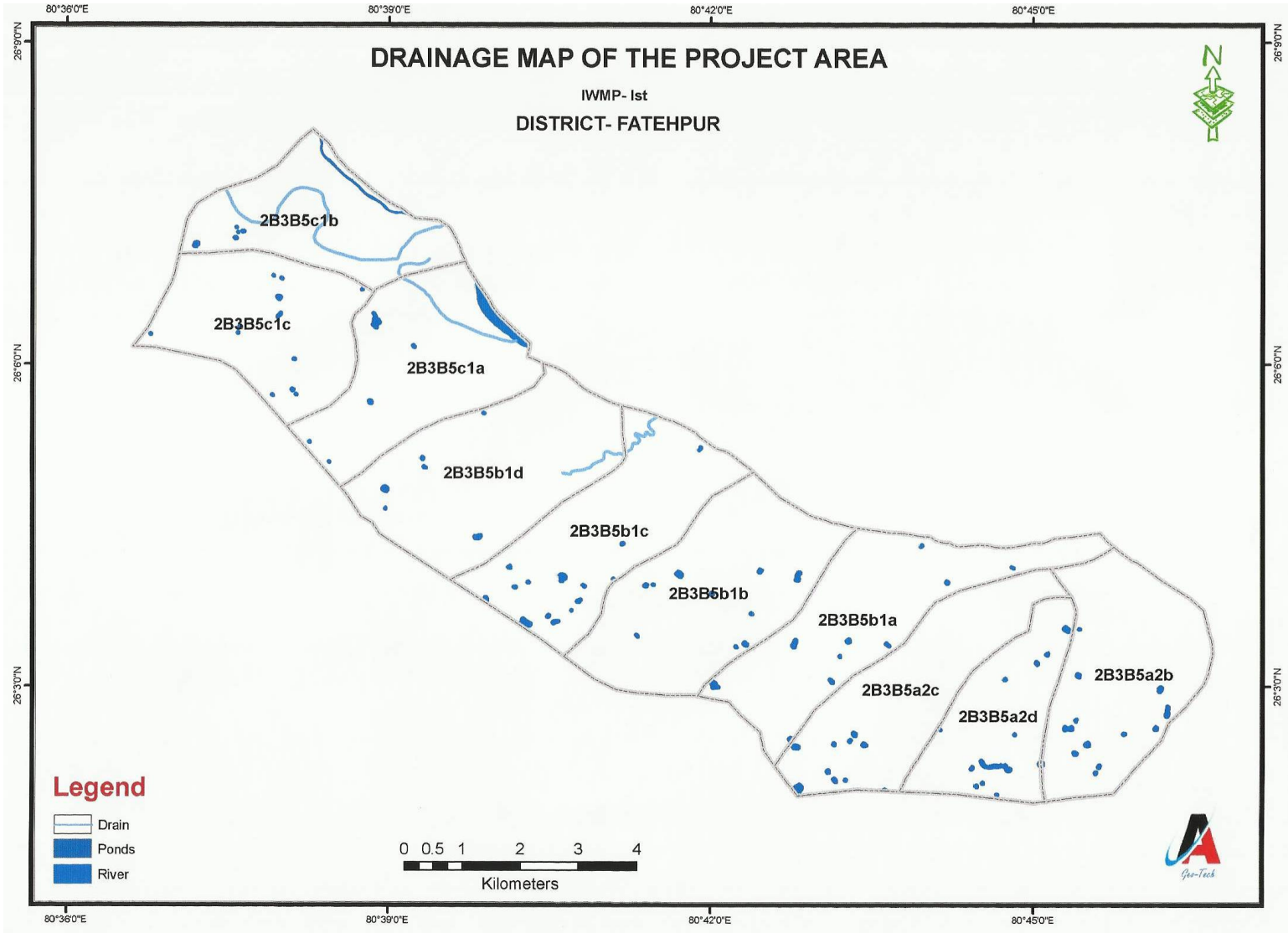

BASE MAP OF THE PROJECT AREA
IWMP- Ist
DISTRICT- FATEHPUR
N
80°36'0"E
80°39'0"E
80°42'0"E
80°45'0"E
26°9'0"N
26°6'0"N
26°3'0"N
2B3B5c1b
2B3B5c1c
2B3B5c1a
2B3B5b1d
2B3B5b1c
2B3B5b1b
2B3B5b1a
2B3B5a2c
2B3B5a2d
2B3B5a2b
Legend
Drain
Road
Scrub
Plantation
Ponds
River
Settlement
Waste_Land
MWS Code
2B3B5a2b
2B3B5a2c
2B3B5a2d
2B3B5b1a
2B3B5b1b
2B3B5b1c
2B3B5b1d
2B3B5c1a
2B3B5c1b
2B3B5c1c
0 0.5 1 2 3 4
Kilometers
Geo-Tech

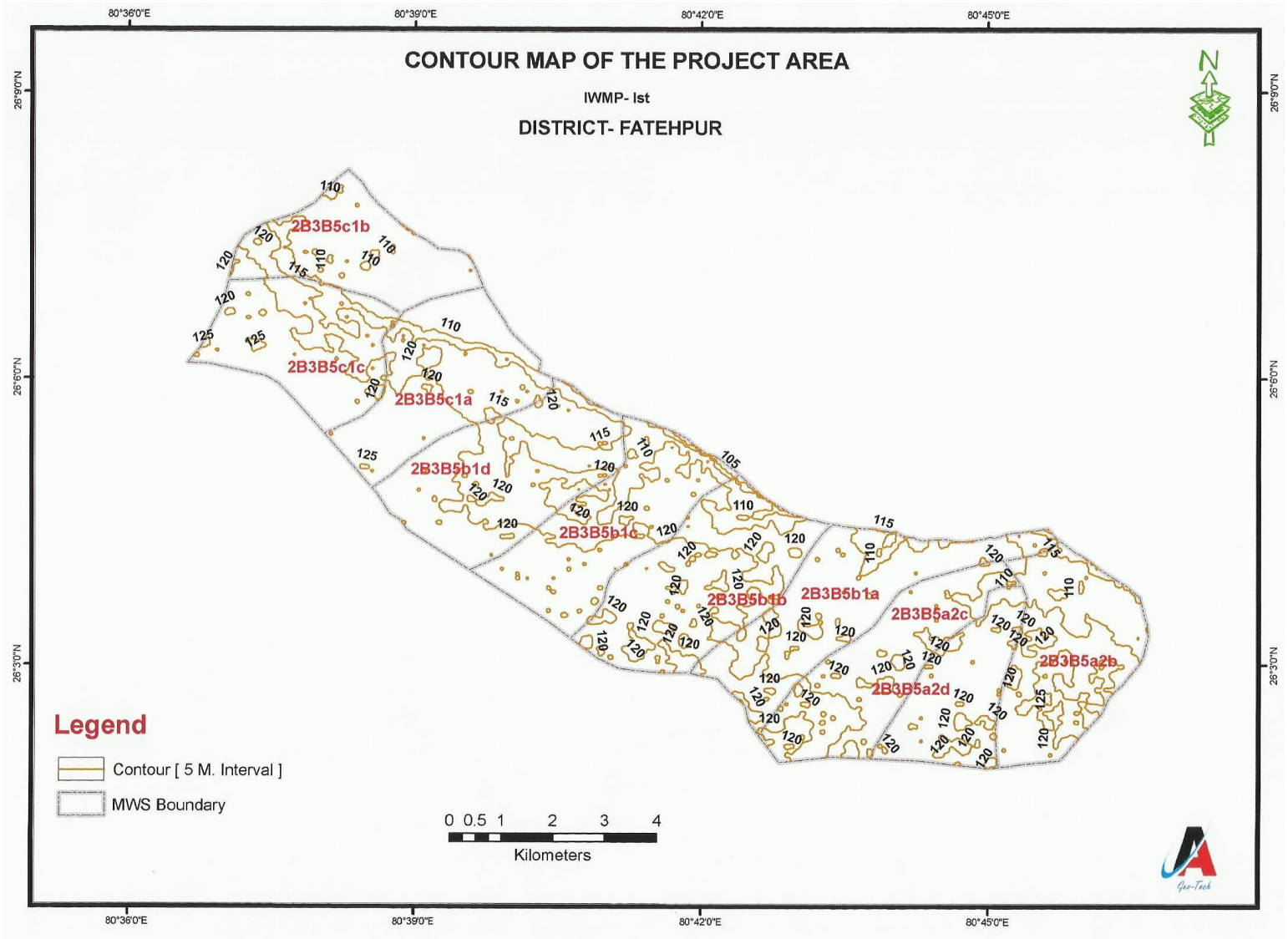

VILLAGE MAP OF THE PROJECT AREA
IWMP- Ist
DISTRICT- FATEHPUR
N
80°36'0"E
80°39'0"E
80°42'0"E
80°45'0"E
26°9'0"N
26°6'0"N
26°3'0"N
Bhaupur
Karanpur
2B3B5c1b
Madokipur
Govindpur
2B3B5c1c
Mauhar
Mayaiya
2B3B5c1a
Bhupatpur Aht.
Guneer
Lahangi
2B3B5b1d
Ajmeripur
Bhupatpur Aht.
Sultanpur
Kishunpur
Mahmudpur
2B3B5b1c
Umrauli Kalyanpur
Subedar Khera
Maksudan Khera
Lakshmanpur
Dev Mai
2B3B5b1b
Sarai Khande Aht.
Rewari Bujurg
Ibrahimpur
Gonda
Rewari Khurd
Rampur
Sairpur
2B3B5b1a
Rawatpur
Miyamau
Kotiya
Sauna Khera
2B3B5b2b
Jagdishpur
2B3B5a2c
Nandipur
Mirmau Pagamberpur
2B3B5a2d
Malwan
Bakoli Davatpur
Amoura
Rana
Legend
Village Boundary
0 0.5 1 2 3 4
Kilometers


SLOPE MAP OF THE PROJECT AREA
IWMP - I
DISTRICT - FATEHPUR
N
80°36'0"E
80°39'0"E
80°42'0"E
80°45'0"E
26°6'0"N
26°3'0"N
2B3B5c1b
2B3B5c1c
2B3B5c1a
2B3B5b1d
2B3B5b1c
2B3B5b1b
2B3B5b1a
2B3B5a2b
2B3B5a2c
2B3B5a2d
Legend
Watershed Boundary
SLOPE
0 % to 1% (Nearly Level)
1 % to 3% (Very Gentle Sloping)
3 % to 5% (Gentle Sloping)
5 % to 10% (Moderate Sloping)
10 % to 15% (Strong Sloping)
15 % to 35% (Moderate Steep to Steep Sloping)
> 35% (Very Steep Sloping)
5,000
2,500
0
5,000
Meters


TRANSPORT NETWORK MAP OF THE PROJECT AREA
IWMP- Ist
DISTRICT- FATEHPUR
N
80°36'0"E
80°39'0"E
80°42'0"E
80°45'0"E
26°9'0"N
26°6'0"N
26°3'0"N
2B3B5c1b
2B3B5c1c
2B3B5c1a
2B3B5b1d
2B3B5b1c
2B3B5b1b
2B3B5b1a
2B3B5a2c
2B3B5a2d
2B3B5a2b
Legend
Road
Settlement
0 0.5 1 2 3 4
Kilometers


LANDUSE/ LAND COVER MAP OF THE PROJECT AREA
IWMP- Ist
DISTRICT- FATEHPUR
N
80°36'0"E
80°39'0"E
80°42'0"E
80°45'0"E
26°9'0"N
26°6'0"N
26°3'0"N
2B3B5c1b
2B3B5c1c
2B3B5c1a
2B3B5b1d
2B3B5b1c
2B3B5b1b
2B3B5b1a
2B3B5a2c
2B3B5a2d
2B3B5a2b
Legend
Scrub
Plantation
Ponds
River
Settlement
Waste Land
Agriculture Land
0 0.5 1 2 3 4
Kilometers
Geo-Tech


DRAINAGE MAP OF THE PROJECT AREA
IWMP- Ist
DISTRICT- FATEHPUR
N
2B3B5c1b
2B3B5c1c
2B3B5c1a
2B3B5b1d
2B3B5b1c
2B3B5b1b
2B3B5b1a
2B3B5a2c
2B3B5a2d
2B3B5a2b
Legend
Drain
Ponds
River
0 0.5 1 2 3 4
Kilometers
80°36'0"E
80°39'0"E
80°42'0"E
80°45'0"E
26°9'0"N
26°6'0"N
26°3'0"N


CONTOUR MAP OF THE PROJECT AREA
IWMP- Ist
DISTRICT- FATEHPUR
80°36'0"E
80°39'0"E
80°42'0"E
80°45'0"E
26°9'0"N
26°6'0"N
26°3'0"N
2B3B5c1b
2B3B5c1c
2B3B5c1a
2B3B5b1d
2B3B5b1c
2B3B5b1b
2B3B5b1a
2B3B5a2c
2B3B5a2b
2B3B5a2d
Legend
Contour [5 M. Interval]
MWS Boundary
0 0.5 1 2 3 4
Kilometers
N

DETAIL PROJECT REPORT PREPARATION TEAM

S.No.	Name	Designation
1.	Shri Lalji Yadav	Dy. Director
2.	Shri Lalmani Prasad	B.S.A.
3.	Shri Ram Bahadur Tripathi	Junior Engineer
4.	Shri Ram Lakhan Verma	Junior Engineer
5.	Shri Ramendra Pal	Draft Man
6.	Shri Suresh Chandra Mittal	A.S.C.I.
7.	Shri Sukhram Singh	Work Incharge
8.	Shri Prem Chandra Sharma	Work Incharge
9.	Shri Ram Khelawan	Work Incharge
10.	Shri Ram Babu	Work Incharge
11.	Shri Raj Narayan Srivastava	Work Incharge
12.	Shri Sant Das Sahu	Work Incharge
13.	Shri Shiv Mohan Awasthi	Work Incharge
14.	Dr. Sant Ram	Work Incharge