

CHAPTER : IVLAND USE :FOREST REGION : (MAP 1B)

Forest occupies 1513.59 hectares or 6.86% of the total area of the 52 villages. The hilly area are usually covered with forests and some villages have more of their area under forests.

The wood from the forests are used for the construction of houses (Teak, Sando) Making agricultural implements (Teak locally known as Sag), Babul, Ashitara and the leaves of some trees are used for making beedies (indigenous cigarettes (Ashitara leaves) and making plates and bowls (khakhar leaves) which are used in serving food and liquid recipes during community dinner.

Songir forest region : The village of Songir to the south west has the largest percentage of area under forest (42.23% of its area). The Songir and Punpawa hills have extensive forests (Photo 1). The village has 189.47 hectares of forest which forms 12.52% of the total area under forest in the 52 villages (0.86% of the total area of the 52 villages). Teak, Ashitara, Berry and Babul are the most common trees in these forests.

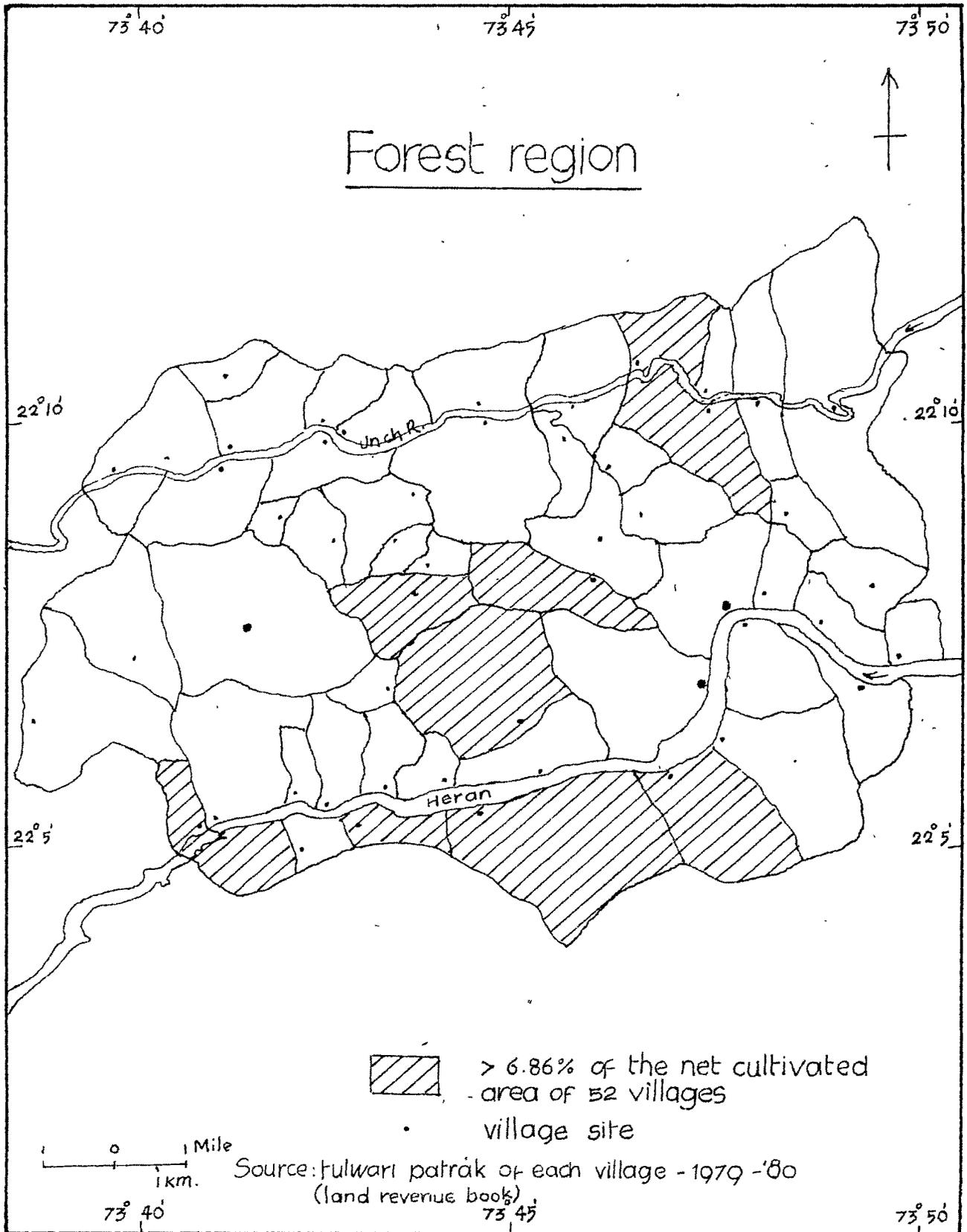
Lunadra, Parvata, Ghantoli Region : To the south of Heran river and the study area there are 3 villages with large area under forests namely Lunadra (33.94% Parvata (29.76% and Ghantoli 8.53% . These three villages together have 746.54 hectares under forest which forms 49.32% of the total area under forest in the 52 villages (3.38%) of the study area.....

FOREST REGION :TABLE : 3

NO.	NAME OF THE VILLAGE	TOTAL AREA OF THE VILLAGE IN HECTARE	AREA UNDER FOREST	% OF FOREST TO TOTAL AREA OF THE VILLAGE	% OF FOREST TO TOTAL AREA OF FOREST IN 52 village
1.	Songir	448.91	189.47	42.23	12.52
2.	Lunadra	765.41	259.40	33.54	17.14
3.	Vadadia	442.96	140.02	31.29	9.25
4.	Parvate	1907.58	448.40	29.76	29.62
5.	Lachhree	892.37	166.40	19.15	10.99
6.	Khodia	281.03	49.75	16.24	3.02
7.	Ghantoli	347.68	38.74	8.83	2.56
8.	Pansj	535.96	38.86	7.24	2.57
9.	Vegetha	330.08	22.67	6.91	1.50
10.	Kadchhala	1861.78	124.24	6.70	8.20
11.	Chorangle	329.01	8.50	2.61	0.56
12.	Sinhadra	810.22	16.18	2.01	1.07
13.	Serghi	400.47	6.07	1.53	0.40
14.	Vasna	788.72	7.28	0.95	0.49
15.	Taleti	309.26	1.61	0.52	0.11

Remaining 37 villages do not have forest.

Total 22,076.89 1,513.59 6.86



Map. 18

Berry, Ashitara, Khakhar and Teak are found in these forests. Of these Parvata has the largest area under forest (448.80 hectares) more than Songir region, although the percentage of forest to total area is only 29.76.

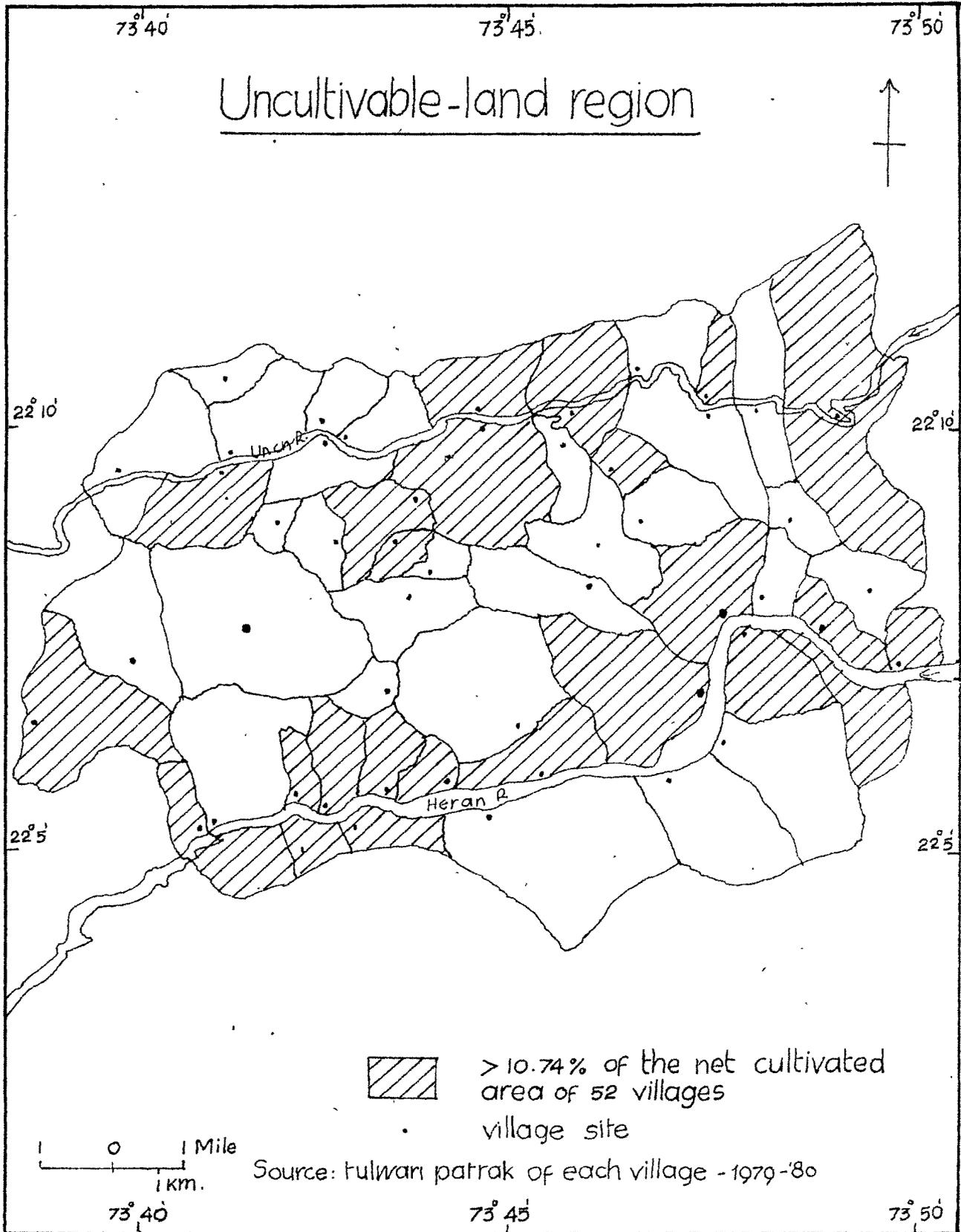
Songir and Parvata regions have important forest in the study area. Vadadla, Lachhrae, Vagetha region, - it is third important forest region in the middle of the study area comprising Vadadla (31.29%) Lachhrae (19.15%) and Vagetha (6.91%). The Lachhrae hills is covered with forests. These 3 villages together have 329.09 hectares under forest which forms 21.74% of the forest area of the 52 villages (1.49% of the study area). The forests of this region have hampered easy communication between western and eastern central villages. These forests are situated near all the three central places but have proved to be a barrier between the west and east of the study area. Ashitara, Khakhar and Teak are the main trees in this area.

Khodia, Ponej region, the fourth forest region is to the north of Kosindra and comprising 2 villages i.e. Khodia (16.24%) and Ponej (7.24%) these two villages together have 84.61 hectares area under forests which forms 5.59% of the forest area of the 52 villages (0.36% of the study area). This is comparatively a small forest region Sag, Khakhar and Babul grow in these villages.

Uncultivable land region : (Land that cannot be brought under cultivation is termed here uncultivable). (Map 19)

Land which cannot be cultivated is called uncultivable land, which includes village site, roads, river, gullies etc. It occupies 2369.01 hectares or 10.74% of the total area of the 52 villages.

The area to the south of the study area along the river Heran comprising Sarangpur (37.80%), Chikhodra (18.94%), Un (18.17%), Talati (17.81%), Ghantoli (15.68%), Songir (14.51%), Rambari (14.40%), Varna (14.16%), Kosindra (12.54%), Navagam (12.48%), Padwan (11.99%), Khunwad (11.38%), Amarpura (10.98%). These 15 villages together have 863.13 hectares under uncultivable land which forms 36.43% or 1/3 of the total area of the uncultivable land in the 52 villages.



Map: 19

The central place Villana Vaana accounts for the 4.71% of the total uncultivable land of the 52 villages. It is followed by Khunwad (4.44%) These villages have gullies and Vaana has river.

The second area where the proportion of uncultivable land predominates is in the north of the study area, comprising Chhechhadra (33.69%) Chorangla (21.52%) Savjipura (21.40%) Sarsinda (17.21) Jarwan (12.92%) Geharpura (12.73%) Ramasingpura (12.54%) Vadadla Chorangla (10.36%) and Kadchhala (10.88%) These nine villages together have (683.97) hectares or 1/4 of uncultivable land (or 28.87% of the total area of the uncultivable land in 52 villages) Chhechhadra is having 1/3 of its area under uncultivable land because of the Unch river and Bhorde Kotar, the gullies formed by the Bhorde Kotar.

Table : 4

Uncultivable land region :

No.	Name of the Village	Total area of the village	Area under uncultivable land.	% of uncultivable land to total area of the village	% of uncultivable land to total area of uncultivable land in 52 villages.
1.	2	3	4	5	6
1.	Sarangpur	209.64	79.13	37.30	3.30
2.	Chhechhadra	397.82	133.86	33.60	5.65
3.	Chorangla	329.44	70.85	21.52	2.99
4.	Savjipura	109.68	23.47	21.40	0.99
5.	Chikhodra	457.17	87.63	19.17	3.70
6.	Un	307.18	55.84	18.17	2.36
7.	Taleti	309.26	55.03	17.81	2.32
8.	Kothiys	167.49	29.55	17.65	1.25
9.	Sarsinda	693.95	119.47	17.20	5.04
10.	Rajbodali	324.65	55.49	17.07	2.35
11.	Ghantoli	348.68	53.03	15.08	2.24
12.	Sengir	440.91	65.18	14.51	2.75
13.	Ramsan	177.13	225.50	14.40	1.08

1	2	3	4	5	6
14.	Vasna	788.72	25.50	14.40	1.08
15.	Jarvan	516.69	66.20	12.92	2.79
16.	Geharpura	184.83	14.35	12.73	0.61
17.	Koelindra	567.93	71.22	12.54	3.01
18.	Ramsingpura	90.39	11.33	12.54	0.47
19.	Navagam	220.48	27.51	12.48	1.16
20.	Padvan	249.85	29.96	11.99	1.26
21.	Khunwad	889.65	105.27	11.38	4.44
22.	Amarpura	110.50	12.14	10.98	0.51
23.	Vadadla Chozangla	383.90	42.10	10.96	1.78
24.	Kadchhad	1051.78	292.36	<u>10.86</u>	8.54
25.	Sarsindra Chhachha	385.78	38.46	9.96	1.62
26.	Kapadia	150.55	14.97	9.94	0.64
27.	Kachhata	265.89	26.31	9.89	1.11
28.	Sunderpura	152.47	14.98	9.79	0.63
29.	Parvata	1507.50	147.30	9.77	6.22
30.	Sarghi	400.47	38.04	9.50	1.60
31.	Kharvada	164.28	14.97	9.12	0.63
32.	Sinhadra	810.22	70.01	8.64	2.95
33.	Panej	535.96	46.15	6.64	1.95
34.	Khodia	282.03	23.20	8.04	0.98
35.	Amzoli	190.94	14.98	7.85	0.63
36.	Bhatpur	1237.23	54.73	7.65	3.99
37.	Vajetha	330.08	24.29	7.35	1.02
38.	Lachharas	852.37	61.10	6.93	2.58
39.	Dasan	345.37	22.06	6.67	0.93
40.	Chudhali	429.43	26.30	6.12	1.11
41.	Kanakuwa	109.77	6.50	5.92	0.27
42.	Tipbi	194.52	11.33	5.92	0.48
43.	Lunadga	765.41	36.42	4.75	1.54
44.	Kuberpura	76.53	3.64	4.73	0.15
45.	Indral	622.04	26.40	4.22	3.22
46.	Sardarpura	92.19	3.79	4.00	0.16
47.	Vadadla	442.96	15.78	3.56	0.53
48.	Bhorde	354.71	12.54	3.53	0.52

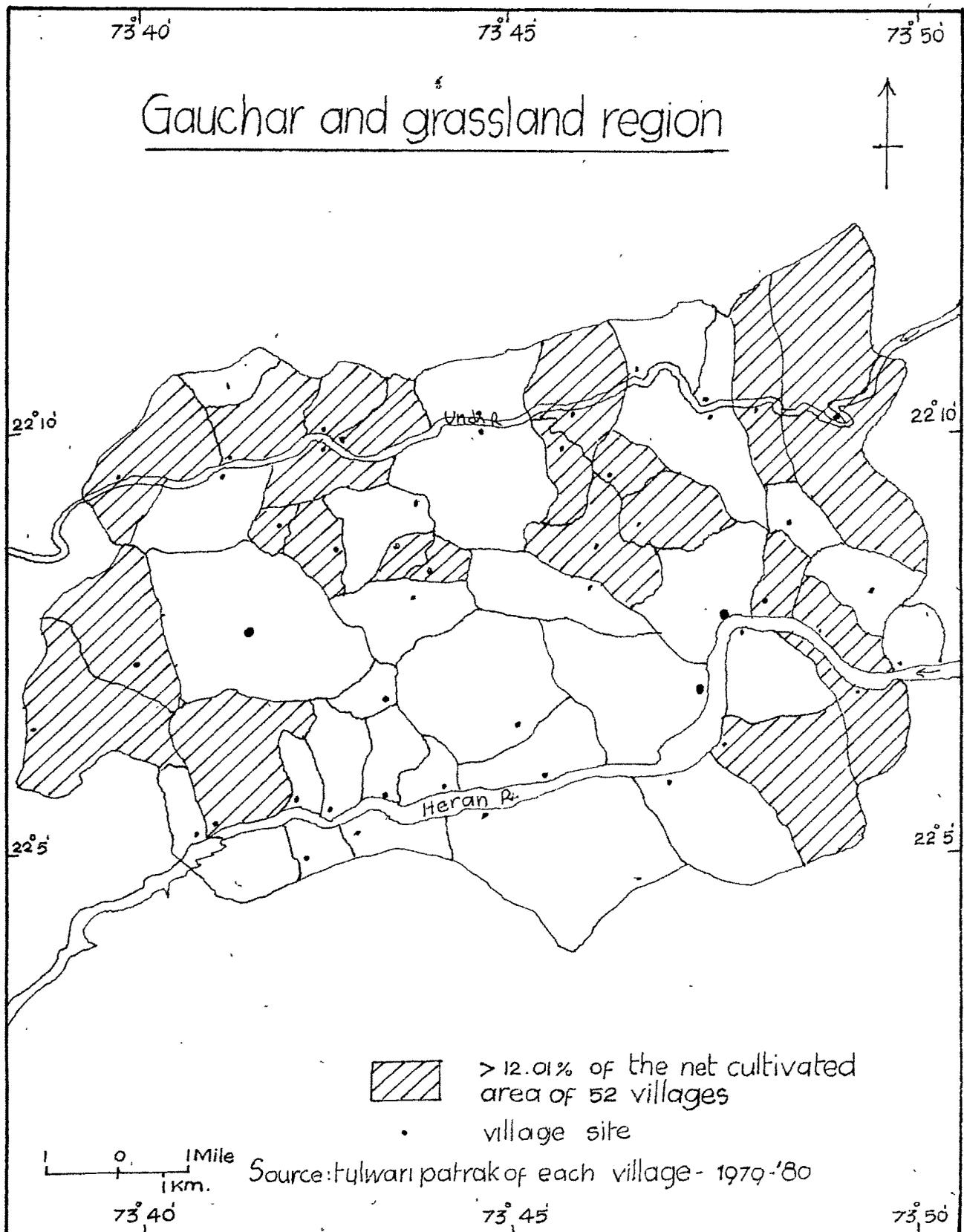
1	2	3	4	5	6
49.	Vatratia	177.37	5.26	2.96	0.22
50	Simalghoda	100.54	2.42	2.42	0.10
51.	Deroali	270.17	5.66	2.09	2.24
52.	Timba	766.72	14.37	1.84	0.61
	Total	22,076.89	2,369.01	10.74	

GAUCHAR & GRASSLAND REGION : MAP 20

Gauchar (community pasture land for cows and cattle and grassland (private grassland, meadows) region occupies 2653.37 hectares (12.01%) or nearly 1/8 of the total study area. It includes Gaucharland, groves (growing of shortgrass on wasteland after rain) and grassland, agriculture, the occupation of the villages being dependent on ploughing by oxen almost every villages raises a few animals. The gauchar and grassland are generally found along the river banks, ravines and gullies (Photo 31).

Indral, Khunwad, Timba region : The most important gauchar and grassland region is to the south west of the study area, comprising of Indral (20.11%) khunwad (16.55%) and Timba (12.31%) These three villages together have 424.19 hectares under gauchar and grassland which forms 15.99% of the total area under gauchar and grassland (1.92% of the total study area) The grassland in these villages are privately owned while gauchar is part of the village pasture.

Chudhali, Kadoghala region : It is the second important gauchar and grassland region and it is to the north east of the study area comprising the two villages of chudhali (15.16%) and Kadoghala (14.29%) These two villages together have 331.20 hectares under gauchar and grassland which forms 12.48 % of the total area under gauchar and grassland (1.50%) of the total area of the 52 villages. The Kadoghala and Chudhali Kotars and the Unch river banks are the main areas of pasture in these villages.



Map 20

TABLE 5

GAUCHAR & GRASSLAND REGION

No.	Name of the Village	Total area of the village	Area under Gauchar & Grassland in Hectares	% of Gauchar & Grassland to total area of the village	Gauchar & Grassland to total area of 52 villages.
1.	2	3	4	5	6
1.	Sardarpura	90.19	28.73	31.85	1.15
2.	Indral	622.04	174.38	28.11	6.58
3.	Savjipura	109.68	75.99	23.67	0.98
4.	Kachhata	265.89	61.91	23.28	2.34
5.	Sarghi	400.47	92.12	23.00	3.47
6.	Timbi	194.52	43.18	22.19	1.62
7.	Deaar	345.37	74.96	21.70	2.78
8.	Khanreda	164.28	34.00	20.69	1.27
9.	Amroli	190.94	38.07	19.94	1.43
10.	Rajbodeli	324.65	57.30	17.65	2.16
11.	Ramsingpura	90.39	15.26	16.89	0.57
12.	Kepadia	150.55	25.03	16.63	0.94
13.	Khunwad	889.65	147.28	16.55	5.65
14.	Deroli	270.17	41.79	15.46	1.57
15.	Chudheli	429.43	65.11	15.16	2.45
16.	Sinhadra	810.22	122.07	15.07	4.60
17.	Kodchhala	1861.78	266.19	14.39	10.02
18.	Kubarpura	76.98	10.73	13.94	0.40
19.	Timba	766.72	102.07	13.31	3.85
20.	Vatvatia	177.37	21.52	12.13	0.81
21.	Sarsinda Chhachha	385.78	49.18	12.75	1.85
22.	Navagam	270.48	28.12	12.75	1.05
23.	Chhachhadra	397.44	48.25	12.14	1.82
24.	Chikhodra	457.17	53.75	11.76	2.01
25.	Sundarpura	152.47	17.55	11.51	0.65
26.	Lochhira	852.37	91.07	10.68	3.44
27.	Vadadia Chorendra	383.90	42.93	11.18	4.61
28.	Vagatha	330.08	34.08	10.32	1.28
29.	Kanakuwa	109.77	11.14	10.15	0.42
30.	Chorangle	329.01	32.58	9.90	1.23
31.	Sarsinda	695.45	68.16	9.79	2.57

1.	2.	3	4	5	6
32.	Amarapura	110.50	10.25	9.28	0.39
33.	Parvata	1507.58	139.93	9.28	5.27
34.	Vaena	788.72	69.88	8.86	2.63
35.	Bhatpur	1237.23	104.59	8.45	3.96
36.	Rangari	177.13	14.71	8.30	0.55
37.	Lunadra	765.41	63.27	8.27	2.35
38.	Paduan	249.85	20.28	8.12	0.76
39.	PanaJ	535.96	43.44	8.10	1.64
40.	Khodia	282.03	22.84	8.03	0.86
41.	Gantoli	347.68	25.88	7.74	0.99
42.	Bhorde	354.71	26.62	7.50	0.98
43.	Sarangpur	202.84	15.15	7.22	0.27
44.	Jaawan	513.64	77.61	6.16	2.88
45.	Kasindra	867.43	38.81	6.83	1.46
46.	Vadadia	442.96	26.70	6.03	1.00
47.	Taleti	309.26	18.50	5.92	0.69
48.	Songir	449.91	24.95	5.55	0.94
49.	Simalyhoda	100.54	5.27	5.24	1.19
50.	Geharpura	104.83	4.22	4.84	0.16
51.	Un	307.18	12.09	3.94	0.14
52.	Kothiya	167.49	4.10	2.24	0.88
	Total	2,207.89	2,653.37	12.01	

North Western Region : It is the third important gauchar and grassland region, comprising 9 villages Sardarpura (31.85%), Kachhata (23.28%) Timbi (22.19%) Amoli (19.94%) Rangirpura (16.89%) Deroli (15.46%) Kuberpura (13.94%) Vatvati (13.13%) and Sarsinda Chhachha (12.75%). These nine villages together have 314.05 hectares under gauchar and grassland which forms 11.76% of the total area under gauchar and grassland (1.41% of the total area of the 52 villages) These villages are also along the Unch river and have several kotars.

Sarghi Dasan region : It is the fourth gauchar and grassland region and is situated to the north central part of study area (Photo 31) comprising 5 villages, Sevji (23.69%), Sarghi (23.00%) Deen (21.70%) Kapadia (16.63%) and Chhachhadra (12.14%) These five villages together have 266.35 hectares under gauchar and grassland which forms 9.99% of the total area under gauchar and grassland (1.20% of the total area of the 52 villages) The Bhorda Kotar is the important pasture land because of the more gullies.

Khareda Sinhadra region : It is the last gauchar and grassland region and it is situated to the southeast of the study area comprising 4 villages khereta (20.69%) Rajbodali (17.65%) Sinhadra (15.07%) Navagam (12.75%) These four villages together have 241.49 hectares under gauchar and grassland which forms 9.08% of the total area under gauchar and grassland (1.09% of the total area of the 52 villages)

All the pasture lands are accessible to three central place villages but there is concentration of it along the Unch river and the gullies in the north than along the Heran river. The gullies are generally uncultivable land and hence they are left as poor pasture, grass is not grown as animal feed as the arable land has to raise crops for human feed. The animals therefore have to depend on natural pasture.

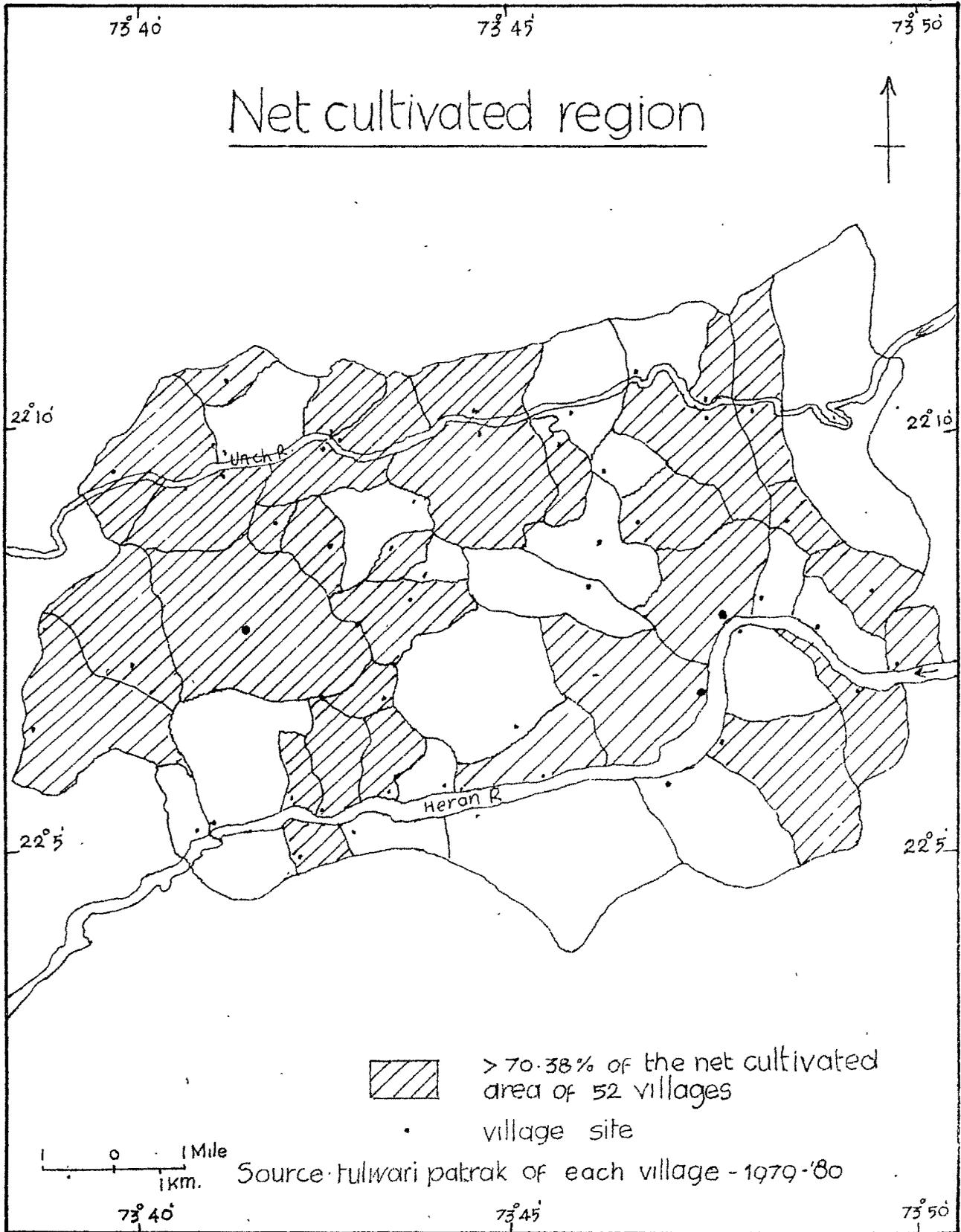
7. CULTIVATED REGION : MAP 21.

Cultivated land is of great significance to any rural agricultural economy. Cultivated area forms 70.38% (15540.92 hectares) or more than two third of the study area. Of these 51 villages have more than 50% and 34 villages more than 70% of their area under different crops. Only Songir has less area under cultivation (37.69%) A large part of Songir is hilly, occupied by the Songir and Punpawa hills. It has also extensive forests (42.23%).

On the whole the study area is a near flat plain with two rivers the Heran in the south and the linch to the north providing the water for cultivation and irrigation. But the rivers have also eroded the surface forming deep gullies, which are uncultivable. Besides the hills, kotars, forests and some pastureland, the entire region is quite fertile. The forest and the kotars in the centre of the study area forms the divide between the major cultivated areas into two, the Western and Eastern regions. (map 2)

TABLE 6The Net Cultivated region :

No.	Name of the Village	Total area of the village in hectares	Area under Net cultiv. ation in hectares	% of net cultivat. ion area to the tot. al area of the village	% of net cultivated area to total area in 52 villa
1.	2	3	4	5	6
1.	Simalghoda	100.94	92.85	92.45	0.60
2.	Bhorda	364.71	315.56	86.98	2.03
3.	Yimba	766.72	650.28	84.79	4.18
4.	Kanakuva	109.77	92.13	83.93	0.59
5.	Bhatpur	1237.23	1037.92	83.85	6.68
6.	Vatvatia	177.37	150.59	83.79	0.97
7.	Deroli	270.17	222.72	82.44	1.43
8.	Geharpura	104.83	86.24	82.22	0.55
9.	Kubarpura	76.93	62.56	81.30	0.40



Map: 21

1	2	3	4	5	6
10.	Kosindra	167.93	457.90	80.63	2.95
11.	Jarwan	516.69	413.88	60.12	2.66
12.	Kothiye	167.68	133.84	79.97	8.66
13.	Padwan	249.85	199.61	79.88	1.28
14.	Anarpura	110.50	88.11	79.70	0.57
15.	Sunderpura	152.47	119.94	78.72	0.77
16.	Chudhalli	429.43	238.02	78.71	2.18
17.	Un	307.18	234.25	77.88	1.54
18.	Vadadla Chorangle	383.90	298.87	77.84	1.92
19.	Ramsari	177.13	136.91	77.33	0.86
20.	Sasinda Chhachha	385.78	298.14	77.25	1.92
21.	Vaana	788.72	199.87	76.07	3.86
22.	Panoj	936.96	407.51	76.00	2.62
23.	Taleti	309.26	234.31	75.77	1.50
24.	Vagetha	330.08	249.04	75.44	1.60
25.	Navagam	220.48	164.85	74.83	1.06
26.	Sinnedra	810.22	601.96	74.29	3.87
27.	Kopadia	150.55	110.55	73.43	0.71
28.	Sarsinda	693.95	506.36	72.95	3.26
29.	Amzoli	190.94	137.89	72.26	0.89
30.	Timbi	194.52	140.03	72.01	0.90
31.	Dasan	345.37	248.35	71.93	1.60
32.	Khunwad	889.65	637.18	72.55	4.10
33.	Ramsingpura	90.39	63.80	<u>70.62</u>	0.41
34.	Khareta	164.28	115.31	70.28	0.74
35.	Chikhodra	457.17	315.79	69.07	2.03
36.	Kadchhala	1861.78	1269.01	68.16	8.17
37.	Ghantoli	347.68	230.93	68.00	1.48
38.	Indral	622.04	421.26	67.69	2.71
39.	Khodia	282.03	190.24	67.66	1.22
40.	Kachhata	265.89	177.67	66.79	1.14
41.	Sanghi	400.47	264.25	66.00	1.70
42.	Chorangle	329.01	217.08	65.94	1.39
43.	Rajbodali	324.65	211.86	65.26	1.36

1	2	3	4	5	6
44.	Sardarpura	92.19	57.67	62.65	0.37
45.	Lechhrae	852.37	533.80	62.59	3.43
46.	Vadadia	442.96	260.46	58.00	1.68
47.	Sarangpur	209.64	116.36	55.43.	0.75
48.	Savjipura	109.68	60.22	54.90	0.39
49.	Chhachhadra	397.44	215.33	54.18	1.38
50.	Lunadra	761.41	406.32	53.06	2.61
51.	Parvata	1507.58	771.95	51.20	4.97
52.	Songir	448.91	169.31	37.69	1.08
	Total	22,076.89	15,540.92	70.38	

Table 7 : The Western Region . Not Cultivated area :

Sr. No.	Villages	% total area of the village.
1.	Timba	84.79
2.	Kanakuva	83.93
3.	Bhatpur	83.85
4.	Vatvatia	83.79
5.	Deroli	82.44
6.	Kuberpara	81.30
7.	Jarvan	80.12
8.	Kothiye	79.97
9.	Padvan	79.88
10.	Amarpura	79.70
11.	Sunderpura	78.72
12.	Vadadia Chorangla	77.84
13.	Ramsari	75.33
14.	Sarainda Chhachha	77.25

no. % to total area of the village.

15.	Vagotha	75.44
16.	Kapadia	73.43
17.	Sarsinda	72.95
18.	Amroll	72.26
19.	Timbi	72.01
20.	Khunwad	71.51
21.	Ramsingpura	70.62

The western region comprises 21 villages. These 21 villages together have 5750.35 hectares under cultivation which forms 37.00% of the non cultivated area of the 52 villages. There are 11 villages in this group which have more than 80% of their area under crops. Timba has the highest percentage of cultivated area (84.79%) Bhatpur is situated in this region. It also has a large area under cultivation (83.85%). The settlement area in this village occupies a significant part because of the larger population, with the result, the area under cultivation is comparatively less. Bhatpur is surrounded by well cultivated lands which supplies it with a variety of commodities. But the 21 villages of the western region together account for only 37% of the net cultivated area of the 52 villages whereas 12 villages of the eastern region in which Kosindra and Vazna are situated account for 24.37% of the cultivated area. The Western region, therefore, is comparatively poorer in cultivation than the Eastern region.

Table - 8 Eastern region

No.	Villages	% to total area of the village.
1.	Sinalghoda	92.45
2.	Bhurda	88.98
3.	Gaharpura	82.22
4.	Kosindra	80.64
5.	Chudhali	78.71
6.	Un	77.88
7.	Vazna	76.07

NO.	Villages	% to total area of the village.
-----	----------	---------------------------------

8.	Panej	76.00
9.	Talati	75.77
10.	Navagam	74.83
11.	Sinhadra	74.29
12.	Deaan	71.93

The eastern region comprises 12 villages. These 12 villages together have 3786.66 hectares under cultivation which forms 24.37% of the not cultivated area of the 52 villages. There are 4 villages in this group which have more than 60% of their area under cultivation. Sinalghoda has the highest percentage of its area under cultivation (92.45%). It is a small village of some 100 hectares and almost all its area is cultivated. The land in the Eastern region is comparatively flat and the kotars are not as deep as in the west. Kosindra and Vaana are situated in this region. Both have large area under cultivation, 20.64%, 76.07% of the total area respectively. But Kosindra shows more progress in cultivation than Vaana. The settled and uncultivable land in Vaana is greater than that of Kosindra being 14.16% as against Kosindra 12.54%.

Nineteen villages have less than the percentage to cultivated area of the 52 villages. In the central part of the study area a group of these villages form a continuous region separating the western region from the eastern region some of these villages are to the north of the Heran. But they all have more than half their area under cultivation except, Songir. These villages have either hilly soil or they are forested or they have been eroded by the two rivers leaving deep gullies along these banks.

IRRIGATED REGION : Map 22

Irrigation facilities are very important for any rural agricultural economy. It increases the yield and protects the crops during the period of uncertain rainfall.

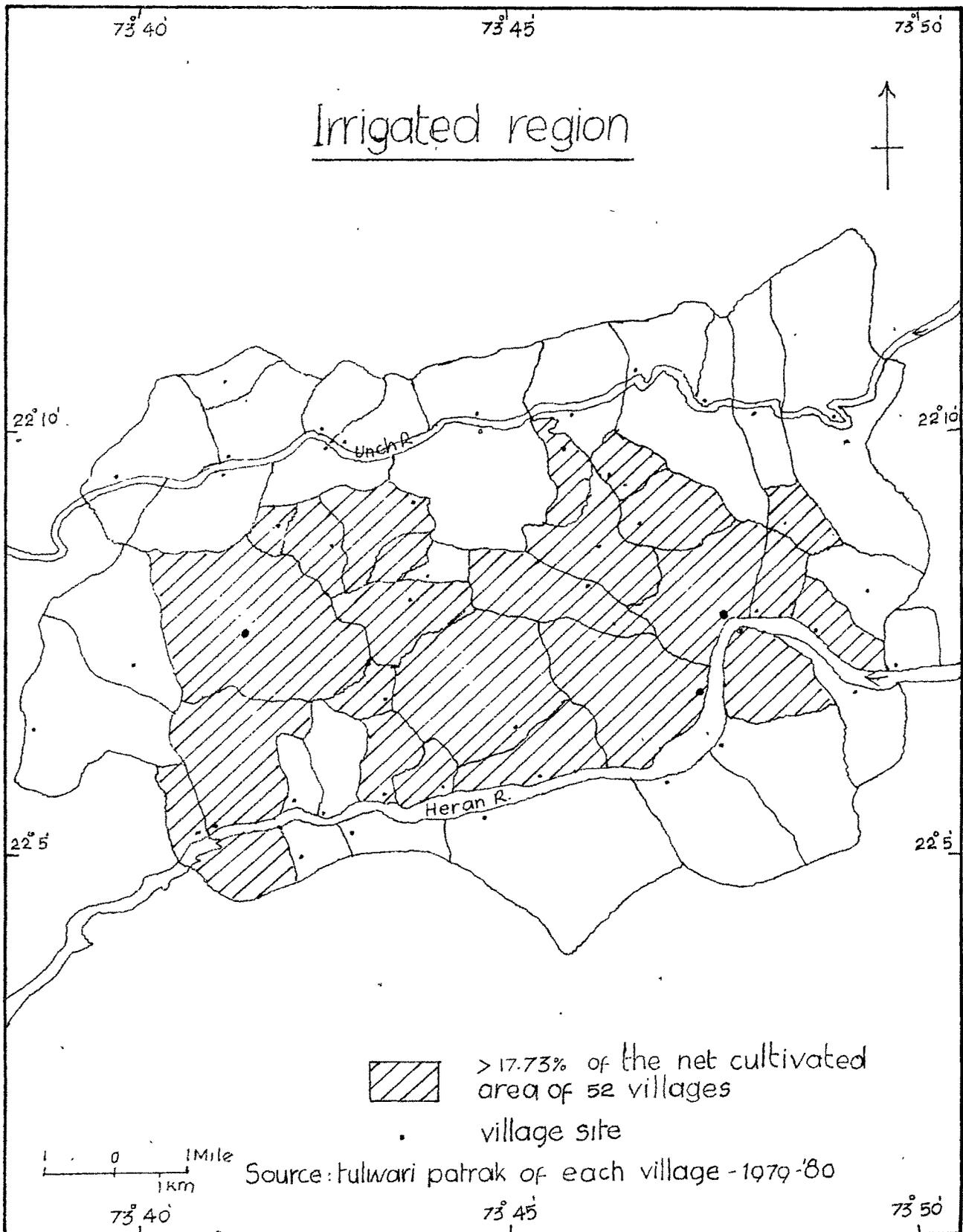
There are 41 villages in the study area which have irrigation facilities. The main means of irrigation are either by well or by canal. They irrigate 2651.71 hectares or 17.73% of the net cultivated area of the 52 villages. Of the 41 villages irrigated, 23 have more area under irrigation than the 17.73% for the study area. Sanghi has the highest percentage of its cultivated area under irrigation. It has both well and canal irrigation. Chikhodra, Kasindra, Rajbodeli and Khareda also have a large percentage of their net cultivated area under irrigation and are served by both wells and canals.

Vasna, Vagotha, Vatratis, Vadadia, Kubarpura, Indral, Ramseri and Dezen have medium facilities of irrigation. Much of the cultivated area in these villages are owned by the rich landowners of Bhatpur and Kasindra. Except for Vadadia which has only canal irrigation and Kubarpura which is served only by wells all the other villages in this group have both canal and well irrigation.

In the villages of Kachhata, Sundarpura, Jarwan, Khunwed, Timba, Timbi, Parvata, Chudheli and Un the irrigation facilities are poor being only below 10% of the net cultivated area.

There are also 11 villages in the study area with no irrigation facilities. They are Sinhadra, Lunadra, Khodia, Vadadia, Chorangla, Geharpura, Anoli, Daeoli, Sarvinda Chhachha, Sardarpura, Kathiya Ghentoli.

Well irrigation occupies 1512.05 hectares (9.73% of the net cultivated area of the 52 villages) while the Heran canal irrigates 1245.66 hectares (7.99%) of the net cultivated area of the 52 villages. Wells are usually constructed by the rich farmers of the eastern region. There is good perennial supply of water in the wells except in the west of Bhatpur village and the water table is high due to nearness of Heran and Unch Rivers. Well irrigation and pumping of water by electricity was introduced (in the study area) in the 1920's previously diesel-



Map: 22

Scale : 9

Irrigated Region :

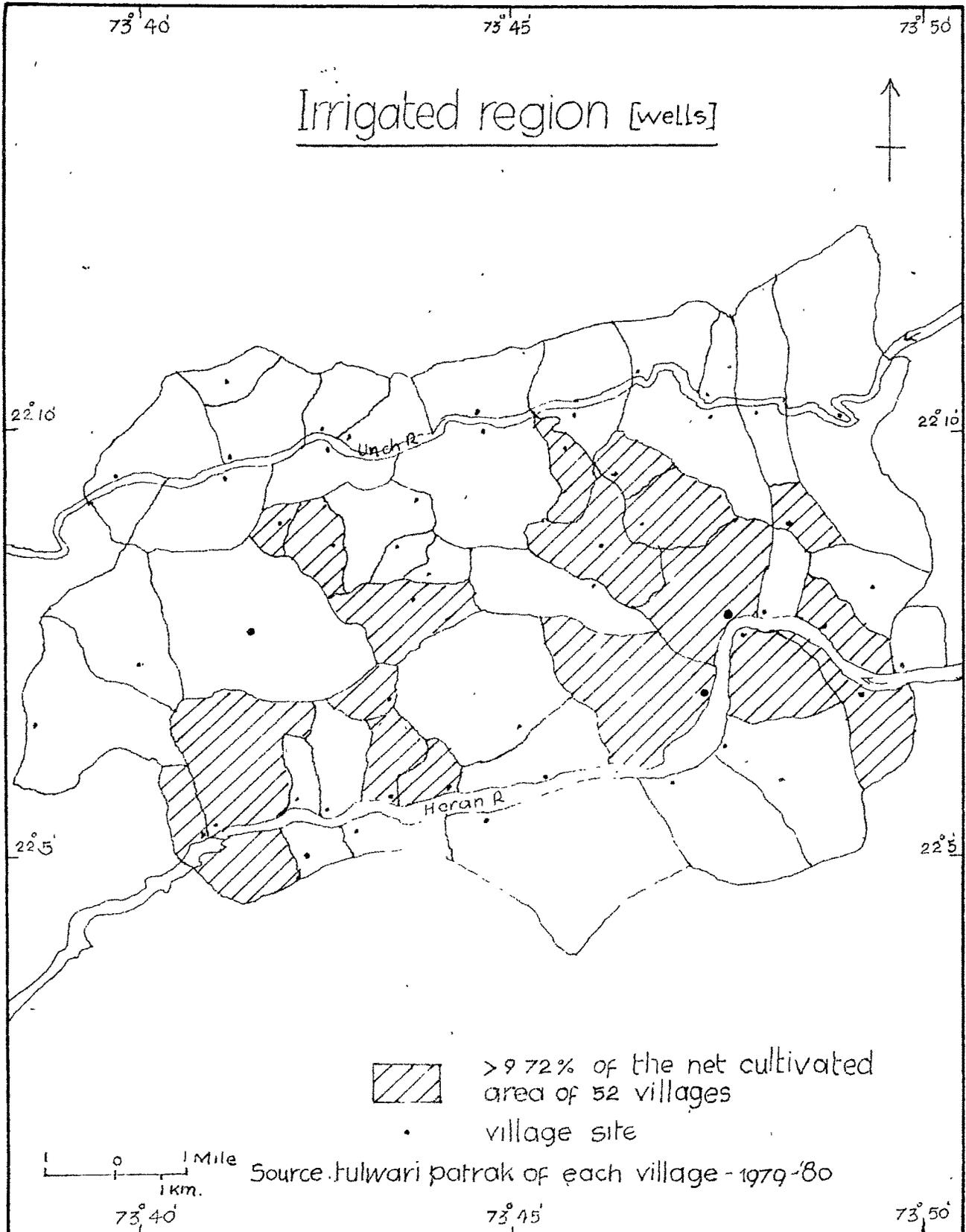
No.	Name of the Village	Net cultivated area in hectares.	Area under irrigation	% of irrigated area to net cultivated area	% of irrigated area to total area under irrigation of 52 villages.
1.	2	3	4	5	6
1.	Sarghi	264.24	220.63	83.49	8.00
2.	Chikhodra	315.79	217.64	68.91	7.90
3.	Kosindra	457.90	315.10	68.81	11.43
4.	Rajbodali	211.86	127.63	60.24	4.63
5.	Kherada	115.31	65.15	56.49	2.36
6.	Songir	169.31	82.03	48.44	2.98
7.	Kanakkuva	93.13	40.66	43.13	1.48
8.	Vaena	139.87	257.58	42.93	9.35
9.	Simalghoda	92.85	38.41	41.36	1.39
10.	Dogetha	249.04	100.20	40.23	3.64
11.	Vatvatia	150.59	89.99	39.83	2.18
12.	Vadadla	260.46	103.60	39.77	3.76
13.	Kubarpura	62.56	22.45	35.70	0.80
14.	Indral	421.26	128.79	30.47	4.66
15.	Ramsari	136.99	40.63	29.67	1.47
16.	Desan	248.38	69.66	28.04	2.53
17.	Ramsingpur	63.80	17.35	27.19	0.63
18.	Kapadia	110.55	28.11	25.42	1.02
19.	Sarangpur	116.36	28.24	24.26	1.02
20.	Chorengia	217.08	51.46	23.93	1.89
21.	Taleti	234.31	51.39	21.93	1.86
22.	Lechras	535.80	101.09	18.93	3.67
23.	Bhatpur	1037.92	183.74	17.73	6.67
24.	Padwan	199.61	33.88	16.82	1.22
25.	Savjipura	60.22	10.13	16.82	0.37
26.	Amarpura	88.11	14.16	16.07	0.51
27.	Navagam	164.65	17.09	10.36	0.62
28.	Kachhata	177.67	17.20	9.68	0.62
29.	Un	239.25	22.25	9.29	0.80

1	2	3	4	5	6
30.	Sunderpura	119.94	10.22	8.43	0.37
31.	Derun	413.88	33.29	8.04	1.21
32.	Khenuad	637.18	50.12	7.86	1.82
33.	Timbi	140.03	10.52	7.51	0.38
34.	Pervate	771.95	53.10	6.87	1.93
35.	Timbe	650.28	40.20	6.18	1.46
36.	Chhachhadra	215.33	12.08	5.60	0.44
37.	Bhorde	315.55	14.10	4.46	0.51
38.	Panaj	407.51	14.18	3.47	0.51
39.	Sarsinda	506.36	15.75	3.11	0.57
40.	Chudheli	338.02	9.12	2.69	0.33
41.	Kadchhala	1269.01	29.19	2.31	1.01
	Total	15,540.92	2,755.71	17.53	

Remaining 11 villages do not have irrigation facilities.

WATERED REGION (WELLS)

No.	Name of the Village.	Net cultivated area of the village.	Area under wells irrigation	% to net cultivated area.	% to total well irrigated area
1.	2	3	4	5	6
1.	Chikhodra	315.79	218.64	69.91	14.39
2.	Sarghi	264.24	149.00	56.38	9.85
3.	Rajhodeli	211.86	102.14	48.21	6.76
4.	Simalghoda	92.85	38.41	41.36	2.54
5.	Kuberpura	62.56	22.15	35.40	1.46
6.	Songir	169.31	53.71	31.73	3.55
7.	Vatvatla	150.59	41.78	27.74	2.76
8.	Sarangpur	116.36	28.12	24.16	1.96
9.	Kosindra	457.90	110.33	24.09	7.30
10.	Kenakuwa	92.13	18.41	19.97	1.22
11.	Vajetha	249.04	47.19	18.95	3.12
12.	Vasna	599.87	100.97	16.83	6.68
13.	Savjipura	60.22	10.13	16.82	0.67
14.	Dasen	248.55	40.12	16.15	2.65
15.	Ramsari	136.01	20.80	15.19	1.38
16.	Indrol	421.26	50.69	12.03	3.35
17.	Kapadia	110.55	13.14	11.89	0.87
18.	Navagam	164.05	17.89	<u>10.36</u>	1.13
19.	Kachhata	177.67	17.20	9.68	1.13
20.	Sunderpura	119.96	10.12	8.43	0.67
21.	Jarwan	413.92	33.29	8.04	2.20
22.	Bhatpura	1037.92	82.17	7.94	5.43
23.	Khanwad	637.10	50.12	7.86	3.31
24.	Timbi	140.93	10.52	7.51	0.70
25.	Chorangla	217.09	15.14	6.97	1.00
26.	Pervata	771.95	53.10	6.87	3.51
27.	Timba	650.28	40.20	6.18	2.66
28.	Chhachhade	215.33	12.00	5.60	0.08



Map:23

2	3	4	5	6
29. Ramsingpura	63.80	3.19	5.00	0.21
30. Bhorde	315.55	14.10	4.46	0.93
31. Lachhnae	533.80	22.58	4.23	1.49
32. Penej	467.51	14.18	3.47	0.94
33. Chudhali	338.02	9.12	2.69	0.60
34. Sarsinda	506.36	13.75	2.71	0.91
35. Kadchhala	1269.01	29.39	2.3-	1.97.
Total of 52 villages	15,540.92	1,512.05	9.72.	

Remaining 17 villages do not have well irrigation in 1979.80

-engines were used but they are more costlier than electric pumps.

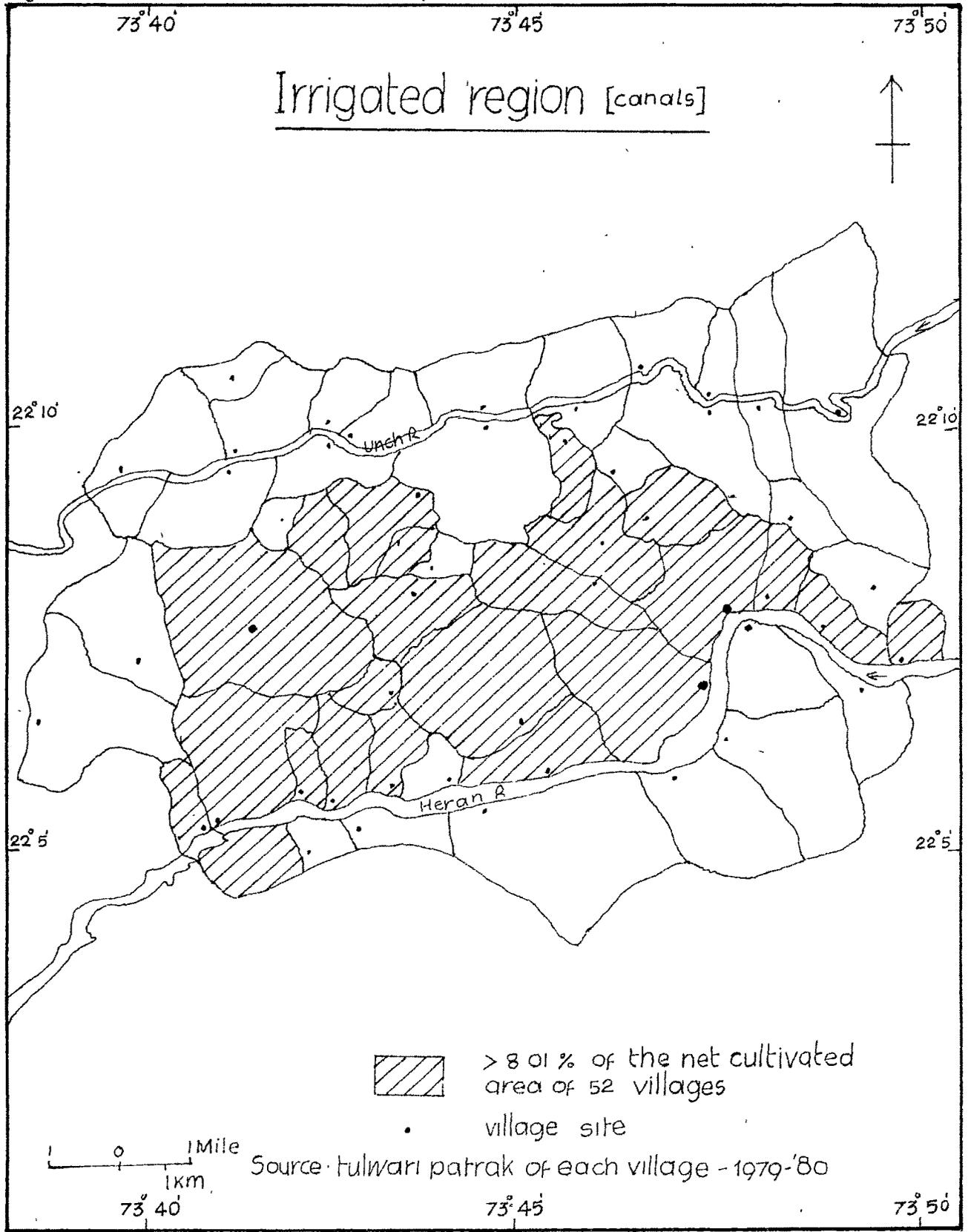
Well Irrigation-Map 23 : There are 35 villages irrigated by wells (1512.05 hectares or 9.72% of the net cultivated area of the 52 villages). It accounts for nearly 1/10 of the net cultivated area of the 52 villages (9.72%). In 18 of the 35 villages, the area irrigated by wells is above the 9.72% of the study area, these villages form two regions, the Eastern and the Western. The Eastern region comprises 10 villages with 798.97 hectares or 52.84% of the area irrigated by wells (5.14% of the net cultivated area of the 52 villages). The Patels (a community in Gujarat) of these villages are rich enough to have their own wells and pumping sets for irrigating their fields (Photo B) Both the central place villages of Kosindra and Vasma are included in this region. Chikhodra has the highest percentage of irrigation by wells (68.91%). It has a large area under banana which requires plenty of water. The three other villages irrigated largely by wells are Sarghi (56.36% of its cultivated area) Rajbodeli (48.21%) and Simalghoda (41.36%) In the first three villages Patels form the rich farming class. Simalghoda has a flat land and the landowners are from Kosindra and Rajbodeli.

ALE 11

Irrigated region (Canals)

No.	Name of the village	Net culti- vated area in hectares	Area under canal irri- gation	% to net cultiva- ted area	% to the total canal irrigated
1.	2	3	4	5	6
1.	Kharada	118.31	65.15	56.49	5.23
2.	Kosindre	487.99	204.77	44.72	16.44
3.	Vadadla	260.46	103.60	39.77	8.32
4.	Sanghi	264.24	71.63	27.11	5.75
5.	Vaena	599.87	156.61	26.10	12.57
6.	Kanakuva	92.13	22.25	24.15	1.79
7.	Ramsingpura	63.80	14.16	22.19	1.14
8.	Taleti	234.31	51.39	21.93	4.13
9.	Vagetha	249.04	53.01	21.28	4.26
10.	Indral	421.26	77.70	18.44	6.24
11.	Charangla	217.08	36.82	16.96	2.96
12.	Padvan	199.61	33.58	16.82	2.70
13.	Songir	169.31	28.32	16.71	2.27
14.	Amarpur	86.11	14.16	16.07	1.14
15.	Lechhree	533.80	78.31	14.71	6.30
16.	Ramsari	136.91	19.83	14.48	1.59
17.	Kapadia	110.55	14.97	13.54	1.20
18.	Vatvatia	150.59	18.21	12.09	1.46
19.	Rajhndeli	211.86	25.49	12.03	2.05
20.	Desan	248.35	29.54	11.89	2.37
21.	Bhatpur	1037.92	101.57	9.79	8.13
22.	Un	239.25	22.25	9.29	1.79
23.	Sarsinda	506.36	2.02	0.40	0.16
24.	Sarangpur	116.36	0.12	0.10	0.01
	Total of 52 villages.	15,540.92	1,245.66	8.01	

Remaining 28 villages do not have canal irrigation



Map 24

The Western region has only 282.85 hectares of land under well irrigation or 18.71% of the area irrigated by wells (1.82% of the net cultivated area of the 52 villages). The important villages which are under well irrigation are Kuberpura (35.40%) Songir (31.73%), Vutvatia (27.74%) and Sarangpur (24.16%). The landowners in these villages are Patels from Bhatpur and Songir. The landowners of the western region are comparatively poorer than the landowners of the eastern region. The water table in the east is also higher than in the west. Irrigation by wells is thus more in the eastern region.

Canal irrigation-Map 24: There are 24 villages which are irrigated by the Heron canal. It occupies 1245.56 hectares or 8.01% of the cultivated area of the 52 villages. Of these 22 villages have more than the percentage of canal irrigation in the 52 villages. Kharada has the highest percentage (56.29%) under canal irrigation because it is near the main canal. The main Heron canal passes through Kharada, Kosindra, Vasna, Taleti, Ramhari and Indral Songir. These villages have more than 18% of their area under canal irrigation. People use the canal irrigation water because of the low rates. (Rs.200/ per cotton in Kharif season, Rs.350.00 for cotton in rabi season, Rs.60.00 for wheat per hectare, Rs.60.00 for pulses per season per hectare, while by private wells it is Rs.20.00 per hour or Rs.2.00 per unit of electricity) The eastern villages benefit more by the canal irrigation than the western villages. Kosindra has 16.44% and Vasna 12.57 % of the total canal irrigated area of 24 villages. Irrigation and other facilities such as transport have made the western region concentrate more on commercial crops like Banana (Photo 7) and cotton.

Crop Regions :

An idea of regional concentration of different crops would help to assess the importance of the central places in relation to the crop regions. The traditional practice of cultivation all the necessary crops in a peasant's farm, prevents the emergence of clearcut regions. Yet the profits which certain crops bring to the farmer has had an impact on the crop regions of the study area.

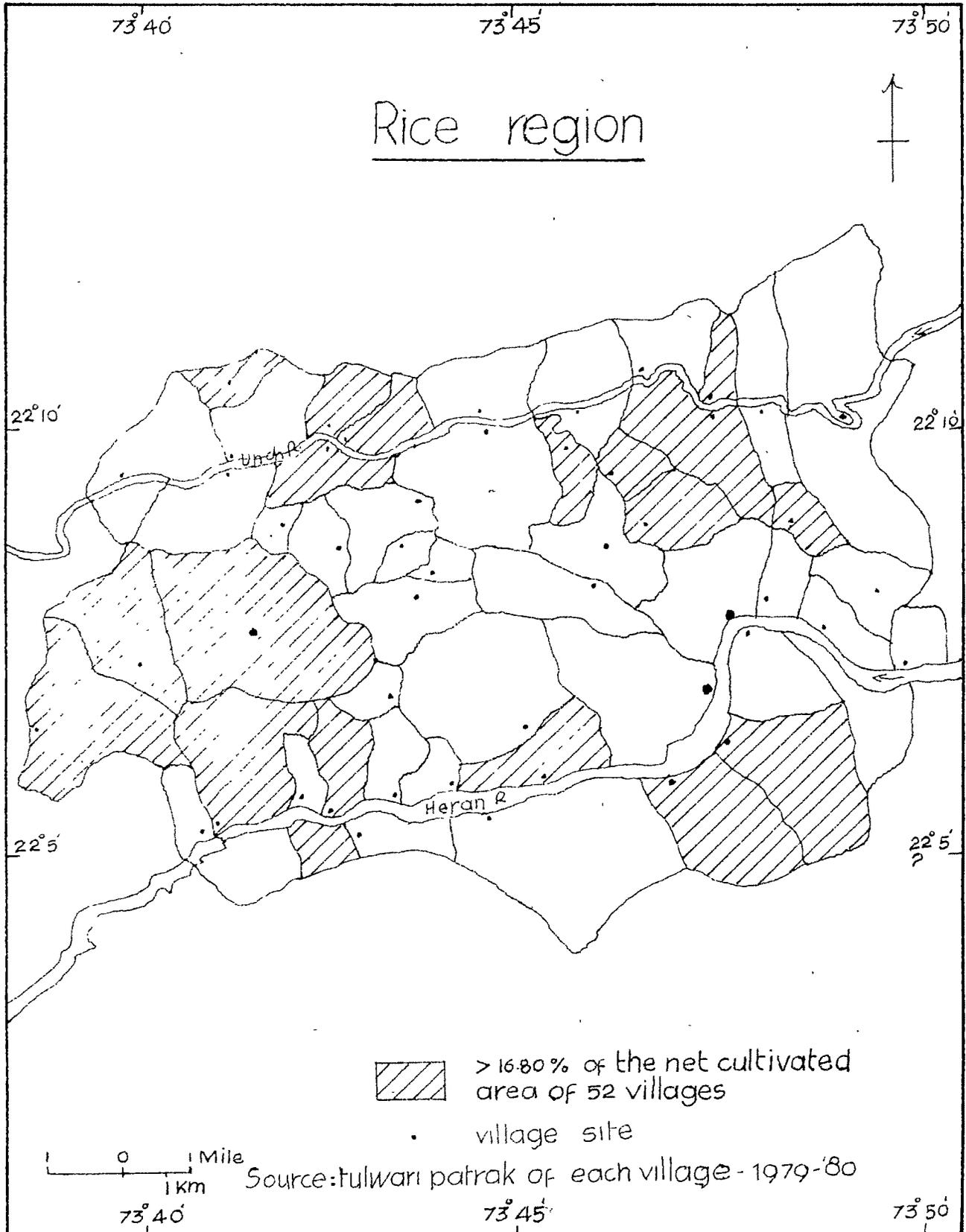
Rice region : Map.25

Rice is an important crop in the study area. It occupies 2612.06 hectares or 16.80% of the total net cultivated area in the 52 villages. But it is the 2nd most important crop in the study area. Its cultivation is however becoming popular in recent years because of its high price in the market and the low investment cost.

Bhatpur region :

Bhatpur is located in a rice growing area. Bhatpur itself has 22.59 percent of its cultivated area under rice. Besides there are 5 other villages surrounding Bhatpur which are growing rice. These are Timba (41.59%), Khunwad (39.25%) Kothiya (30.52%) Padwan (17.60%) and Indral (16.89%) It is the main cereal crop in these villages. These six villages together have 898.96 hectares under rice which forms 34.41% of the total area under rice and 5.76% of rice to net cultivated area of the 52 villages.

It is the most important crop in Timba, Khunwad and Kothiya because these villages do not have good facilities for irrigation. They follow the traditional pattern of cultivating the food crops necessary for the population. The landowning agriculturists in these villages mainly Patels while a large number of the labour force constitutes landless scheduled castes and tribals. In Kothiya where the scheduled castes form 85.29% of the population. The landowners are from Indral and Songir Patels. In Padwan they form 97.88% of the population but the Bhatpur landowning class have large land interests in that village (70.56%) Rice requires constant labour in the fields and the landless scheduled castes make up the labour force in most of the villages. In some of the villages the owners are themselves cultivators.



Map: 25

Table : 12

RICE REGION

No.	Name of the Village.	Net cultiv. area in hectares	Area under rice in hectares	% of rice to net cultivated area	% of rice to total area under rice in 52 villages.
1.	2	3	4	5	6
1.	Lunedra	406.30	210.27	52.74	8.04
2.	Deeran	248.35	122.27	49.23	4.68
3.	Kapadia	110.55	49.51	44.78	1.84
4.	Tambha	650.28	270.25	41.55	10.44
5.	Khunwad	637.18	250.10	39.25	9.62
6.	Deroli	222.72	78.28	35.14	2.99
7.	Pansj	407.51	130.86	32.11	8.00
8.	Kothiya	133.84	40.85	30.52	1.56
9.	Savjipura	60.22	16.85	27.98	0.64
10.	Anzoli	137.89	32.44	23.52	1.24
11.	Bhatpur	1037.92	231.40	22.59	8.85
12.	Goharpura	86.24	18.67	21.64	0.71
13.	Teleti	234.31	48.29	20.60	1.84
14.	Simalghoda	92.85	18.54	19.96	0.70
15.	Sinhadra	601.96	118.29	19.65	4.52
16.	Sunderpura	119.44	22.18	18.49	0.85
17.	Paduan	199.61	35.17	17.61	1.35
18.	Timbi	140.03	26.65	17.60	0.94
19.	Indral	421.26	71.19	16.89	2.72
20.	Amarpura	88.11	14.28	16.20	0.55
21.	Bhorda	315.55	47.75	15.13	1.82
22.	Parvata	771.95	110.71	14.34	4.23
23.	Sarsinda Chhachha	298.14	42.31	14.19	1.62
24.	Sarsinda	806.36	30.86	13.99	2.71
25.	Vadadia Charangla	298.87	39.17	13.10	1.50
26.	Songir	169.31	21.20	12.52	0.81
27.	Chhachhadra	215.33	26.22	12.17	1.00
28.	Kachhata	177.67	21.47	12.08	0.82
29.	Navagan	164.85	19.56	11.86	0.73
30.	Kanakuwa	92.13	10.12	10.98	0.39

	2	3	4	5	6
31	Un	239.25	23.19	9.69	0.89
32.	Kharada	115.31	10.63	0.21	0.41
33	Vadadia	260.46	21.78	8.36	0.83
34.	Kadoghala	1269.01	103.83	8.18	3.17
35	Vatvata	150.59	12.10	8.03	0.46
36.	Chudhali	338.02	26.95	7.97	1.03
37.	Jarvan	413.88	32.92	7.97	1.03
38.	Choranga	217.08	15.19	6.99	0.58
39.	Ghentoli	230.03	15.10	6.56	0.58
40	Khodia	190.24	12.19	6.38	0.47
41.	Vagetha	249.04	13.12	5.26	0.50
42.	Kubarpura	62.56	3.21	5.12	0.12
43.	Vaena	599.87	30.12	5.02	1.15
44	Sarangpur	116.36	5.82	5.00	0.22
45	Chikhodra	315.79	15.10	4.78	0.58
46.	Ramsari	136.91.	6.42	4.68	0.25
47.	Kosindra	457.90	20.31	4.43.	0.78
48.	Rajbodali	211.86	7.09	3.34	0.27
49.	Ramsingpura	63.80	2.11	3.30	0.08
50.	Sarghi	264.24	6.96	2.63	0.26
51.	Lachhrao	533.80	13.09	2.45	0.50
52.	Sardarpura	57.67	1.12	1.94	0.04
	Total	15,540.92	2,612.06	16.80	

Deroli Timbi region :

It is to the north of Bhatpur on either side of the river Unch. There are three villages in this area which cultivate rice comparatively extensively. They are Deroli 35.14%, Amroli 23.52% and Timbi 17.60%. These three villages have 135.37 hectares under rice cultivation which is 5.18% of the total area under rice in the 52 villages (0.87% of rice to net cultivated area of the 52 villages). In Deroli rice is the leading crop because only 14.57% of scheduled castes and tribes, the remaining people are Rajputs. In Amroli, it is the second important crop and in Timbi it occupies the third place among the crops cultivated. The people in these villages are mainly Rajputs and are small landowning cultivators. They grow rice for their own use. Because it is known locally as higher caste crop.

Sunderpura has 18.49% of its net cultivated area under rice. It is situated somewhat away from the main rice growing areas but like the three villages on the Unch river which cultivate rice, the population of Sunderpura consists mainly of Rajputs. They are small landowning cultivators who have not taken to commercial agriculture.

The neighbourhood of Bhatpur grows more rice than that of Kosindra and Vaena (grows on monsoon rain). Having emerged as a central place before Kosindra and Vaena with only in different transport facilities, it continued to grow the traditional food crops. The people in all the villages mentioned above are on the whole tradition bound and are comparatively poor to invest in cash crop like Banana, Sugarcane and cotton. Recently with the rise in price in the market for cereals these villages are reaching their products to the market and they are also finding it profitable to cultivate rice.

In none of these villages however does rice predominate over other crops in the study area to any great extent. If the contribution of these villages to the total area under rice in the 52 villages is considered Timbi has the highest share (10.44%) although in percentage of rice to its own net cultivated area is 41.44.

Lunadra Taleti Region :

There are only 3 villages in the neighbourhood of Vasna which can be considered rice growing villages that is Lunadra. (51.74%), Taleti (20.60%) and Sinhadra (19.65%) These three villages together have 376.63 hectares under rice which is 14.42% of the total area under rice in the 52 villages (2.47% of the net cultivated area in the study area). Vasna itself grows very little rice and depends on these villages. The farmers of Vasna own land in these villages. In Sinhadra 78.30% of net cultivated area, Lunadra 59.10% and in Taleti 22.68% are owned by cultivators from Vasna. In Lunadra and Taleti rice is the most important crop while in Sinhadra it follows as the second important crop after cotton.

None of these three villages however contribute much to the total rice area in the study area. Lunadra's share is about 8.04%. While Sinhadra and Taleti contribute only 4.52% and 1.84% respectively. Poor transport facilities and profits from commercial crops prevent the cultivation of rice to any great extent.

Desan Panej Region :

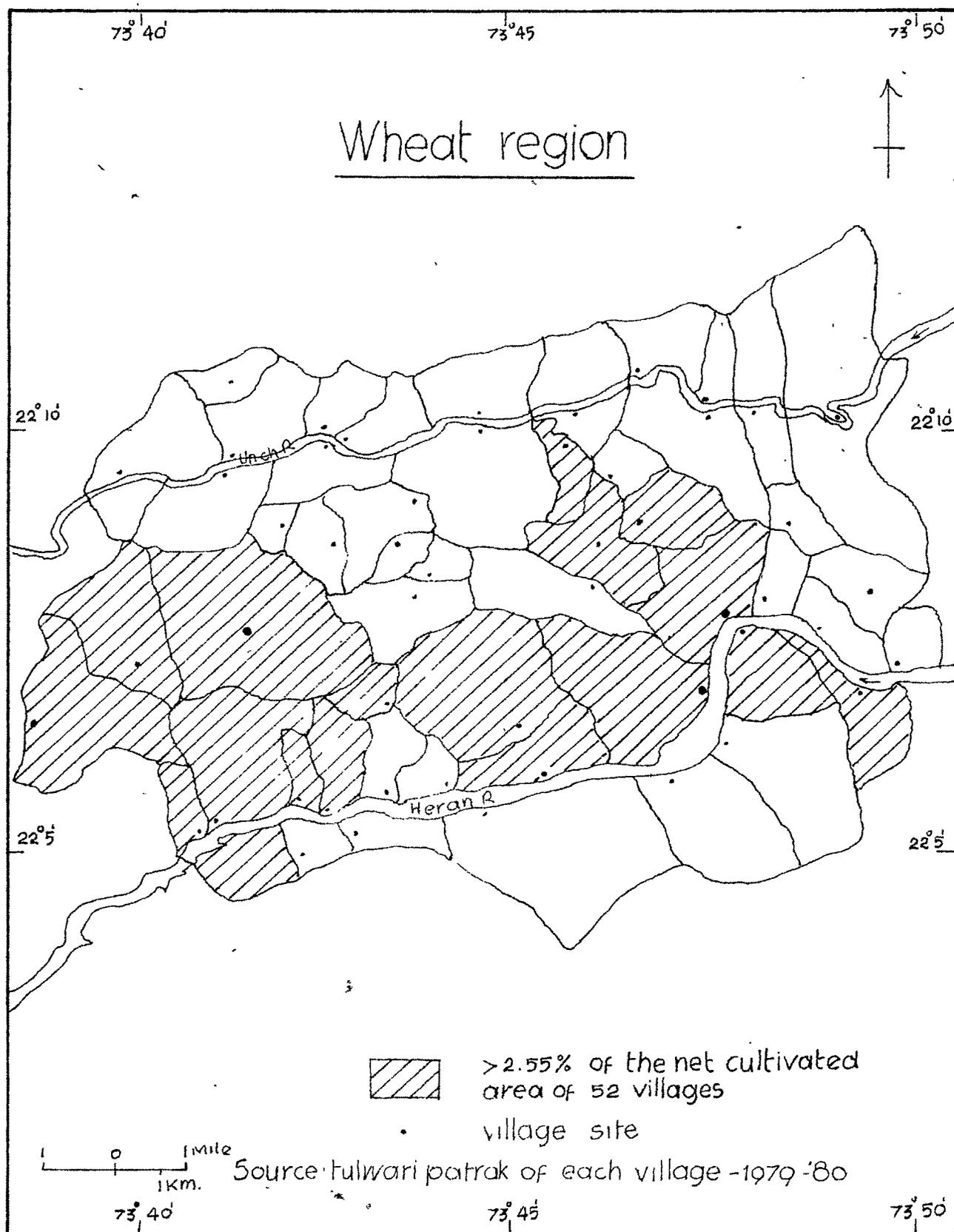
In the neighbourhood of Kosindra the villages cultivate more of Bajri, Jowar, Maize, cotton and some wheat. Kosindra itself has only 4.48% of its cultivated area under rice. But some of the villages on the banks of the river Unch to the north of Kosindra cultivate rice. Desan has 49.23% of the cultivated area under rice. Kapadia 44.78%, Panej 32.11%, Savjipura 27.98%, Geharpura 21.64% and Simalghoda 19.98%. These six villages together have 356.70 hectares under rice that is 13.65% of the total area under rice in the 52 villages and 2.29% of its cultivated area. It is the leading crop in all the villages. The land owners of Kosindra own land in some of these villages and they cultivate rice along with other crops 75.66% of the cultivated land in Simalghoda, 32.28% in Desan, 18.91% in Savjipura and 12.46% in Panej are owned by the farmers of Kosindra.

Source : Land revenue record book of each village (1979-80)

WHEAT REGION : MAP 26

Wheat occupies only 390.66 hectares or 2.55% of the netcultivated area of the 52 villages. It is a crop newly introduced into area since 1960s. The Hegan canal and the availability of well irrigation in some villages has facilitated the cultivation of wheat. It is a winter crop and can be grown only if irrigation is available. It is generally a cereal used by the higher castes. The scheduled castes and tribes use it only on feast days. Hence it is grown mostly in the villages where land is owned by the higher castes and irrigation is available. For purposes of convenience the wheat growing villages can be divided into two regions, one surrounding Bhatpur and other Kaindra and Vasna although merge into one another in vicinity of Lachras & Kanakuwa.

Bhatpur, Khunwad, Paduan region; Bhatpur is located in wheat growing area. Bhatpur itself has 7.71% of its cultivated area under wheat. Besides there are 7 other villages surrounding Bhatpur which are growing wheat. These are Amarpur (14.13%), Indral (6.68%), Songir (5.96%), Padvan (5.06%), Kanakuwa (4.47%), Khunwad (3.94%), and Timba (3.26%). These 8 villages together have 191.36 hectares under wheat which forms 48.98% of the total area under wheat and 1.23% of wheat to net cultivated area of the 52 villages. Of these wheat forms the 2nd important crop in Kanakuwa. Although 99.33% of people belong to scheduled castes and tribes, but 65.76% of its land is owned by the farmers of Bhatpur, Songir and Timba. Majority of the population in these villages is made up of Patel community (higher caste). While in Paduan, Amarpur, Indral and Khunwad it is the 4th important crop. Khunwad, Timba have private well irrigation facilities.



Map: 26

TABLE 13

WHEAT REGION

no.	Name of the villages.	Net cultivated area in hectares.	Area under wheat in hectares	% of wheat to net cultivated area	% of wheat to total area under wheat in 52 villages.
1.	2	3	4	5	6
1.	Amazpura	88.11	12.45	14.13	3.19
2.	Sanghi	264.24	22.17	8.39	5.67
3.	Talsti	234.31	19.60	8.36	5.01
4.	Bhatpur	1037.92	80.10	7.71	20.50
5.	Kosindra	457.90	33.57	7.33	8.59
6.	Indral	421.26	28.15	6.68	7.21
7.	Vasna	599.87	38.92	6.48	9.97
8.	Songir	169.31	10.10	5.96	2.59
9.	Dasan	248.35	13.18	5.06	3.37
10.	Paduan	199.61	10.12	5.06	2.59
11.	Kapodia	110.95	5.10	4.62	1.31
12.	Kanakuwa	92.13	4.12	4.47	1.05
13.	Khanwad	637.18	25.12	3.94	6.43
14.	Navagam	164.85	5.51	3.34	1.41
15.	Timba	650.28	21.20	3.26	5.43
16.	Chikhodra	315.79	10.19	3.22	2.60
17.	Lachhree	533.80	16.25	3.04	4.16
18.	Chorangle	217.08	5.12	2.35	1.31
19.	Rajbodoli	211.86	3.91	1.84	1.00
20.	Kadchhala	1269.01	17.17	1.35	4.39
21.	Wagetha	249.04	3.10	1.24	0.79
22.	Un	239.25	2.71	1.13	0.17
23.	Bhorda	316.55	2.80	0.88	0.72
Total		15,540.92	390.66	2.55	

Remaining 29 villages do not grow wheat in 1979-80

While the other villages get their water from the Heran Canal, which was constructed in 1957-58. Well irrigation in some villages came due to the electrification of the villages in the 1970s.

If the contribution of these villages to the total area under wheat in the 52 villages is considered Bhatpur has the highest share (20.50%) although the percentage of wheat to its own netcultivated area is only 7.71%. Indral and Khunwad have the 4th and 5th place respectively to the total area under wheat in the 52 villages.

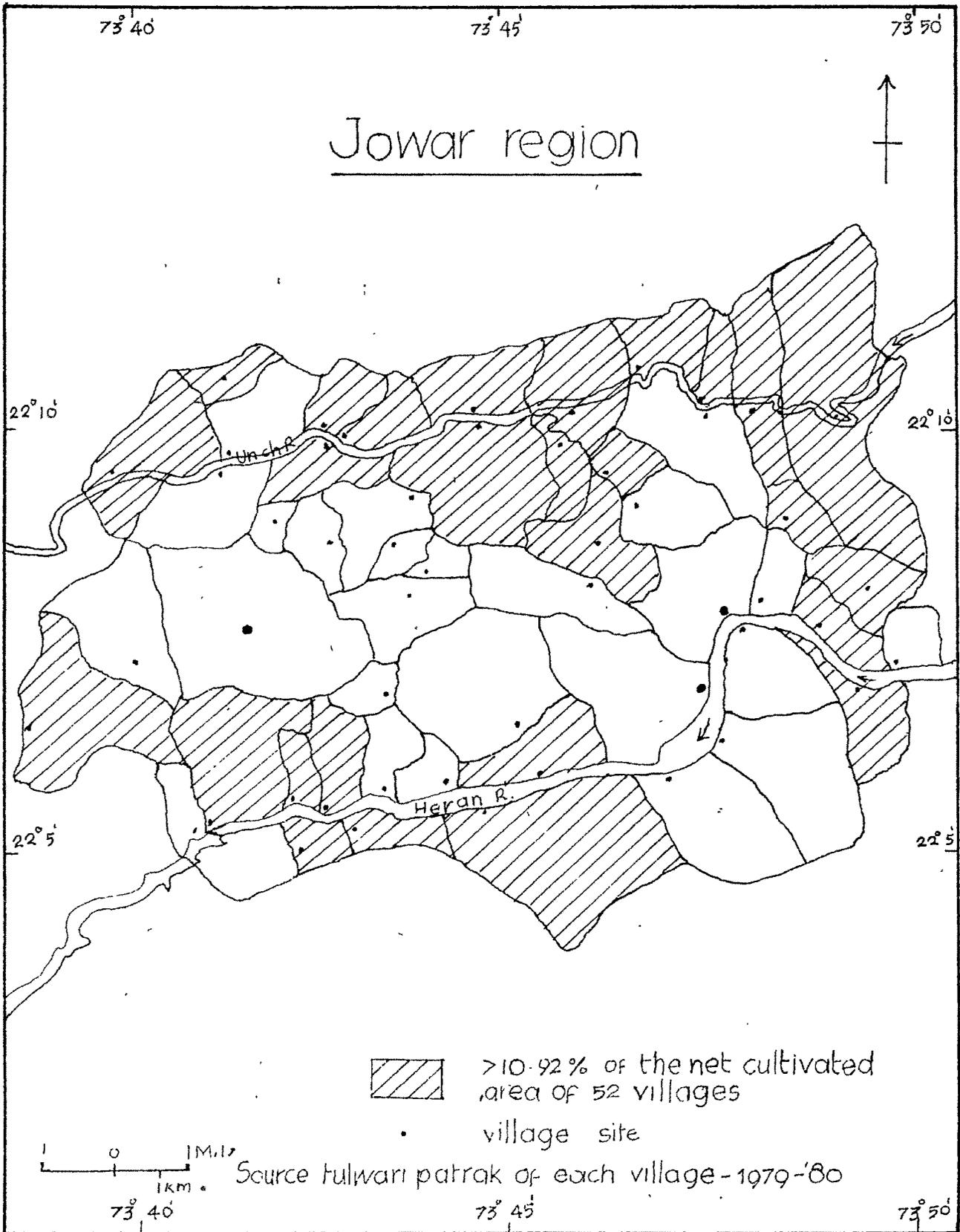
Kosindra, Vasna, Chikodra region, Kosindra and Vasna are also located in a wheat growing area. Kosindra itself has 7.33% and Vasna has 6.40% of their netcultivated area under wheat. Besides there are 7 other villages surrounding Kosindra and Vasna which grow wheat more than the percentage of wheat for the study area. There are Sarghi (8.39%), Talati (8.36%), Desan (5.30%), Kapadia (4.51%), Navagam (3.34%), Chikhodra (3.22%), and Lachhras (3.04%). These 9 villages together have 164.49 hectares under wheat which forms 42.10% of the total area under wheat and 1.05% of wheat to netcultivated area of the 52 villages. Of these wheat forms the 2nd most important crop in Kosindra, Vasna, Lachhars, Sarghi and Desan. While 4th important crop in Navagam and Talati and the sixth crop in Kapadia.

If the contribution of these villages to the total area under wheat in the 52 villages is considered Vasna the 2nd important village, Kosindra the 3rd and Sarghi is the sixth important village. They are all villages where the farmers are mainly of Patil community.

JOWAR REGION : MAP 27

Jowar is the third important crop in the study area. It occupies 1647.36 hectares or 10.92% of the total net cultivated area in the 52 villages. Like maize it is one of the staple foods of the scheduled castes and tribes. The villages which cultivate it to an extent above the percentage of Jowar of 52 villages in the study area as a whole area are situated away from the three central place villages. They are generally on the banks of the rivers Unch and Heran. The rivers have cut deep ravines and gullies in the villages, as a result the land is poor. The transport facilities available to these villages are very inadequate. They are also mainly villages inhabited by the scheduled castes and tribes.

North eastern region : All the 10 villages along the northern bank of the river Unch has a substantial area under jowar to be included in the jowar region. This north eastern region of jowar extends to the south of the river to include 5 more villages and also to the east of Kosindra and Vasna including within the region and another 4 villages. These 19 villages are Navagam (40.13%), Khodia (31.60%), Sunderpura (26.58%), Kadchhale (21.95%), Geharpura (20.98%), Chhachhadra (18.77%), Timbi (17.93%), Simalghoda (16.86%), Savjipura (16.80%), Vadadla chorangla (16.79%), Amroli (15.30%), Rajbodeli (14.69%), Sarsinda (13.84%), Sarsinda Chhachha (12.78%), Chudheli (13.00%), Deroli (12.49%), Bhorda (12.26%), Sarghi (11.99%) and Kapadia (11.02%). These 19 villages together have 910.84 hectares under jowar which forms 53.66% of the total area under jowar in 52 villages (5.86%) of jowar to net cultivated area of 52 villages. It is the 1st important crop in Sarsindra, Navagam, Khodia, Kadchhala and Sunderpura. It is the 2nd important crop in Sarsinda chhachha, Timbi, Vadadla Chorangla, Kapadia, Sarghi, Chhachhadra, Geharpura, Chudheli and Rajbodeli. And it is third important crop of Amroli, Sarsinda, Simalghoda and Bhorda. And the fourth important crop in Savjipura and Deroli. It is grown mainly for scheduled castes and tribes, in Simalghoda 100.00%, Geharpura 100.00%, Savjipura 95.05%, Sarsinda chhachha 80.17%, Sarsinda 77.53%, Khodia 76.09%, Navagam 65.17%, Sarghi 62.27%, Amroli 48.13%, Kapadia 40.57%, Kadchhale 39.58%, Chudheli 38.81%, Rajbodeli 38.31%, Bhorda 36.40%, Vadadla Chorangla 36.08%, Chhachhadra 35.98%, Timbi 29.44%, Sunderpura 29.05% and Deroli 14.57%.



Map 27

14

Jowhar region

No.	Name of the villages.	Net cultivated area in hectares.	Area under jowhar in hectares.	% of jowhar to net culti. vated area	% of jowhar to total area under jowhar in 52 village
1.	2	3	4	5	6
1.	Navagam	164.85	66.17	40.13	3.90
2.	Khodia	190.24	59.77	31.60	3.52
3.	Amarpura	88.11	19.45	33.08	1.72
4.	Sunderpura	119.94	31.89	26.58	1.88
5.	Kadchhala	1269.01	278.56	21.95	16.41
6.	Geharpura	86.14	18.10	20.98	1.07
7.	Padvan	199.61	41.61	20.84	2.45
8.	Kothiya	133.84	25.15	18.79	1.48
9.	Chhachhadra	215.33	40.42	18.77	2.38
10.	Timbi	140.03	25.12	17.93	1.48
11.	Simalghoda	92.85	15.68	16.86	0.92
12.	Savjipura	60.22	10.12	16.80	0.59
13.	Vadadia Chorangle	298.87	50.19	16.79	2.96
14.	Purvata	771.95	126.58	16.39	7.46
15.	Anzoli	137.89	21.10	15.30	1.24
16.	Rajbodali	211.86	31.13	14.69	1.83
17.	Ghentoli	230.03	32.76	14.24	1.93
18.	Sarsinda	506.36	70.12	13.84	4.13
19.	Taloti	234.31	32.15	13.72	1.90
20.	Chudhali	338.02	43.95	13.00	2.59
21.	Sarsinda Chhachha	298.14	38.12	12.78	2.25
22.	Deroli	222.72	27.82	12.49	1.64
23.	Bhorda	315.55	28.69	12.26	2.28
24.	Indral	421.26	51.00	12.10	3.00
25.	Sarghi	264.26	31.70	11.99	1.87
26.	Kepadia	110.55	12.19	11.02	0.72
27.	Khunwad	637.18	70.12	11.00	4.13
28.	Kachhata	1269.01	19.12	10.76	16.41
29.	Lundadra	406.32	42.17	10.37	2.48
30.	Jarwan	413.88	42.60	10.29	2.51

	2	3	4	5	6
31. Kanakua		92.13	6.10	6.79	0.48
32. Panaj		407.51	32.18	7.89	1.90
33. Deean		248.35	19.09	7.68	1.12
34. Un		239.25	18.12	7.57	1.07
35. Songir		169.31	12.15	7.17	0.72
36. Timba		650.28	42.02	6.46	2.48
37. Bhatpur		1037.92	60.70	5.54	3.58
38. Khareda		115.31	6.13	5.31	0.36
39. Ramasingpura		63.80	3.12	4.89	0.18
40. Kuborpura		62.56	30.04	4.85	0.18
41. Sinhedra		601.96	26.10	4.33	1.54
42. Vadedla		260.46	10.56	4.05	0.62
43. Chorangla		217.06	7.80	3.59	0.46
44. Vatvatis		150.59	4.10	2.71	0.24
45. Ramseri		136.91	3.02	2.20	0.18
46. Lachheras		533.80	10.32	1.93	0.60
47. Sarangpur		116.36	2.14	1.83	0.13
48. Sardarpura		57.67	1.10	1.90	0.06
49. Vagatha		269.04	4.32	1.73	0.25
50. Chikhodra		315.79	-	-	-
51. Vaans		599.87	-	-	-
52. Koeindra		457.90	-	-	-
Total		15,540.92	1,697.36	10.92	

If the contribution of these villages to the total area under Jowar in the 52 villages is considered Kadchhale has the highest share (16.41%) although its percentage of Jowar to its own netcultivated area is 21.95%. The second highest share 4.13% in this region is in Sassinda.

South eastern region - The other Jowar region is to the south and east of Bhatpur, which includes 8 villages. They are Amarpura (33.08%), Paduan (20.84%), Kothiya (18.79%), Parvata (16.39%), Ghentoli (14.24%), Taleti (13.72%), Indral (12.10%), and Khunwad (11.00%). These 8 villages together have 408.52 hectares under Jowar which forms 24.07% of the total area under Jowar in the 52 villages (2.63% of Jowar to netcultivated area of 52 villages). It is the first important crop in Amarpura and Paduan. It is the 2nd important crop in Khunwad, Ghentoli, Taleti and Parvata. And third important crop in Indral and Kothiya. In these villages the scheduled castes and tribes form a high proportion (more than 44%) in the total population.

If the contribution of these villages to the total area under Jowar in the 52 villages is considered Parvata has the highest share (37.46%) in this region, although its percentage of Jowar to its own netcultivated area is 16.39. The second highest percentage (3.00) is in Indral.

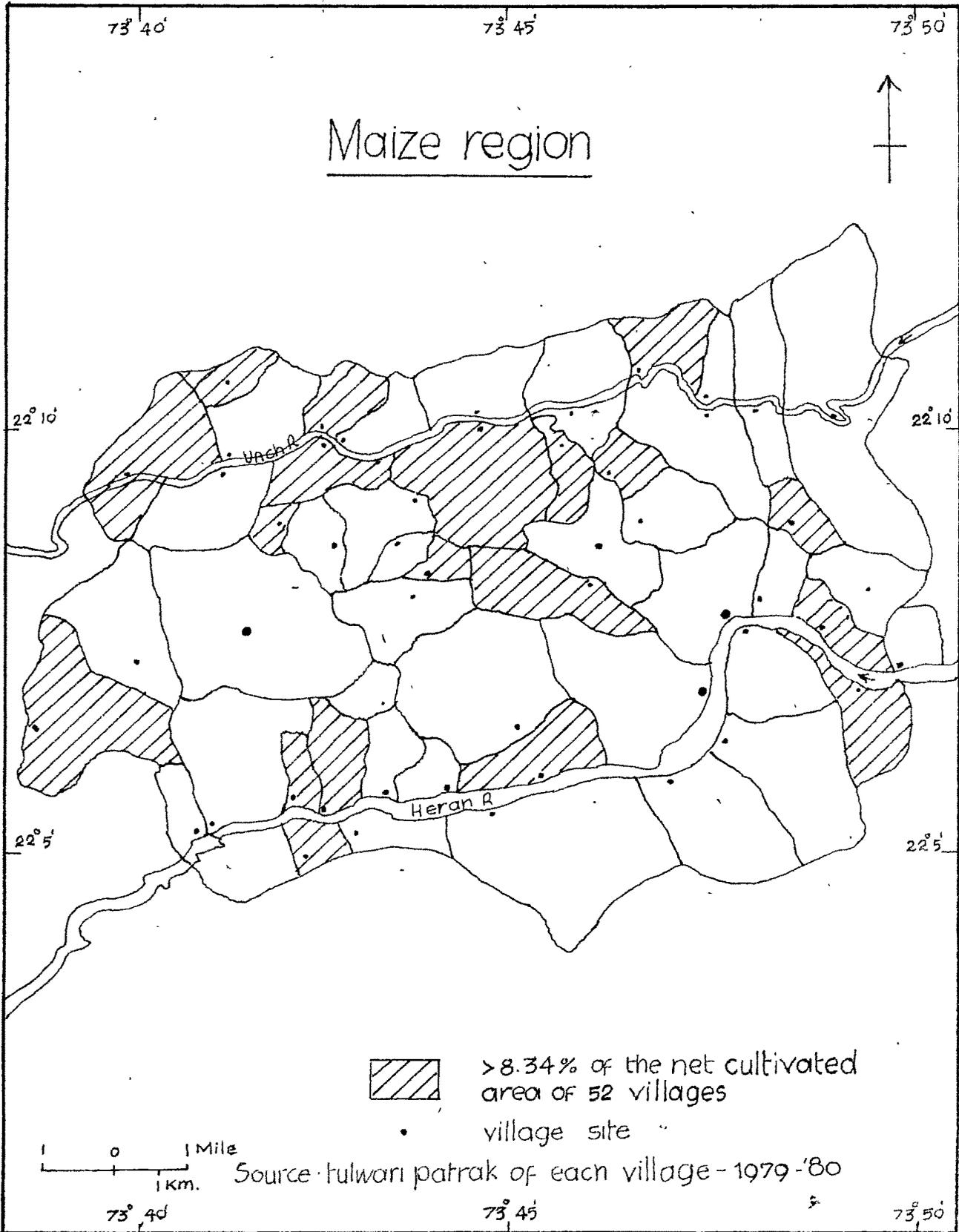
MAIZE REGION: Map 28

Maize cultivation is beginning to be popular in the study area because of its high prices in the market, low investment cost, failure of cotton crop and the short period it takes to mature. It is a crop which brings to the farmer, money in September-October when he requires it. It is the staple food of the scheduled castes and tribes. But it still occupies only 1297.33 hectares or 8.34% of the net cultivated area in the 52 villages.

Vadadla Khodia region : Of the 19 villages which have a higher percentage of area under maize than that for the study area as a whole only Vadadla has a substantial area under maize. 210.18 hectares or 80.69% of its net cultivated area is devoted to maize. It contributes 16.20% of the total area under maize in the 52 villages (1.35% of maize to net cultivated area of the 52 villages) 65.04% of its population belong to the scheduled castes and tribes. Vadadla is situated near Vasna and Kosindra. 20.01% of its net cultivated area are owned by the farmers of Kosindra and 14.36% by those of Vasna. But much of the maize is grown for the labourers in the field. Their daily wages are paid partly in maize or jowar.

Around Vadadla there are four villages which cultivate maize to some extent namely Savjipura 21.78%, Sarinda 17.00%, Sardarpura 14.06% and Kapedia 9.25%. These four villages and Vadadla together have 198.23 hectares under maize which forms 15.22% of the total area under maize in the 52 villages (1.27 of maize to the total net cultivated area). They are all accessible to Kosindra and Vasna by metalled roads and cart tracks. These villages are under the influence of both these central villages.

Khodia is an isolated village north of the river Unch which has 22.07% of its net cultivated area under maize. Although separated from Kosindra and Vasna by the river it is accessible to these central place villages 76.09% of its population is scheduled castes and tribes and most of the maize is grown for village consumption. The farmers of Kosindra and Vasna do not own any land in this village.



Map: 28

TABLE 15 : MAIZE REGION

Villages	Net Cult. area in hectares.	Area Under maize in hectares	% of Maize to net cult. area.	% of Maize to total area under maize in 52 villey
1.	2	3	4	5
1. Vadedla	260.46	210.18	80.69	16.20
2. Kubarpura	62.56	15.10	24.13	1.16
3. Navagam	164.65	39.56	23.99	3.04
4. Kothiya	183.84	30.10	22.48	2.32
5. Khedia	190.24	42.12	22.07	3.25
6. Sevjiपुरा	60.22	13.12	21.78	1.01
7. Padwan	199.61	40.18	20.12	3.10
8. Amerपुरा	80.11	16.18	18.36	1.25
9. Sunderपुरा	119.94	21.10	17.54	1.63
10. Sarsinda	506.36	89.12	17.00	6.64
11. Deroli	222.72	36.12	16.12	2.78
12. Timbi	140.03	20.15	14.38	1.55
13. Sardarpura	57.67	8.12	14.08	0.62
14. Simalghoda	92.85	10.53	11.36	0.81
15. Sarsinda Chbachha	298.14	31.10	10.43	2.40
16. Khunwad	633.18	62.18	9.82	4.79
17. Kapadia	110.55	10.18	9.21	0.78
18. Talati	234.31	21.56	9.20	1.66
19. Rajbodeli	211.86	16.50	8.73	1.43
20. Chorangla	217.08	10.13	7.97	0.77
21. Chudheli	338.02	26.63	7.93	2.07
22. Parvata	771.95	61.10	7.91	4.77
23. Bhorda	315.55	24.54	7.78	1.89
24. Amroli	137.89	10.12	7.34	0.77
25. Un	239.25	17.19	7.18	1.32
26. Desan	248.35	17.12	6.89	1.31
27. Bhatpur	1037.92	71.40	6.88	6.50
28. Pamej	407.51	25.92	6.36	2.00
29. Serghi	264.24	16.72	6.32	1.29
30. Geharpura	86.24	5.32	6.17	0.41

1.	2	3	4	5
31. Kadchhala	1269.01	77.50	6.10	5.98
32. Lunadra	406.32	23.16	5.70	1.79
33. Songir	164.31	9.05	5.35	0.70
34. Khareda	115.31	6.13	5.32	0.47
35. Ghantoli	230.03	11.15	4.85	0.86
36. Vedadia Chorangle	298.87	14.18	4.74	1.09
37. Timba	650.28	30.18	4.63	2.32
38. Kanakuu	52.13	4.27	4.63	0.33
39. Kachhete	177.67	8.19	4.61	0.63
40. Vesna	599.87	24.02	4.00	1.85
41. Srangpur	118.36	4.18	3.59	0.32
42. Indral	421.26	15.10	3.58	1.16
43. Vatvatia	150.59	8.21	3.46	0.41
44. Remsingpura	63.80	2.10	3.29	0.16
45. Remsari	136.91	4.12	3.00	0.31
46. Lechhres	533.80	12.14	2.27	0.94
47. Sinhadra	601.96	13.10	2.18	1.01
48. Jarvan	413.88	8.21	1.98	0.63
49. Vagotha	249.04	4.19	1.68	0.32
50. Chhachhadra	215.33	2.58	1.20	0.20
Total	15540.93	1257.33	8.34	

Remaining two villages do not grow maize in 1979.80

Navagam Rajbodali Region : Three villages to the east of Kosindra and Vasna namely Navagam, Simalghoda and Rajbodali also grow maize to the extent of 23.9%, 11.36% and 8.73% respectively. Simalghoda, slightly separated from the other two lies to the northwest of Rajbodali. These three villages together have 68.58 hectares under maize which forms 5.28% of the total area under maize in 52 villages (0.44% of maize to the total net cultivated area). Of these Rajbodali is mainly a Patel community people where maize is grown for the labourers. In Simalghoda 75.66% of the net cultivated area is owned by the farmers of Kosindra and all its population belong to scheduled castes while in Navagam the scheduled castes forms 65.17% of the total population. They are small land owning cultivators growing maize for local consumption.

Talati to the west of Vasna grows maize to the extent of 9.20% of the net cultivated area. Its contribution to the total maize area in the study region is only 1.66%, 22.68% of its cultivated area is owned by Vasna farmers.

Kuberpara Timbi Region : To the north of Bhatpur there are 5 villages, Kuberpara (24.13%), Sunderpara (17.54%), Deroli (16.12%), Timbi (14.38%) and Sersinda Chhechha (10.43%) included in the maize region. These five villages together have 123.57% hectares under maize which forms 9.52% of the total area under maize in the study area (0.79% of maize to net cultivated area of the 52 villages). They are villages inhabited mainly by scheduled castes and tribes. All the population of Kuberpara belong to the scheduled castes and tribes. The people of these villages are poor, they are not able to invest in cotton cultivation. Even water facilities are not available to these villages. In Kuberpara 89.06% of its cultivated area is owned by the Bhatpur's Patels. It is also a staple food of the people of these villages.

To the south of Bhatpur there are three villages Kothiya (22.48%), Paduan (20.12%) and Amarpura (18.36%) which grow maize and are included in the maize region. These three villages together have 86.46 hectares under maize which forms 6.66% of the total area under maize in the study area (0.55% of maize to net cultivated area of the 52 villages). Almost all people of these villages are of scheduled castes and tribes. So nearly 1/5 of their net cultivated area is under maize cultivation as it is their staple food.

To the west of Bhatpur, the isolated village of Khonwad (9.25%) where the percentage of area under maize to net cultivated area is more than that of the study area. The scheduled castes and tribes have account for 46.88%.

Two villages in the study area namely Chikhodra and Kosindra do not grow maize. They have more area under cash crops. In Chikhodra 59.35% of its net cultivated area is under Banana and 31.79% under cotton. While in Kosindra 22.90% of its net cultivated area is under banana and 59.54% under cotton. In Chikhodra there is a lift and well irrigation while Kosindra has the facility of both canal and well irrigation.



Pulse Region : Map 29

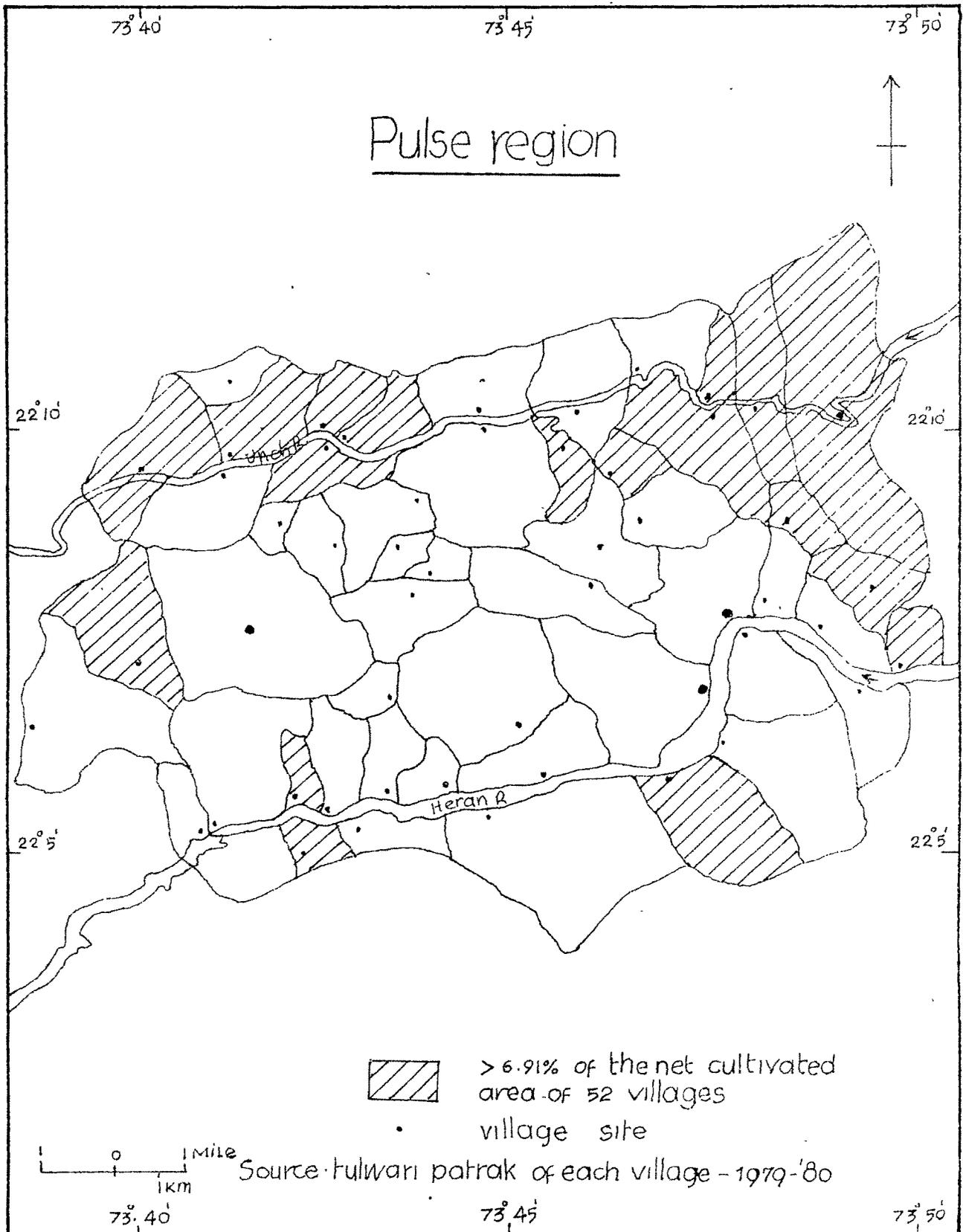
Almost all the villages of the study area grow pulses. It is mainly grown for consumption in the village itself. The main pulses are Tur, Mung, Aded and Math. They occupy 1074.45 hectares or 6.91% of the net cultivated area of the 52 villages. It does not require much investment, irrigation facilities or pesticides. Recently pulses have begun to fetch high prices in the market and they are grown also for commercial purposes.

Savjipura Kadchhala region : To the north and east of Koeindra there is a large region growing pulses comprising Savjipura (19.61%) Kadchhala (17.77%) Simalghoda (16.99%) Un (15.69%), Panaj (12.48%) Bhorda (12.27%) Kapadia (11.01%) Geharpura (9.06%) and Chudhali (8.29%) These 9 villages together have 427.95 hectares under pulses which forms 39.82% of the total area under pulses in the 52 villages (2.75% of pulses to net cultivated area of the 52 villages) Of these pulses form the 2nd most important crop in 5 villages. They are Panaj, Kadchhala, Simalghoda, Bhorda and Un. While in Savjipura, Kapadia and Geharpura it is the 3rd important crop. In Chudhali it occupies only the 4th place amongst the cultivated crop.

75.66% of the net cultivated area in Simalghoda, 18.91% in Savjipura, 17.96% in Chudhali, 16.03% in Bhorda and 12.46% in Panaj net cultivated area are owned by the farmers of the Koeindra and they cultivate pulses in these villages because irrigation is not necessary for pulse cultivation. The local people of these villages also prefer to grow pulses because it is a daily item of food.

None of these villages contribute largely to the total area under pulses in the study area. If the contribution of these villages to the total area under pulses in the 52 villages is considered Kadchhala has the highest share (20.99%) although its percentage of pulses to its own net cultivated area is only 17.77 This is due to poor transport facilities for growing this crop. The people of the village are poor and are not able to invest in cash crops.

Amroli Deroli Region : North of Bhatpur, there are five villages which cultivate pulses to some extent namely Amroli, (26.47%), Deroli (23.94%) Timbi (20.68%) Samsinda Chhachha (12.93%) and Kachhata (8.74%) These five



Map 29

Table 16

PULSE REGION.

No.	Name of the village.	Net cultivated area in hectares.	Area under pulses in hectares	% of pulses to net cultivated area	% of pulses to total area under pulses in 52 villages.
1	2	3	4	5	6
1.	Amroli	137.89	36.50	26.47	3.39
2.	Deroli	222.72	53.34	23.94	4.95
3.	Timbi	140.03	28.97	20.68	2.69
4.	Savjipura	60.22	11.81	19.61	1.09
5.	Kadchhala	1269.01	225.59	17.17	20.99
6.	Simalghoda	92.85	15.78	16.99	1.46
7.	Un	239.25	37.94	15.69	3.49
8.	Amarpura	88.11	13.23	15.01	1.23
9.	Sarsinda Chhachha	298.14	38.56	12.93	3.58
10.	Kothiya	133.84	17.07	12.75	1.58
11.	Panej	407.51	50.88	12.48	4.73
12.	Bhorda	315.55	38.73	12.27	3.60
13.	Kapadia	110.55	12.18	11.01	1.12
14.	Lunadra	406.32	40.44	9.95	40.44
15.	Geharpura	86.24	7.82	9.06	0.72
16.	Kachhata	177.67	15.53	8.74	1.44
17.	Timba	650.28	54.81	8.40	5.09
18.	Chudheli	338.02	27.62	8.29	2.56
19.	Vadadia Chorangia	298.87	20.31	6.79	2.00
20.	Jarwan	413.88	27.01	6.52	2.51
21.	Kuberpura	62.56	3.92	6.26	0.36
22.	Vasna	599.87	36.46	6.08	3.38
23.	Kanakuwa	92.13	5.29	5.74	0.49
24.	Chhachhadra	215.33	12.26	5.70	1.13
25.	Sinhadra	601.96	33.97	5.64	2.15
26.	Navagam	164.85	9.09	5.51	0.84
27.	Vatvatia	150.59	7.31	4.85	0.68
28.	Rajbodeli	211.86	10.13	4.78	0.94
29.	Khareda	115.31	4.97	4.31	0.46
30.	Taleti	234.31	10.12	4.31	0.94
31.	Indral	421.26	16.52	3.92	1.53

1	2	3	4	5	6
32.	Chorangla	217.08	8.33	3.83	0.77
33.	Sardarpura	57.67	2.21	3.83	0.20
34.	Padwan	199.61	7.60	3.80	0.70
35.	Vadadia	260.46	9.73	3.73	0.90
36.	Ramsingpura	63.80	1.94	3.04	0.18
37.	Desan	248.35	7.18	2.89	0.67
38.	Lachhras	533.80	14.94	2.79	1.38
39.	Sarsinda	506.36	13.23	2.61	1.23
40.	Khunwad	637.18	15.74	2.47	1.46
41.	Kosindra	457.90	10.15	2.21	0.94
42.	Ghantoli	230.03	5.06	2.19	0.47
43.	Parwata	771.95	20.54	2.16	2.10
44.	Khodia	190.24	4.00	2.09	0.37
45.	Sarghi	264.24	5.01	1.89	0.47
46.	Ramsari	136.91	2.57	1.87	0.23
47.	Songir	169.31	2.52	1.48	0.23
48.	Bhatpur	1037.52	12.90	1.24	1.19
49.	Sarangpur	116.36	1.42	1.22	0.13
50.	Sunderpura	119.94	1.17	0.97	0.10
51.	Vagetha	249.04	1.72	0.69	0.15
52.	Chikhodra	315.79	2.73	0.86	0.25
	Total	15,540.92	1,074.45	6.91	

villages have 172.90 hectares under pulse cultivation, which is 16.09% of the total area under rice in the 52 villages of the study (1.11% to the net cultivated area of the 52 villages). It is the second important pulse growing region in the study area. In three of these villages, pulses form the most important crop, they are Sarasinda Chhachha, Amroli, and Timbi while in Kachhate and Doroli it is the second most important crop.

To the south of Bhatpur there are two villages namely Amarapura (15.01%) and Kothiya (12.73%) included in the pulse region. These two villages have 30.26 hectares under pulse cultivation, which is 2.81% of the total area under pulse in the 52 villages of the study area or these two villages together have 0.19% of pulse to net cultivated area of the 52 villages. The landowners are from Indral, Songir and they grow this crop for consumption.

To the west of Bhatpur, Timba (8.40%) is included in the pulse region. The majority of the people belong to Patel community.

To the south of Vasna, Lunadra (9.95%) is included in the pulse region. It has no irrigation facilities. 59.10% of its net cultivated area are owned by the farmers of the Vasna, who are Patels. They prefer to grow the pulses for their own requirements.

CASH CROP REGION MAP-30

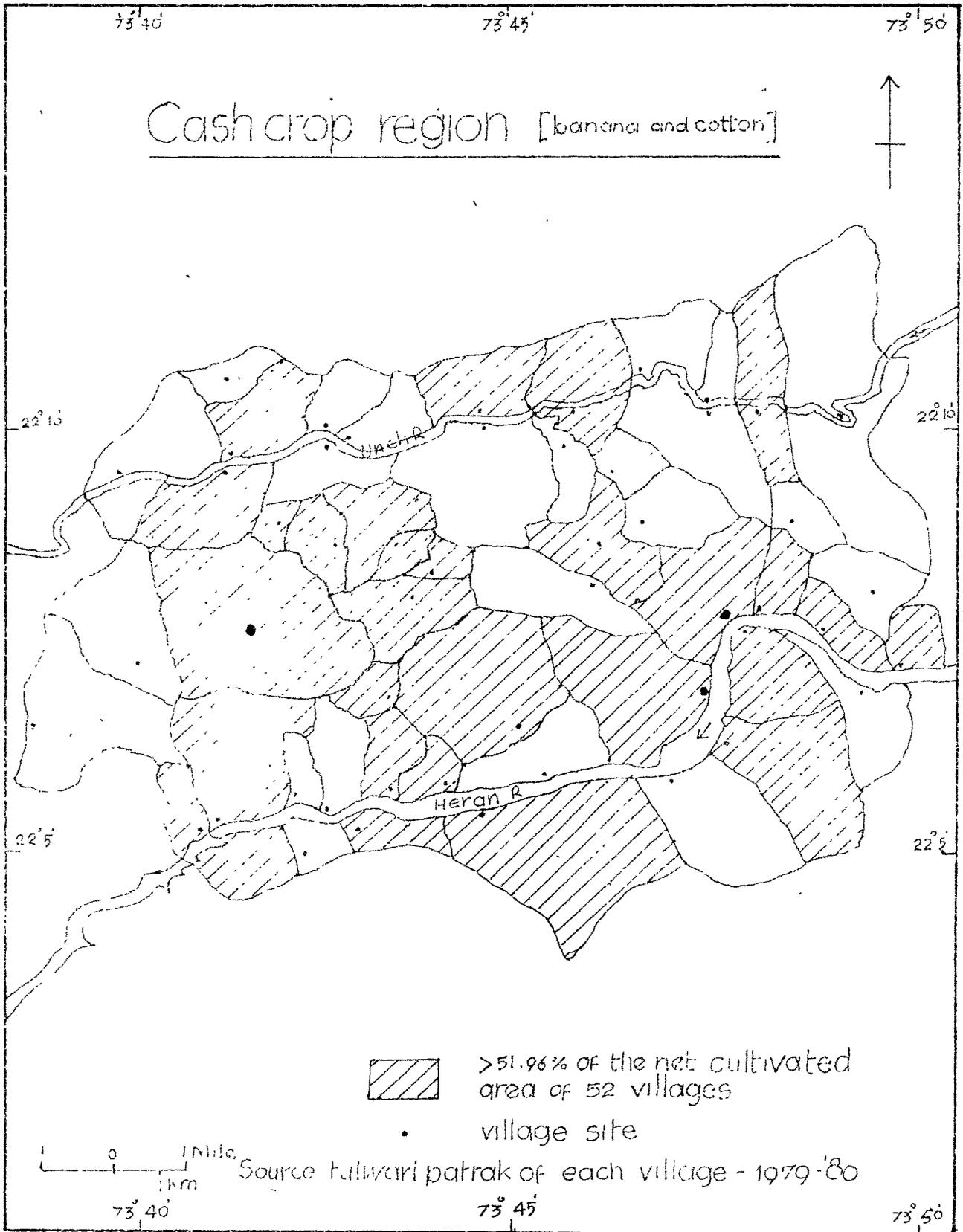
The two most important cash crops in the study area are cotton and banana. They occupy 8076.25 hectares or 51.96% of the net cultivated area in the 52 villages. There are 26 villages in the study area where more than half the net cultivated area is under cotton and banana. Cash crop requires irrigation, chemical fertilizers, pesticides etc. and is thus a rich man's crop.

All the three central place villages have both the cash crops in the surrounding area but they are more popular in the villages surrounding Kosindra and Vasna because of irrigation facilities. The two villages themselves have a very large area under these two crops (Kosindra 82.41% and Vasna 78.42% of their own cultivated area) Nearly 2/3 of their population consists of Patels and Shaha (local community) who are rich landowners. The scheduled castes and tribes also form a sizeable part of the population i.e. 46.36% in Kosindra and 44.27% in Vasna but they are generally landless labourers (see chapter on population)

Eastern region : There are 10 villages in the eastern sector of the study area comprising Lachhras (84.28%) Kosindra (82.41) Vasna (78.42%), Kharada (75.86%) Sarghi (68.78%) Rajbodali (66.62%) Chhachhadra (62.17%) Chudheli (61.62%) Un (58.74%) and Vedadi Chorangle (53.53%) which grow cash crops to a large extent. These 10 villages together have 2509.60 hectares under cash crops which forms 28.60% of the total area under cash crop in the 52 villages (14.86% to net cultivated area of the 52 villages) The landowners in most of these villages are from Kosindra 67.73% of the cultivated land in Kharada, 17.96% in Chudheli, 16.09% in Sarghi are from Kosindra. Some of the landowners are in Lachhras (30.62%) are from Vasna.

If the contribution of these villages to the total area under cashcrop in the 52 villages is considered Vasna has the highest share (5.82%) although its percentage of cash crop to its own net cultivated area is 78.42%. The second important village is Lachhras (5.57%), Kosindra stands third.

To the south of Kosindra and Vasna, there are 3 villages included in the cash crop region. They are Chikhoda (91.14%), Sinhadra (68.21) and



Map. 30

TABLE 17

109

CASH CROP REGION :

No.	Name of the village.	Net cultivated area in hectares.	Area under cash crop in hectares.	% of cash crop to net cultivated area	% of cash crop to total area under cash crop in 52 villages.
1	2	3	4	5	6
1.	Chikhodra	315.75	289.77	91.74	3.56
2.	Vagotha	249.04	221.49	88.96	2.74
3.	Sarangpur	116.36	102.80	88.36	1.27
4.	Ramsari	136.91	120.78	88.25	1.50
5.	Lachhras	533.80	449.73	84.28	5.57
6.	Kosindra	417.90	377.74	82.41	4.68
7.	Vatvatia	150.59	118.75	78.88	1.47
8.	Vasna	599.87	470.35	78.42	5.82
9.	Sardarpura	57.67	45.12	78.25	0.56
10.	Chorangla	217.08	165.35	76.21	2.05
11.	Khareda	115.31	87.45	75.86	1.08
12.	Jarwan	413.88	300.00	72.51	3.71
13.	Ghantoli	230.03	162.84	70.82	2.02
14.	Sarghi	264.24	181.68	68.78	2.25
15.	Sinhadra	601.96	410.50	68.21	5.08
16.	Rajbodeli	211.86	133.80	66.62	1.66
17.	Kanakuwa	92.13	60.22	65.39	0.75
18.	Ramsingpura	63.80	50.41	65.33	0.62
19.	Chhaachhadra	215.32	133.85	62.17	1.66
20.	Songir	169.31	104.17	61.52	1.09
21.	Chudholi	338.02	174.48	61.52	2.16
22.	Kachhata	177.67	108.24	60.94	1.34
23.	Un	239.25	140.50	58.74	1.74
24.	Parvata	771.95	442.71	57.15	5.48
25.	Kuberpura	62.56	35.19	56.29	0.44
26.	Indral	421.26	230.15	54.66	2.85
27.	Vadadla Chorangla	298.87	159.92	53.53	1.98
28.	Bhatpur	1037.92	551.32	53.15	6.82
29.	Bhorda	315.55	163.04	51.69	2.02

1.	2	3	4	5	6
30	Sarsinda	506.36	255.72	50.53	3.17
31.	Sarsinda Chhachha	298.14	125.90	42.25	1.56
32.	Panej	407.51	167.67	41.16	2.08
33.	Kadchhala	1269.01	491.08	39.28	6.08
34.	Taleti	234.31	90.49	38.65	1.12
35.	Khodia	190.24	72.16	37.86	0.89
36.	Geharpura	86.24	30.15	35.00	0.37
37.	Timba	650.28	224.78	34.57	2.78
38.	Sunderpura	119.94	40.42	33.72	0.50
39.	Khurwad	637.18	204.62	32.14	2.53
40.	Padwan	199.61	60.77	30.49	0.75
41.	Simalghoda	92.65	27.50	29.64	0.34
42.	Desan	248.35	69.50	28.01	0.86
43.	Anroli	137.89	32.63	23.40	0.40
44.	Timbi	140.03	29.14	20.85	0.76
45.	Kapadia	110.55	21.39	19.43	0.26
46.	Lunadra	406.32	71.16	17.55	0.91
47.	Kothiya	133.84	20.67	15.46	0.26
48.	Navagam	164.85	24.96	15.17	0.31
49.	Savjipura	60.22	8.32	13.13	0.10
50.	Daroli	222.72	12.03	5.43	0.15
51.	Anarpura	88.11	2.82	3.22	0.03
52.	Vadadla	260.46	2.00	0.79	0.02
	Total	15,540.92	8,076.25	51.96	

Parvate (57.85%). These 3 villages together have 1149.98 hectares under banana and cotton which forms 14.13% of the total area under cash crop in the 52 villages (7.34% of cash crop to net cultivated area of the 52 villages) of these Chikhodra has the highest percentage (91.14%) of cash crop in the study area. It has facilities of well irrigation, facilities for bank loans, good transport facilities and several tractors (15). Banana however is more popular (59.35%) in the village than cotton (31.29%).

If the contribution of these villages to the total area under cash crop in the 52 villages is considered Parvate has the highest share 6.48%, although its percentage of cash crop to its own net cultivated area is 57.35%. The second important village is Sinhadre 5.08% followed by Chikhodra 3.56%.

Western Region : Near Bhatpur there are 15 villages which are included in the cash crop region. Of which 8 villages are to the north of Bhatpur, they are Vagetha 89.97%, Vatvatia 78.88%, Sardarpura 78.25%, Chorangle 76.21%, Jarwan 72.51%, Ramsingpura 65.33%, Kachhata 64.94% and Kuberpura 59.29%. This region does not grow banana because of lack of irrigation and all weather transport facilities. Cotton is the only cash crop and it occupies 1044 hectares (12.93% of the total area under cash crop in the 52 villages). These 8 villages together have 6.72% of the net cultivated area of the study area under cash crop. The cultivated land in these villages is mainly owned by farmers of Bhatpur. In Vatvatia 87.94% of the net cultivated area and in Kuberpura 89.08%, Vagetha 72.02%, Jarwan 44.20%, Chorangle 28.96% Ramsingpura 68.65% are owned by farmers of Bhatpur. In all these villages cotton is the most important crop. While village has a comparatively rich Koli Local community not of higher caste population,, besides the landowners of Bhatpur. It has also the facilities of canals irrigation from the Heran river.

To the south of Bhatpur there are 14 villages. They are Serangpur 86.36%, Ramsari 85.25%, Ghantoli 70.82%, Kanakuwa 65.39%, Songir 61.56%, and Indral 54.66%. Including Bhatpur (53.15%). This region has 1332.29 hectares under cash crop cultivation which forms 16.49% of the total area under cash crop in the 52 villages (8.57% of the net cultivated area of the 52 villages). In all these villages cotton is the most important crop, the land owners of these villages are mainly from Bhatpur.

If the contribution of these villages to the total area under cash crop in the 52 villages is considered Dhatpur has the highest share 6.82% although its percentage of cash crop to its own net cultivated area is 53.15. The second important village is Jarvan 3.71%, and Vegetha is third 2.74% and fourth village is Chorangle 2.05%

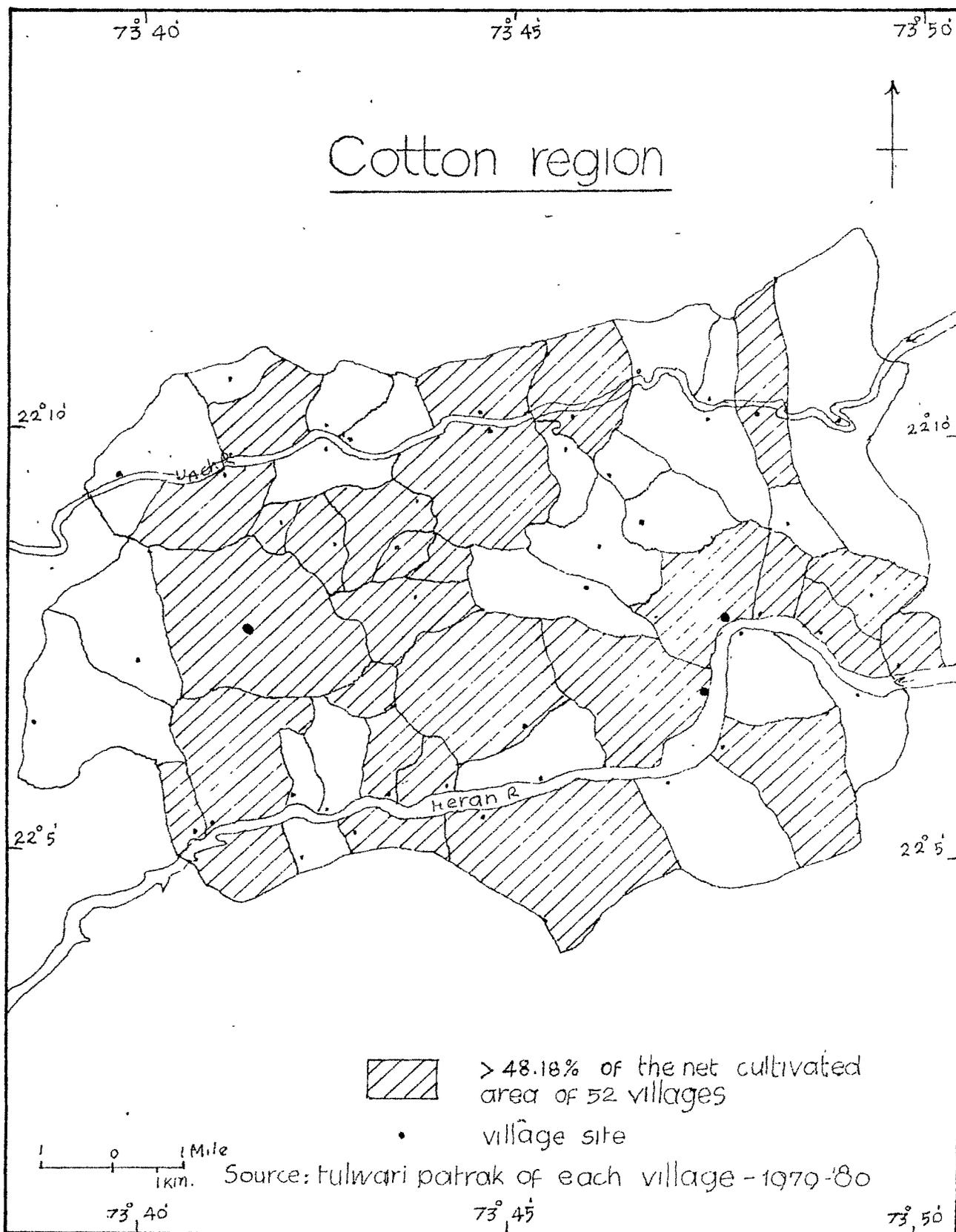
COTTON REGION : MAP 31

Cotton is the most important single crop and the main cash crop in the study area. It occupies 7487.37 hectares or 48.8% of the net cultivated area in the 52 villages. There are 28 villages in the study area where more than half the net cultivated area is under cotton. All the other villages cultivate some cotton ranging in area from 0.79% to 42.25% of the net cultivated area. Cotton is an exhaustive crop, which requires chemical fertilizers, pesticides and water and hence only well-to-do farmers can afford to grow it.

All the three central place villages are situated in cotton growing region. Bhatpur has 53.15% of its cultivated area under cotton. More than half of its population consists of Patels, Brahmins and Suthars (carpenters) who are rich landowners. The scheduled castes and tribes who are generally labourers also form a sizeable part of the population (53.43%) but they are landless labourers. There are 16 other villages surrounding Bhatpur which grow cotton. Of these 10 are to the north and 6 villages to the south of Bhatpur.

Northern Bhatpur Region: It comprises Vaghta (88.96%) Remsingpura (79.03%) Vatvatia (78.88%) Sardarpura (78.25%) Choranga (76.21%) Jarvan (72.51%), Kachhata (69.94%) Kubarpura (56.29%), Vadadia Choranga (53.53%) and Saranda (50.53%). It is the main cash crop in these villages. These 10 villages together have 1460.19 hectares under cotton which forms 19.50% of the total area under cotton which forms 9.40% of 19.56% of the total area under cotton to net cultivated area of the 52 villages. In these villages the landowners are from the Bhatpur viz in Vatvatia 87.94%, Kubarpura 89.06%, Vaghta 72.02%, Jarvan 44.20%, Choranga 28.98%, Remsingpura 68.65%¹. All these villages are leading in cotton cultivation.

Sarangpur, Kanakua, Indral, Songir region : To the south of Bhatpur there are six villages which are included in this cotton region. They are Sarangpur (88.36%) Ramseri (88.25%), Songir (61.56%) Indral (54.66%) Including Bhatpur this region has 1332.29 hectares under cotton cultivation which forms 17.79% of the total area under cotton in the 52 villages (8.57% of cotton to net cultivated area of the 52 villages) In all these villages cotton is the most important crop. The landowners of these villages are mainly from Bhatpur. In Ramseri 90.24 Sarangpur 84.04%, Padwan 70.56% and Indral 18.12% of the land are owned by Bhatpur farmers². The 17 villages north and south of Bhatpur have 2792.48



Map: 31

A REGION

No.	Name of the Village.	Net cultivated in hectares.	Area under cotton in hectares.	% of cotton to net cultivated area	% of cotton to be total area under cotton in 52 villages
1	2	3	4	5	6
1.	Vagetha	249.04	221.49	88.96	2.95
2.	Sarangpur	116.36	102.80	88.36	1.37
3.	Ramsari	136.91	120.78	88.25	1.61
4.	Lachhras	533.80	449.73	84.28	6.14
5.	Ramsingpura	63.80	50.41	79.03	0.67
6.	Vasvatia	150.69	118.75	78.88	1.58
7.	Sardarpura	57.67	45.12	78.25	0.60
8.	Chorengla	217.08	165.35	76.21	2.20
9.	Kherete	115.31	87.45	75.86	1.16
10.	Jarwan	413.88	300.00	72.51	4.00
11.	Ghantoli	230.03	162.84	70.82	2.17
12.	Sinhadra	601.96	410.50	68.21	5.48
13.	Kanakuwa	82.13	60.23	65.39	0.80
14.	Vasna	599.87	390.35	65.09	5.21
15.	Chhachhadra	215.33	133.85	62.17	1.78
16.	Songli	169.31	104.17	61.56	1.39
17.	Chudheli	338.02	174.49	61.52	2.33
18.	Kachhata	177.67	108.24	60.94	1.44
19.	Kosindra	457.90	272.53	59.54	3.63
20.	Un	239.25	140.50	58.74	1.87
21.	Parvata	771.95	442.71	57.85	6.01
22.	Kubarpura	62.56	35.49	56.29	0.46
23.	Intral	421.26	230.15	54.66	3.07
24.	Rajbodeli	211.86	113.70	53.70	1.51
25.	Vasodia Chorengla	298.87	159.92	53.53	2.13
26.	Bhatpur	1037.92	551.32	53.15	7.36
27.	Bhorda	315.55	159.94	50.81	2.13
28.	Sorsinda	506.36	255.72	50.53	3.41
29.	Sersinda Chhachha	298.14	125.90	42.25	1.68

(contd. 2.)

1.	2	3	4	5	6
30.	Panej	407.51	167.67	41.16	2.23
31.	Taleti	234.31	90.49	38.65	1.20
32.	Kadchhela	1269.01	485.96	38.33	6.49
33.	Khodia	190.24	72.16	37.86	0.96
34.	Geharpura	86.24	30.15	35.00	0.40
35.	Timba	650.20	224.78	34.57	3.00
36.	Sunderpura	119.94	40.42	33.72	0.53
37.	Khunwad	637.18	204.62	32.14	2.73
38.	Chikhodra	315.79	100.32	31.79	1.35
39.	Padwen	199.61	60.77	30.49	0.91
40.	Simelghoda	92.85	27.50	29.64	0.36
41.	Aaroli	137.89	32.63	23.70	0.43
42.	Tiabi	143.03	29.14	20.85	0.38
43.	Dasen	243.35	50.41	20.32	0.67
44.	Lunadra	406.32	71.16	17.55	0.95
45.	Kothiya	133.84	20.67	15.46	0.27
46.	Savjipura	60.22	0.32	13.83	0.11
47.	Sarghi	264.24	32.68	12.40	0.43
48.	Kapadia	110.55	112.89	11.75	0.17
49.	Navagam	164.85	13.66	8.44	0.18
50.	Daroli	222.72	12.03	5.43	0.16
51.	Amerpura	88.11	2.82	3.22	0.03
52.	Vadadia	260.46	2.00	0.79	0.02
Total :		15540.92	7487.37	48.18	

hectares under cotton cultivation which forms 37.29% of the total area under cotton in the 52 villages (17.97% of the net cultivated area of the 52 villages)

Lachhras, Vasna, Kosindra, Bhorde Region : There are 11 villages to the east including Vasna and Kosindra which have a sizeable area under cotton. They are Lachhras (84.28%), Kharada (75.86%), Sinhadra (68.21%), Vasna (65.09%), Chhachhadra (62.17%), Chudheli (65.52%), Kosindra (59.54%), Un (58.74%), Pervata (57.85%), Rajbodali (53.70%) and Bhorde (50.81%) Together they have 2775.74 hectares under cotton which is 37.07% of the total area under cotton in the 52 villages (17.86%) of cotton to net cultivated area of the 52 villages, almost equal to regions surrounding Bhatpur. In all these villages, cotton is the most important crop. The Patels of Kosindra form the main landowning class in these villages. In Kharada 67.73%, Bhorde 16.03%, Chudheli 17.96%, Vasna 20.53%. while Vasna's Patels are landowners in Sinhadra 78.30%, Lachhras 30.62% of the cultivated land. The Patels of Kosindra are rich and progressive enough to provide the facilities required for cotton cultivation. The Heron canal passes through this region and provides irrigation water. The eastern state highway No.5 has also encouraged the farmers to take to commercial cropping. Many other modern facilities such as banking are now found in Kosindra consequently the eastern cotton region is growing more rapidly than the regions surrounding Bhatpur.

If the contribution of these villages to the total area under cotton in the 52 villages is considered Bhatpur has the highest share (7.36%) although its percentage of cotton to its own net cultivated area is 53.15.

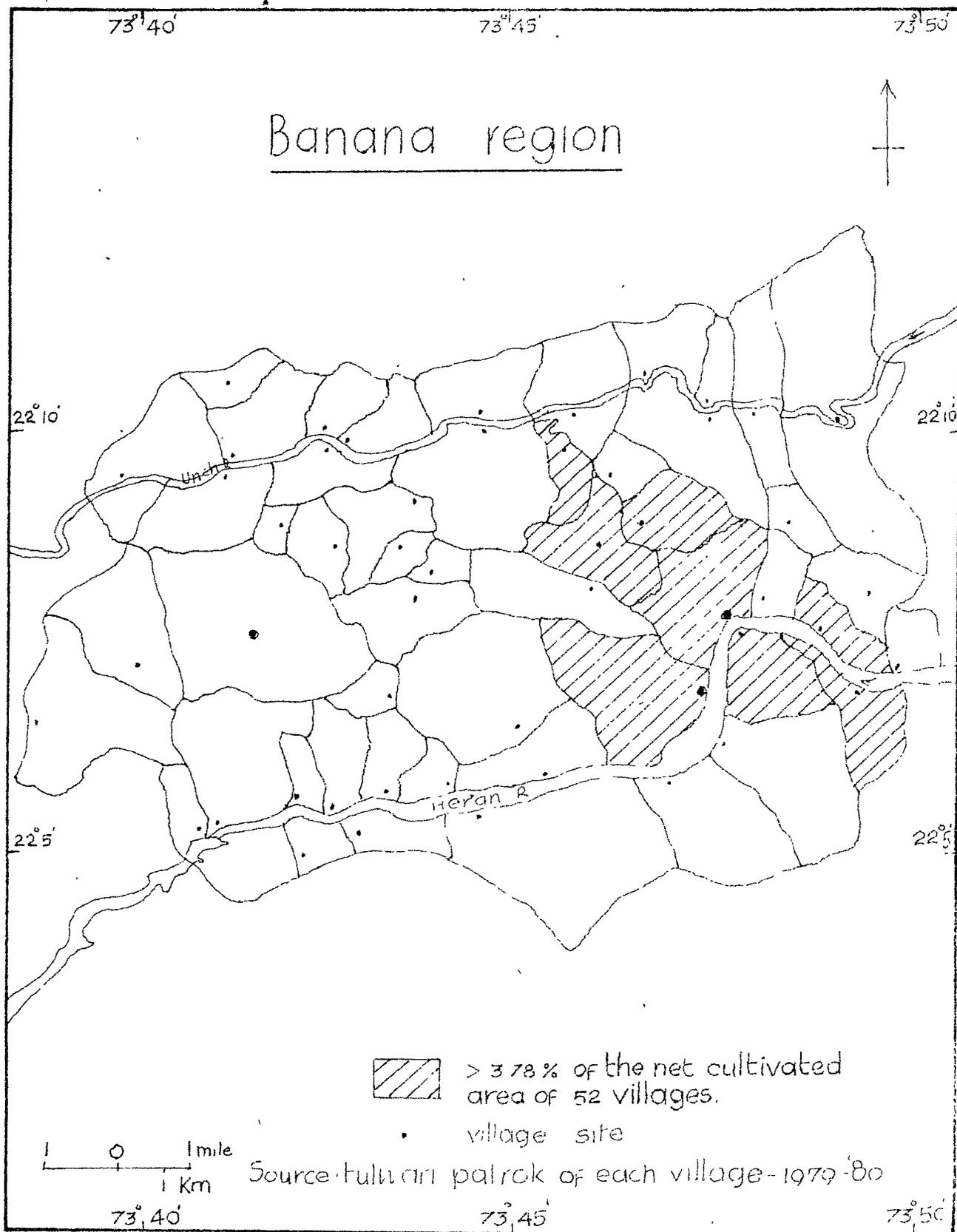
The contribution of Lachhras to the total area under cotton is 6.14% and the 2nd most important contributor is Pervata (6.01%) Sinhadra 5.48%, Vasna 5.21% and Kosindra stands 8th contributing 3.63% to the total cultivated area under cotton in the 52 villages.

BANANA REGION : Map 32

Recently, Banana has become a very important cash crop in Kosindra and Vasna subregions. It occupies only 588.88 hectares or 3.78% of the total net cultivated area in the 52 villages. Its cultivation is however becoming popular because of the high prices in the market, facilities for all weather transportation, irrigation (Neran canal and wells) and electrification and banking facilities in Kosindra, Vasna and Chikhodra. The Petals of these villages are enterprising to invest in the cultivation of cash crops of which Banana is the 2nd most important in the study area.

Kosindra, Vasna, Chikhodra Region : Both Kosindra and Vasna (Photo.7) are located in the Banana region. They have 22.97% and 13.33% of their net cultivated area respectively under Banana cultivation. Besides, there are six villages in which the area under banana is more than the percentage of the study area. They are Chikhodra (59.35%) Serghi (56.38%) Rajbodeli (9.48%), Deaan (7.69%) Kapadia (7.68%) and Navagam (6.73%) These villages together with Kosindra and Vasna have 580.66 hectares under banana which forms 98.60% of the total area under banana in the 52 villages, (3.78% of the net cultivated area of the 52 villages.) It is the foremost important crop in Chikhodra and Serghi, while it is the 2nd important crop in Kosindra, Vasna, Rajbodeli and Deaan. In Navagam it is 4th in importance and in Kapadia it takes the 5th place.

If the contribution of these villages to the total area under banana in the 52 villages is considered Chikhodra has the highest share (31.83%) although the percentage of banana to its own net cultivated area is 59.35. The second important share in the 52 villages is of Serghi (25.30%) while percentage of banana to its own net cultivated area is 56.38. The third important share in the study area is that of Kosindra 17.87% and the fourth important share in the 52 villages is of Vasna 13.58%.



Map 32

Table 19

BANANA REGION

No.	Name of the village.	Net culti- vation area in hectares	Area under banana in hectares.	% of banana to net culti- vated area	% of banana to total area under banana for 52 villages
1	2	3	4	5	6
1.	Chikhodra	315.79	187.45	59.35	31.83
2.	Sarghi	264.24	149.00	56.38	25.30
3.	Kosindra	457.90	105.21	22.97	17.87
4.	Vasna	199.87	80.00	13.33	13.58
5.	Rajbodeli	211.86	20.10	9.48	3.41
6.	Desar	248.35	19.10	7.69	3.24
7.	Kapadia	119.55	8.50	7.68	1.44
8.	Navagam	164.85	11.30	6.73	1.92
9	Kadchhala	1269.01	5.12	0.40	0.88
10.	Bhorda	315.55	3.10	0.98	0.53
	Total	15,540.92	588.88	3.78	

Remaining 42 villages do not grow banana in 1979.80

Chikhodra has the highest share of hectares under banana in the study area because it has private wells. The Patels of the village are rich enough to invest in the banana cultivation. For this purpose, a branch of the Bank of Baroda has been opened in the village for advancing loans to the cultivators. There are more than 75 tractors in the village which are used for transporting banana from the fields. The bridge over the Heran (photo-14) river between Kosindra and Chikhodra in 1970s connects the village to the Eastern State Highway No.5 near Kosindra. In Navagam banana is a popular crop because the landowners are from Chikhodra in 1970s connects the village to the Eastern State Highway No.5 near Kosindra. In Navagam banana is a popular crop because the landowners are from Chikhodra. In Rajbadali the Heran canal road connecting it. Eastern State Highway is an encouragement to the cultivation of the cash crops.

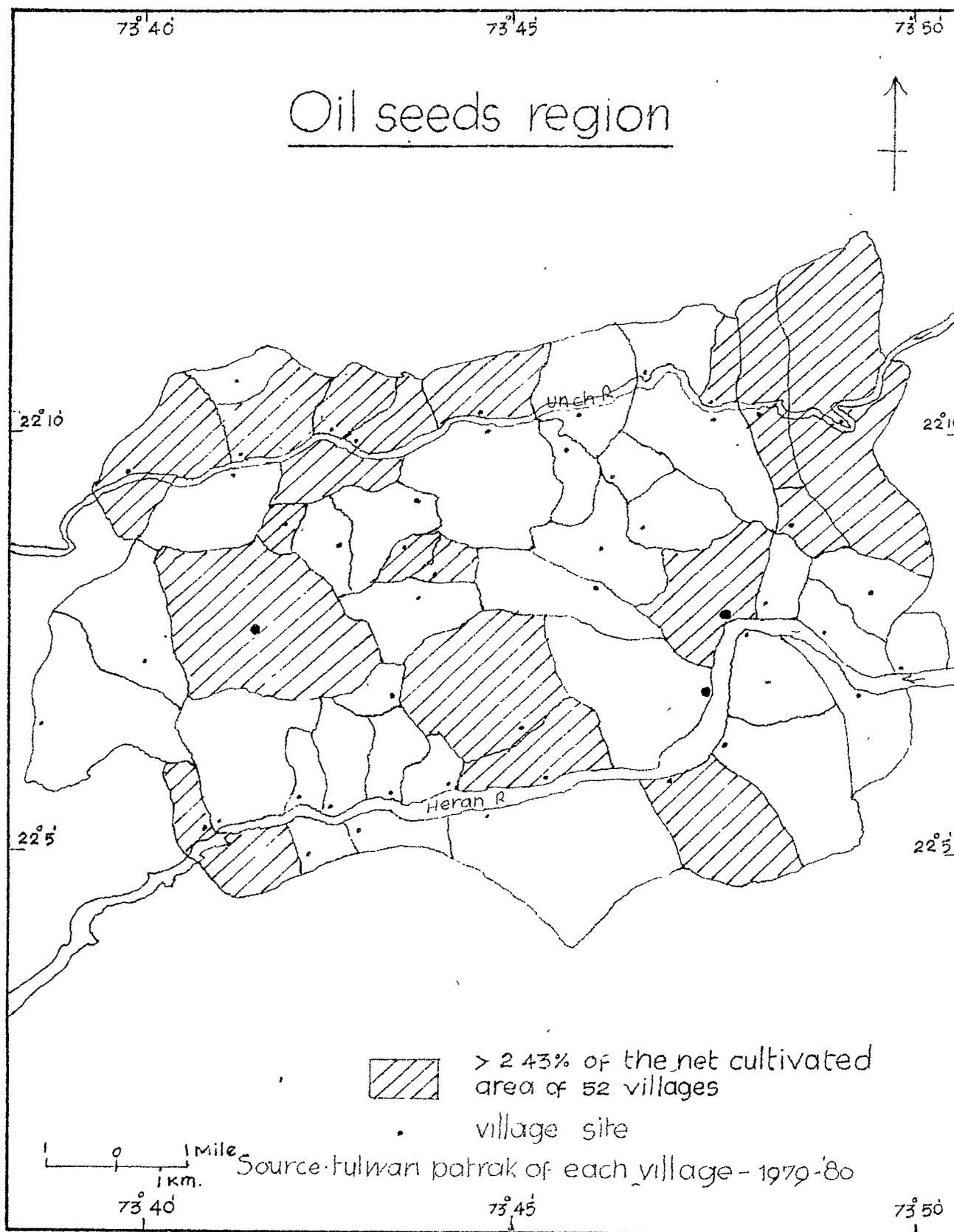
OIL SEEDS REGION : MAP 33

Thirty one out of 52 villages of the study area grow oilseeds. It is mainly grown for consumption in the village itself. The main oilseeds are Sesemum (locally known as Til) Groundnut and Castorseeds. They occupy 378.41 hectares or 2.43% of the net cultivated area of the 52 villages. They do not require much investment, irrigation facilities or pesticides, so more profitable. Recently oilseeds like castor seeds has begun to fetch high prices in the market and they are grown also for commercial purposes.

Kosindra, Kadchhala Region : To the north and east of Kosindra there is a large area growing oilseeds comprising Chudhali (10.09%) Kadchhala (5.36%), Kosindra (3.52%) Goharpura (1.63%) and Simalghoda (1.27%). These five villages including Kosindra, together have 133.44 hectares under oilseeds which forms 35.26% of the total area under oilseeds in the 52 villages (0.66% of oilseeds to net cultivated area of the 52 villages) Of these oilseeds form the 2nd most important crop in Kadchhala and in Simalghoda, while in Goharpura it is the 3rd important crop. In Chudhali it occupies only the 4th place amongst the cultivated crops.

None of these villages contribute largely to the total area under oilseeds in the study area. If the contribution of these villages to the total area under oilseeds in the 52 villages is considered Chudhali has the highest share (10.09%) although its percentage of oilseeds to its own net cultivated area is only 11.29. The people of the village are poor and are not able to invest in cash crops.

Lachhras, Lunadra Region : South and east of Kosindra there are three villages which cultivate oilseeds to some extent namely Lunadra (4.70%), Lachhras (3.24%) and Teleti (3.20%). These three villages have 48.55 hectares under oilseeds cultivation, which is 12.63% of the total area under oilseeds in the 52 villages of the study (0.31% to the net cultivated area of the 52 villages). Of these oilseeds form the 2nd important crop in Lachhras, while in Lunadra it is the 3rd important crop. In Teleti it occupies only the 5th place amongst the cultivated crops.



Map: 33

Table : 20

OIL SEEDS REGION

Sr. No.	Name of the village	Net Cultivated area in hectares	Area under oil seeds in hectares.	% of oil seeds to net cultivated area.	% of oil seeds to total area under oil seeds in 52 villages.
1.	Chudheli	338.02	38.19	11.29	10.09
2.	Timbi	140.03	12.00	8.56	3.17
3.	Sarsinda Chhachha	298.14	22.15	7.42	5.85
4.	Gaharpura	86.24	6.18	7.16	1.63
5.	Deroli	222.72	15.13	6.79	4.00
6.	Romsingpura	53.80	4.12	6.45	1.09
7.	Songir	169.31	10.12	5.97	2.67
8.	Kachhole	1269.01	68.12	5.36	18.00
9.	Taleti	234.31	12.10	5.16	3.20
10.	Simalghoda	92.85	4.82	5.19	1.27
11.	Vadadia Cherangla	298.87	15.10	5.05	3.99
12.	Lunadra	406.32	19.12	4.70	5.05
13.	Amroli	137.89	5.10	3.69	1.35
14.	Kosindra	457.90	16.13	3.52	4.26
15.	Kabarpura	62.56	2.10	3.35	0.55
16.	Lachhree	533.80	17.33	3.24	4.58
17.	Bhatpur	1037.92	30.10	2.90	7.95
18.	Kechhata	177.67	5.12	2.88	1.35
19.	Sardarpura	119.94	3.18	2.65	0.84
20.	Vasadia	250.46	6.21	2.38	1.64
21.	Chorangla	217.08	5.16	2.37	1.36
22.	Intral	421.26	9.15	2.17	2.42
23.	Vatretia	150.59	3.12	2.07	0.82
24.	Paduon	199.61	4.16	2.08	1.10
25.	Sarsinda	506.36	10.31	2.03	2.72
26.	Khunwad	637.18	9.30	1.45	2.46
27.	Pervata	771.95	10.31	1.35	2.72
28.	Chantoli	230.03	3.12	1.35	0.81
29.	Tigba	650.28	7.12	1.01	1.95
30.	Jarvan	413.88	3.14	0.75	0.82
31.	Vagatha	249.04	1.10	0.44	0.29
	Total of 52 villages:	15940.92	378.41	2.43	

Remaining 21 villages do not grow oil seeds in 1979-80.

Sarsinda Chhachha, Amroli, Deroi Region : North of Bhatpur, there are nine villages which cultivate oilseeds to some extent, namely Sarsinda Chhachha (7.42%) Deroi (6.39%), Ramsingpura (6.45%), Vadadia Chorangla (3.99%) Amroli (3.69%), Kubarpura (3.35%), Timbi (3.17%) Kachheta (2.86%) and Sunderpura (2.65%). These nine villages have 84.00 hectares under oilseeds cultivation which is 22.20% of the total area under oilseeds in the 52 villages of the study (0.54% to the net cultivated area of the 52 villages) Of these oilseeds form the 2nd most important crop in Ramsingpura. While in Kachheta, Vadadia Chorangla and Kubarpura it is the 3rd important crop. In Sunderpura, Sarsinda Chhachha, Amroli it occupies the fourth place and in Deroi and Timbi it occupies only the 5th place amongst the cultivated crop.

Bhatpur has only 30.10 hectares or 2.90% under oilseeds cultivation while to the south of Bhatpur, there is only an isolated village growing oilseeds i.e. Songir (5.97%)

KOSINDRA REGION :Crop patterns in the region of Kosindra :

There are 26 villages in the influence area of Kosindra. This region has taken to commercial agriculture to a greater degree than the Bhatpur region. It grows both cotton and banana. Cotton occupies a less important place in the Kosindra region than in Bhatpur. Kosindra has acquired a nobility with the construction of the new roads after independence. The new national highway passes through Kosindra and it has better road facilities than Bhatpur.

TABLE : 21 : Crop Patterns in the Kosindra Region :

(% are to the net cultivated area of each region)

Region	Level	No. of villages	Cash Crop			Non Cash crop			
			Cotton	Banana	Total	Cereal	Pul.	OilSds.	Total
Kosindra Region (Map 5)	-	26	46.10	5.62	51.72	38.24	7.70	2.34	48.28
Sub Rgn. (I)	60% & above.	6	44.14	26.38	70.51	25.70	3.79	--	29.49
Sub Rgn. (II)	40% to 60%	10	32.94	1.19	34.13	54.73	10.25	0.89	65.83
Sub Rgn. (III)	20% to 40%	10	51.66	0.24	51.90	36.30	8.10	3.70	48.10
Kosindra Central Place Villages.	--	--	59.54	22.97	82.51	11.76	2.21	2.52	17.49

Cash Crops: The net cultivated area in the Kosindra region is 8859.07 hectares of which cotton occupies 4064.22 hectares or 46.10% and banana 498.07 hectares (5.62%). Together cash crops occupy 51.72% of the net cultivated area. Cash crops are therefore slightly more important than non cash crops in this region, unlike the Bhatpur region. The major cotton cultivating villages are Kadchhala, Lachhra, Parvata, Sinhadra and Vasna. These 5 villages cultivate about 25% of the total area under cotton in this region. Vasna the third central place village in the study area falls within the influence region of Kosindra. Its importance as a central place village is only because some of the government offices are situated in that village. Sarsinda, Chudhali, Penej, Bherda, Vedadia Chorenge, Chhachhadra and Rajbodali also cultivate a good quantity of cotton, about 15% of the total area under cotton in the Kosindra region. Cotton is the leading crop in 13 of the 26 villages. In Lachhra and Kherda cotton occupies about 75% of their net cultivated area. Vasna, Sinhadra, Rajbodali, Chhachhadra, Chudhali, Un, Parvata, Vedadia, Chorenge, Bherda and Sarsinda have more than 50% of their net cultivated area under cotton.

The second cash crop of this region is banana. Banana occupies 5.62% of the net cultivated area of the region. Nearly 60% of the net cultivated area of Chikhodra is under banana while Sargdi has 56.38% of its cultivated area under the new cash crop. The other villages important for banana cultivation are Vasna, Rajbodali and Desan. Chikhodra lies on the left bank of the river Heron and it is connected to Kosindra by a bridge. The other villages are accessible to Kosindra by metalled road. All these villages are situated adjacent to Kosindra. These 5 villages together account for more than 92.85% of the total area under banana in the Kosindra region.

The central place village of Kosindra has taken to commercial agriculture to a greater extent than its region. It has 82.51% of its cultivated area under cash crops which includes 59.54% under cotton and 22.97% under banana, much more than the village of Bhatpur. The area under non cash crops in Kosindra is only 17.49% of its net cultivated area compared to 46.85% of Bhatpur. Kosindra is now much better served by

TABLE 2 22

CROP PATTERNS IN THE KOSINDRA REGION

NON CASH CROP

128

Cereale area in hectares.	% of cereale to net cultivated area.	% to cereale of 26 villages.	Pulses area in hectares.	% of Pulses to net cultivated area.	% to Pulses of 26 villages.	Oil seeds area in hectares.	% of oil seeds to net cultivated area.	% to oil seeds of 26 villages.
477.12	5.39	14.09	225.59	2.55	33.02	68.12	0.77	32.78
93.06	1.05	2.75	36.46	0.41	5.34	-	-	-
51.80	0.58	1.53	14.94	0.17	2.19	17.33	0.20	8.34
298.39	3.37	9.81	20.54	0.23	3.00	10.31	0.12	4.96
157.49	1.78	4.65	33.97	0.38	4.97	-	-	-
25.29	0.29	0.75	2.73	0.03	0.40	-	-	-
227.10	2.56	6.71	13.23	0.15	1.94	10.31	0.12	4.96
77.55	0.88	2.29	5.01	0.06	0.73	-	-	-
97.73	1.10	2.89	227.62	0.31	4.84	38.19	0.41	18.38
188.96	2.13	5.58	50.88	0.57	7.45	-	-	-
113.78	1.28	3.36	38.73	0.44	5.67	-	-	-
103.54	1.17	3.06	20.31	0.27	2.897	15.10	0.17	7.27
61.21	0.69	1.81	37.54	0.42	5.50	-	-	-
60.63	0.68	1.79	10.13	0.11	1.48	-	-	-
69.22	0.78	2.04	12.26	0.14	1.79	-	-	-
121.60	1.37	3.59	10.12	0.11	1.48	12.10	0.41	5.82
22.89	0.26	0.68	4.97	0.06	0.73	-	-	-

TABLE : 22

CROP PATTERNS IN THE KOSINDRA REGION

CASH CROP

129

Sr. No.	Villages.	Cotton area in hectares.	% of cotton to net cultivated area.	% to cotton of 26 villages.	Banana area in hectares.	% of banana to net cultivated area.	% to banana of 26 villages.
1.	Kadchhala	485.95	5.49	11.90	12.22	0.14	2.45
2.	Veena	390.35	4.41	9.56	80.00	0.90	16.06
3.	Lachhrai	449.73	5.03	11.01	-	-	-
4.	Pervata	442.71	5.00	10.84	-	-	-
5.	Sinhadra	410.50	4.63	10.05	-	-	-
6.	Ghikhodra	190.32	1.13	2.46	187.45	2.12	37.64
7.	Sarsinda	255.72	2.89	6.26	-	-	-
8.	Sarghi	32.68	0.36	0.80	149.00	1.68	29.92
9.	Chudhalli	174.48	1.98	4.28	-	-	-
10.	Panej	167.67	1.89	4.11	-	-	-
11.	Shorda	159.94	1.82	3.92	3.10	0.03	0.62
12.	Vadadia Chorangle	159.92	1.82	3.92	-	-	-
13.	Un	140.80	1.59	3.44	-	-	-
14.	Rajboralli	113.70	1.25	2.78	27.40	0.31	5.50
15.	Chhachhedra	133.85	1.51	3.28	-	-	-
16.	Taleti	90.49	1.02	2.22	-	-	-
17.	Kharewa	87.45	0.99	2.14	-	-	-
18.	Khodia	72.16	0.82	1.77	-	-	-
19.	Lonadra	71.16	0.80	1.74	-	-	-
20.	Dasen	50.41	0.57	1.23	19.10	0.22	3.83
21.	Beharpor	30.15	0.34	0.73	-	-	-

ate highways than Bhatpur and has acquired a new nodality which was originally enjoyed by Bhatpur.

Non Cash crops :

The non cash crops of the Kosindra region are the same as in the Bhatpur region, but they occupy less than half the area (48.28%) under cultivation.

Cereals :

As in Kosindra cereals occupy the largest area (38.24%) amongst the non cash crops and rice is the main cereal cultivated. It is the leading crop in Panoj, Taleti, Lunadra, Desan, Goharpur, Simalghoda, Kapadia and Savjipure and the second most important crop in Sihadra. Jowar is the leading crop in Navagam, Khodia and Kadchhala and the 2nd important crop in Parvata, Sargi, Chudhali, Vadadia, Chorangla, Rajbodoli, Chhachhdra, Taleti, Goharpur and Kapadia. The Kosindra region has taken to wheat cultivation more than Bhatpur region. It is cultivated in about 8 villages in the region and in one village it is the 2nd most important cereals. But it is still only a minor crop. Kadchhala, Parvata, Lunadra, Vadadia, Sarsinda and Panoj account for the largest area under cereals (5.39%, 3.37%, 3.11%, 2.74%, 2.56% and 2.13% respectively of the net cultivated area of the Kosindra region).

The central place village of Kosindra has only 11.76% of its net cultivated area under cereals but wheat figures as the only important cereal. It is reflective of the increasing per capita income of the farmers and the facilities for transport to the urban areas available to the village. Rice is grown only in the Peteparas of Kosindra.

Pulses :

Pulses are grown only in 7.70% of the net cultivated area in the Kosindra region but it is the 2nd major crop in Kadchhala, Panoj, Bhorde, Un, Lunadra and Simalghoda. Kadchhala accounts for 33.02% of the area under pulses in the Kosindra region and it is highest in the region.

In the central place village of Kosindra pulses occupy 2.21% of the net cultivated area. It is a more important crop than in Bhatpur with the transport facilities available to Kosindra pulses are fast finding a market.

Oilseeds :

Oilseeds occupy a more important place than pulses in the Kosindra region (2.34% of the net cultivated area) It is the 2nd important crop in Lechras and the third important crop in Kadchhale, Chudheli, Vadedla Choranga and Lunedra. However Kadchhale accounts for the highest percentage of oil seeds in the Kosindra region being 32.78% of the total area under oilseeds.

CROP PATTERNS IN THE SUB REGIONS OF KOSINDRA :

Sub Region I - 60% and above.

There are six villages in the 60% level of influence of Kosindra namely Chikhodra, Vasna, Rajbodali, Khareda, Sargi and Desan.

TABLE 23 : CROP PATTERN IN THE SUB REGION OF KOSINDRA
60% & above.

Villages	Cotton area in hect.	% of Cotton to net culti. area	% to Cotton of 6 vill.	Banana area in hect.	% of Banana net cult. area	% to Banana of 6 villages	CASH CROPS	
							Total of cash cr.	% to net cultiv. area in the villages
Chikhodra	100.32	5.71	12.95	187.45	10.68	40.49	287.77	16.39
Vasna	390.35	22.24	50.37	80.00	6.56	17.28	470.35	26.80
Rajbodali	113.70	6.48	14.67	27.40	1.56	5.92	141.10	8.04
Khareda	87.45	4.98	11.29	--	--	--	87.45	4.98
Sargi	32.68	1.86	4.22	149.00	8.49	32.18	181.68	10.35
Desan	50.41	2.87	6.50	119.10	1.08	4.13	69.51	3.95
Total	774.91	44.14		462.95	26.37		1237.96	70.51

Table-22

NON CASH CROPS

Cereals area in hectares.	% of to total cult. area	% to of 6 vill.	Pulses area in hec.	% of pul. to net cult. area	% to of 6 vill.	O.S. area in hec.	% of O.S. to net cult. area	% to of 6 vill.	Total Non C.C.	% to n.c.a. of n.c.a.	Total net cult. area
25.29	1.44	5.61	2.73	0.15	4.10	-	-	-	28.02	1.59	319.7961
13.06	5.31	20.63	36.46	2.08	54.84	-	-	-	129.52	7.39	599.87086
30.63	3.48	13.44	10.13	0.98	15.24	-	-	-	70.76	4.03	211.86036
22.89	1.30	5.07	4.97	0.26	7.48	-	-	-	27.86	1.58	115.316
17.55	4.42	17.19	5.01	0.29	7.53	-	-	-	82.56	4.71	264.24831
71.66	9.76	38.06	7.18	0.41	10.81	-	-	-	178.84	10.19	248.35881
51.08	28.70		66.48	3.79					613.56	29.48	1755.42

CASH CROPS : -- Cash crop occupy 70.51% of the net cultivated area of the 6 villages 44.14% under cotton and 26.37% under bahaba. Of these Vasna accounts for 26.80% or more than a fourth of the area under cash crops in the region. Chikhadra is the next important cultivator of cash crops in the sub region followed by Sergi. Cotton is the leading crop in Khereda, Vasna and Rajbodoli. Khereta has 75.56% of its cultivated area under cotton, while Vasna has 65.09% and Rajbodoli has 53.70%. Of these Vasna has the highest hectares 390.35 under cotton cultivation, 22.24% of this net cultivated area of the sub region of Koinadra and accounts for half the area 50.37% of cotton in this region.

In the 60% level region of Kosindra banana cultivation is much more important than in the other two sub regions, 26.37% of 70.51% under cash crops being under banana. Chikhodra has 59.35% of its cultivated area under banana. Banana can be transported across the river to Kosindra without difficulty after the bridge was (photo-14) constructed. It accounts for 40.49% of the total area under banana in the sub region. Sargi accounts for 32.16% It lies north west of Kosindra and is a neighbouring village. 56.38% of its net cultivated area is under banana.

Non Cash Crops:

Non cash crops occupy only less than a third (29.49%) of the net cultivated area of this sub region. Cereals are the most important non cash crop in this region as in Bhatpur Sub region - I occupying 25.70% of the net cultivated area of the sub region. Deesen is the leading village for cereals (9.28%) in this sub region. Rice is the most important cereal in this village. On the other hand wheat is the most important cereal in Chikhodra, second in importance only to banana. Wheat is also cultivated in Vasna, Sargi and Deesen. Jowar is the leading cereal in Rajbedeli and Sargi, next in importance only to the cash crops cotton and banana respectively.

Pulses are grown in a small area (66.68 hectares) in the sub region I and oil seeds are not cultivated at all. Vasna has the highest area under pulses (36.46 hectares) more than half of the pulse area in this sub region of Kosindra.

SUB REGION II :

In the 40% to 60% level of influence of Kosindra there are 10 villages.

CASH CROPS

Cash crops in this sub region of Kosindra are of less importance than non cash crops, being only 34.13% of the net cultivated area.

TABLE : 24 CROP PATTERNS OF THE SUB REGION II OF KOSIGUDA.

CASH CROPS

40% to 50%

Villages.	Cotton area in hectare.	% of Cot. to net cult.a.	% to Cott. of vill cult.a.	Banana area in hec.	% of area in cult. area	% to net cult. area in 10 villages.	Total of cash crop in 10 vill.	% to net cultivated area in 10 villages.
Bhorde	159.44	0.30	25.20	3.10	0.16	13.53	163.04	8.46
Navagam	13.66	0.71	2.15	11.30	0.59	24.35	24.96	1.30
Panej	167.67	0.70	26.41	-	-	-	167.67	8.70
Vadadla	2.00	0.11	0.32	-	-	-	2.00	0.11
Savjipure	8.32	0.43	1.31	-	-	-	9.32	0.43
Beharpure	30.15	1.56	4.75	-	-	-	30.15	1.56
Simlighoda	27.50	1.43	4.33	-	-	-	27.50	1.43
Un	140.50	7.29	22.13	-	-	-	140.50	7.29
Khedia	72.16	3.74	11.37	-	-	-	72.16	3.74
Kapadia	12.89	0.67	2.03	9.50	0.44	37.12	21.39	1.17
Total	634.79	32.94	22.90	22.90	1.19	-	657.69	34.13

MON CASH CROP

Cereals area in hec.	% of Car. to net cult. area	% of Car. of 10 will.	% of Car. area in hec.	% of Pul. to net cult. area	% of Pul. of 10 will.	% to Pul. area in hec.	% to n. s. to n. hec.	% to n. s. to crop	Total non cash crop	% to net Total cult. areaset cult. in n. s. area
113.78	5.50	10.78	38.73	2.00	13.60			152.51	7.90	CPJ 315.1
130.80	6.79	12.39	9.09	0.47	4.60			139.89	7.26	Jmow 164.1
188.96	9.80	17.91	50.88	2.54	25.75			239.84	12.44	AO 407.1
242.52	12.58	22.93	9.93	0.50	4.92	6.21	0.32	259.46	13.40	M 269.1
40.09	2.08	3.80	11.91	0.61	5.98			51.90	2.69	RmpJ 60.1
42.09	2.18	3.99	7.82	0.41	3.96	6.18	0.32	56.09	2.91	RJoo 86.1
44.75	2.32	4.24	15.78	0.82	7.99	4.82	0.25	65.35	3.39	RJmo 92.1
61.21	3.17	5.00	37.54	1.99	19.00			98.75	5.12	CP 239.1
114.08	5.92	10.01	4.00	0.22	2.02			118.08	6.14	JM 190.1
76.98	3.99	7.30	12.10	0.63	6.18			89.16	4.62	RJPmo 110.1
1055.26	54.73		197.56	10.25		17.21	0.89	1270.03	65.87	1927.1

Bhorda, Panej, Un and Khodia account for 85% of the area under cotton in this region. Cotton is the leading crop in Bhorda and Un. Bhorda has 50.81% of its cultivated area under cotton and Un has 58.74% of its cultivated area under cotton.

Bhorda, Navagam and Kapadia are the only villages growing banana in this sub region. But the total area under banana in this sub region is only 22.90 hectares (1.19%) of the net cultivated area of the sub region) of these Navagam has the highest area under banana (11.30 hectares) and accounts for about half the area (49.35%) under banana in sub region II of Kosindra. It is situated near Chikhoda across the bridge on the south of the river Heran and has good transport facilities to Kosindra. Kapadia is comparatively far from Kosindra. It is however served by a metal ~~lead~~ road. Bhorda is on the east of Kosindra and connected to it only by a cart track. The area under banana is very small (3.10 hectares).

Non Cash crops : Non cash crops in this sub region of Kosindra are of more importance than cash crops being 65.87% of the net cultivated area. Of the non cash crops cereals once again are the most important and rice is the major cereal crop. It is the leading crop in Panej, Sevjiपुरा, Geharpura, Simalghoda and Kapadia. Jowar is the premier crop in Navagam and Khodia. It is the 2nd important crop in the Geharpura and Kapadia and third the important crop in Bhorda and Simalghoda. Maize is the leading crop in Vadadia. It is the 2nd important crop in Navagam, Sevjiपुरा and Khodia.

Cereals occupy 54.73% of the net cultivated area of the region and Vadadia has the largest percentage (93.10% of its net cultivated area) under cereals. The second important village for cereals is Navagam 79.32% of its net cultivated area being under cereals.

Pulses occupy 10.25% of the net cultivated area of the 10 villages. It is the 2nd important crop in Panej, Bhorda, Simalghoda and Un. These villages account for more than 70% of the area under pulses in the region.

Oil seeds are a minor crop in this sub region occupying only 17.21 hectares (0.89% of the net cultivated area in the 10 villages). Vadadla, Geharpura and Simalghoda are the only villages growing oilseeds.

Sub Region III : In the 20% to 40% of influence of Kosindra also there are 10 villages.

CASH CROPS :

Cash crops are more important in subregion III than in Sub Region II occupying a little more than a half (51.90%) of the net cultivated area of this region. Cotton is the leading cash crop in this sub region and accounts for 51.66% of the total percentage of 51.90 under cash crops in this region.

Lechhas has 84.28 of its net cultivated area under cotton. Sinhadra 68.21%, Chhachhadra 62.17%, Chudahali 61.52%, Paryota 57.85% Vedadla Charengle 53.53%. Only Chudhali has good transport facility. While other villages are 1 to 5 km away from the highway. But cotton can be transported over in different transport lines.

In Sub region III banana is a very minor crop. It is cultivated only in 12.22 hectares accounting for 0.24% of the net cultivated area of the region. It is situated comparatively far from Kosindra but is linked to the Bodali Kosindra National Highway by a cart track. Transport of the banana to Kosindra by truck with a short haulage to the highway is not difficult.

NON CASH CROPS

Non cash crops occupy less than half the area (48.10%) of the net cultivated area in this sub region and is less important than cash crops. Of the non cash crops, cereals are the most important crop occupying 36.30% of the net cultivated area of the 10 villages of the sub region III. Lunadra has the largest percentage of cereals (67.80%) of its cultivated area. In Sarsinda 44.83% and Kadchhala 37.59%

TABLE : 25 CROP PATTERNS IN THE SUB REGION III OF KOSINDRA

20% to 40%

CASH CROPS

Villages	Cotton area in hec.	% of cotton to net cul. area	Banana area in hec.	% of Banana to net cult. area	% of Banana to net cult. area of 10 vill.	% of Banana to net cult. area of 10 vill.	Total of cash crop area in 10 villages
Chhechhadra	133.85	2.58	5.00	-	-	133.85	2.58
Chudheli	174.48	3.37	6.52	-	-	174.48	3.37
Lachhras	449.73	0.69	16.82	-	-	449.73	0.69
Taleti	90.49	1.75	3.38	-	-	90.49	1.75
Parvata	442.71	1.37	16.55	-	-	442.71	1.37
Lunadra	71.16	1.37	2.68	-	-	71.16	1.37
Sinhadra	410.50	7.93	15.35	-	-	410.50	7.93
Kadchhala	485.96	9.39	16.17	12.22	0.24	498.18	9.63
Sereinda	255.72	4.94	9.58	-	-	255.72	4.94
Vadadia	159.92	3.09	5.99	-	-	159.92	3.09
Chorengle.							
Total	2674.52	51.66	12.22	0.24		2686.74	51.90

TABLE 3. C2 • CROP PESTICIDES AND FUNGICIDES USED IN THE CROPS OF THE UNITED STATES

NOB CASH CROPS

Cereals area in hec.	% of Cer. of N.C. area	% to Cer. of N.C. area	% to Pulses area in hec.	% of pul. to N.C. area	% to Oil area in hec.	% of U.S. to N.C. area	% to U.S. of vill.	Total Non Cash crop/ cult. area of 10 vill.	% to net cult. area of 10 vill.	Total net
69.22	1.34	3.68	12.26	0.24	2.93	-	-	81.48	1.58	215.33 CJ
97.73	1.88	5.20	27.62	0.53	6.59	38.19	20.03	163.54	3.15	338.02 CJP
51.80	1.88	3.76	14.94	0.29	3.57	17.33	9.09	84.07	1.62	533.80 COJ
121.60	2.35	6.47	10.12	0.19	2.42	12.00	6.35	143.82	2.77	234.31RJMJD
298.39	5.76	15.88	20.54	0.40	4.90	10.31	5.41	329.24	6.36	771.95 CJ
275.60	5.32	14.66	40.44	0.78	9.65	19.12	10.03	335.24	6.47	406.32 RPD
157.49	3.04	3.38	33.97	0.66	8.11	-	-	191.46	3.70	601.96 CR
477.12	9.22	25.38	225.59	4.36	53.84	68.12	35.74	770.83	14.93	1269.01 JPD
227.10	4.28	12.08	13.23	0.26	3.16	10.31	5.41	258.64	4.85	508.36 CMJ
103.54	2.00	5.51	20.31	0.39	4.83	15.10	7.94	138.96	2.68	298.87 CJO
1879.59	36.30		419.02	6.10		190.58		2489.19	48.10	5179.93

of the net cultivated area is under cereals. Rice is the leading crop in Lunadra (51.74% of the net cultivated area) and the 2nd important crop in Sinhadra (19.65% of its cultivation area) Jowar is an important crop in Kadchhela (21.95% of its net cultivated area) and the 2nd important crop in Chhechhadra (18.77%) Vaddala Chorangla (16.79%) and Pervata (16.39%) Maize is the most important crop in Sarsinda (17.00% of its cultivated area).

Pulses are less popular in a sub region III than in the sub region II, occupying only 8.10% of the net cultivated area of the 10 villages. It is second important crop in Kadchhela occupying 17.77% and Lunadra 9.15% of their net cultivated area.

Oilseeds are of the same importance in this sub region as in I occupying 3.70% of the net cultivated area of sub region III. In this subregion it is an important crop in Kadchhela (5.36% of its net cultivated area).

Of the three sub regions of Kosindra, sub region I, is the most commercialised in agriculture cultivating both banana and cotton. Sub region II is still a non cash crop cultivating area growing a less percentage of cash crop. But sub region III has taken to commercial agriculture more than sub region II. The main cash crop in this region however is cotton and not banana. Banana cultivation is generally confined to villages near the central place village or where the transport to it is adequate, while cotton is cultivated also in villages which are far away and have only cart tracks connecting them to the Central Place village.

CON
Patterns in the Region of Bhatpur :

There are 25 villages in the study area which according to the survey conducted, fall under the influence of Bhatpur. Compared to the Vasna and Kosindra regions, Bhatpur and its satellite villages show a greater tendency towards subsistence agriculture. Cotton is the only cash crop in the region. It has not taken to cultivating the more recent cash crop of the study area namely Banana. Banana being a perishable commodity requires adequate and speedy transport facilities to the market and also good irrigation facilities. Apart from the early start which Bhatpur received with the opening of the railway, its road links are limited mainly to cart tracks and village roads. Cotton can stand the strain of slow and indifferent transport. There are many villages in the study area where it can be ginned, pressed and baled and transported to the textile towns of Gujarat. The early links of Bhatpur with Baroda, one of the leading towns of Gujarat, with a fairly developed cotton industry was an encouragement to grow cotton where its prices rose in the urban markets. However, it is difficult to distinguish between cash crops and non cash crops in a rural area. Some of the crops like cereals, pulses and oilseeds, which were originally cultivated mainly for local consumption are now increasingly finding their way to the urban markets, with the high prices and demand. For purposes of the present discussion, the crops that are classified as cash crops are cotton and banana while those classified as non cash crops are cereals, pulses and oilseeds.

TABLE : 26 Crop Patterns in the Bhatpur Region :
(percentages are to the net cultivated area of each region)

Region	Level	No. of vill-ages	CASH CROPS			NON CASH CROPS			
			Cotton	Banana	Total	Cereals	Pulses	Oil Seeds	Total
Bhatpur Map-9	—	25	49.80	—	49.80	41.13	6.70	2.37	50.20
S.R. (I)	60% & abv.	4	78.59	—	78.59	16.48	3.29	1.14	21.41
S.R. (II)	40% / 60%	10	46.70	—	46.70	41.32	9.16	2.82	53.20
S.R. (III)	20% / 40%	11	46.69	—	46.69	46.34	4.81	2.15	53.31
Bhatpur (C.P.V)	—	—	53.15	—	53.15	42.71	1.24	2.90	46.85

CASH CROPS :

The net cultivated area in the Bhatpur region is 5642.39 hectares of which cotton occupies 2835.02 hectares or 49.80%. 50.20% of the net cultivated area is still under non cash crops. Cash crops and non cash crops are almost of equal importance, the latter actually occupying a few hectares more than the cash crop. Almost all the villages however cultivate some cotton ranging from 2.82 hectares in Amarapur to 300 hectares in Jaruen. Jaruen (5.27%) Sarsinda (4.40%) and Inderal (4.04%) are the major cotton growing villages followed by Timba, Vegetha and Khunwad. These six villages account for more than half the area under cotton in the Bhatpur region. However in 15 out of 25 villages, cotton is the most important crop. In Vegetha, Sarangpur and Ramsari cotton occupies about 88% of their net cultivated area. Semaingpura, Vatvatis, Sardarpura, Chorangis, Jaruan and Gbhtoli have more than 70% of their cultivated area under cotton. There is no doubt that the Bhatpur region took to cotton cultivation with a view to making a profit in the market, like the rest of the study area. But it has been more sensitive to the recession in the cotton market which has driven the farmers of the entire study area to fall back once again on subsistence crops. This is a feature noticed only in the last couple of years.

The central place village of Bhatpur has taken to commercial agriculture to a greater extent than its region but it still has only 53.15% of its cultivated area under cotton, less than some of the villages in its influence area. Like its region it does not cultivate banana. Bhatpur has a substantial area under non cash crops (46.85% of the net cultivated area) However, the area under cotton is larger than in any other village in its region. The nobility of Bhatpur village and its rail links are an asset for commercialisation of its agriculture.

NON CASH CROPS.

The non cash crops of the Bhatpur region are cereals, pulses and oil seeds together they occupy 50.20% of the net cultivated area of the region.

143

TABLE : 27 CROP PATTERNS IN THE BHATPUR REGION

CASH CROPS

Sl. No.	Villages	Area under cotton (in hectaree).	% of Cotton to net cultivated area.	% to cotton of 25 villages.	Qanso area in hectaree
1.	Vegetha	221.49	3.89	9.76	-
2.	Sarangpur	102.80	1.81	3.62	-
3.	Ranseri	120.88	2.12	4.22	-
4.	Ransingpur	90.41	0.88	1.78	-
5.	Vatvatia	118.75	2.09	4.19	-
6.	Sardarpura	45.12	0.79	1.59	-
7.	Chorengla	165.35	2.90	5.80	-
8.	Jaruan	300.00	5.27	10.80	-
9.	Gantoli	162.84	2.86	5.74	-
10.	Kanaituva	60.23	1.06	2.12	-
11.	Songar	104.17	1.83	3.67	-
12.	Kachhote	108.24	1.90	3.82	-
13.	Kuberpura	35.19	0.62	1.24	-
14.	Intsel	230.15	4.04	8.12	-
15.	Savjinde	255.72	4.49	9.02	-
16.	Sansinde Chhochea	125.90	2.21	4.44	-
17.	Timba	224.78	3.95	7.83	-
18.	Sunderpura	40.42	0.71	1.43	-
19.	Khanwad	204.52	3.95	7.22	-
20.	Paduen	60.77	1.06	2.14	-
21.	Amroll	32.63	0.57	1.50	-
22.	Timbi	29.14	0.51	1.03	-

TABLE : 27

CROP PATTERNS IN THE BHATPUR REGION

141

Cereals area in hectares.	% of cereals to net cult. area	% to cereals of 26 vill.	Pulses in hac.	% of ex. pulses to net cult. area	% to Pulses of 26 vill.	Oil seeds area in hectares
24.73	0.43	1.05	1.72	0.03	0.45	1.10
12.14	0.21	0.51	1.42	0.02	0.37	-
13.56	0.23	0.58	2.57	0.05	0.67	-
7.33	0.13	0.31	1.94	0.03	0.51	4.12
21.41	0.38	0.91	7.31	0.13	1.92	3.12
10.34	0.28	0.44	2.21	0.04	0.58	-
38.24	0.67	1.63	8.33	0.15	2.18	5.16
83.73	1.47	3.58	77.01	0.47	7.08	3.14
59.01	1.04	2.52	5.06	0.09	1.33	3.12
28.61	0.47	1.13	5.29	0.09	1.39	-
52.50	0.92	2.24	2.52	0.04	0.66	10.12
48.78	0.86	2.08	15.53	0.27	4.07	5.12
21.35	0.38	0.85	3.92	0.06	1.03	2.10
165.44	2.91	7.07	18.52	0.29	4.33	9.15
227.10	3.99	9.70	13.23	0.23	3.49	10.31
111.53	1.96	4.76	38.56	0.68	10.10	22.15
363.97	6.39	15.93	54.81	1.01	14.36	7.12
75.17	1.32	3.21	1.17	0.02	0.30	3.18
407.52	7.16	17.40	15.74	0.27	4.12	9.30
127.08	2.23	5.43	7.60	0.13	1.99	4.16
63.66	1.11	2.72	36.00	0.64	9.57	5.10

Cereals :

Of the non cash crops cereals occupy 41.13% of the net cultivated area and is second only to cotton. Rice is the commonest cereal cultivated. It is the leading crop in Timba, Khunwad, Kothia and Deroli and the second most important crop in Amroli, Sunderpura and Indral. The other cereals are Jowar, wheat, maize and Bajra. Jowar is the leading crop in Amarpur, Padwan and Sunderpura and the second important crop in Timbi, Khunwad, Gantoli and Sarsinda Chhachha. Wheat cultivation is not very extensive in the region. It is a winter crop and requires irrigation facilities. However, some of the farmers whose per capita income has improved with the high prices of agricultural commodities are taking to wheat instead of Jowar, Bajri and Maize. In some villages of the Bhatpur region, the crop figures as the 2nd, 3rd or 4th important crop. Cereal cultivation on the whole, however, is very prevalent in the region and is second only to cotton. It is cultivated in all the villages to some extent Khunwad and Timba account for the largest area under cereals (7.16% and 6.39% of the net cultivated area of the Bhatpur region) Khanwad, Timba, Sarsinda, Indral, Deroli, Padwan and Sarsinda chhachha together account for more than half the area under cereals in the region.

The central place village of Bhatpur is still largely a cereal growing area, 42.71% of its net cultivated area being under cereals. Rice is once again the main cereal crop but wheat figures as the 2nd most important cereal in Bhatpur village. Farmers of Bhatpur who have facilities of well irrigation. The capacity to invest in hybrid varieties of wheat and fertilizers are taking up wheat cultivation. But its cultivation is still limited because of lack of water in the winter season.

Pulses :

Pulses are grown only in 6.70% of the net cultivated area in the Bhatpur region. It is the leading crop in Sarsinda Chhachha, Amroli and Timbi and the 2nd major crop in Deroli and Timba. Pulses are also cultivated in all the villages and mainly used for local consumption. Timba and Deroli have the largest area under pulses (1.91% and 0.96% respectively of the area under pulses in the Bhatpur region.

It is also comparatively an important crop in Jazwan, Anroli and Timbi. Tuber is the commonest pulse cultivated followed by mug (moong)

In the central place village of Bhatpur pulses occupy only 1.24% of the net cultivated area. It is mostly used in the village itself. It has also the facilities for getting the pulses it requires from the surrounding villages.

Oil Seeds :

Oil seeds are not cultivated to any great extent in the region. It occupies only 2.37% of the net cultivated area of the region. It is the second important crop in Ramsinghpura and Songir. Sarsinde Chnachha accounts for the highest area under oil seeds. Daroli, Timbi, Sarsinde, Songir, Indral and Anroli also have a comparatively larger area under oil seeds. Castor seed is now becoming a popular oilseed crop because of the high prices in the market and low investment.

In the village of Bhatpur the cultivation of oil seeds is more popular than that of pulses. It is cultivated in 2.90% of its net cultivated area. Til is the more traditional oil seed in the area.

Crop Patterns in the Sub regions of Bhatpur - Sub Region : I.

In the 60% and above level of its influence, Bhatpur has four villages, Kenakuva, Vagetha, Vatvafia and Kuberpara.

TABLE : "28"

CROP PATTERNS IN SUB REGION I OF BHATPUR

60% Level

TABLE : 28 : CROP PATTERNS IN SUB REGION I OF BHATPUR

60% Level		C A S H C R O P S						
VILLAGES.	Cotton area in hectares.	% of Cot. to n. c.a. in 4 vill	% to Cot. of 4 vill.	Banana area in hac.	% of N.C. A. in 4 vil.	% to Ban. of 4 vill.	Total of cash crop	% to net cult. area in 4 villages
Kanakuwa	60.23	10.86	13.82	-	-	-	60.23	10.86
Vagetha	221.49	39.96	50.84	-	-	-	221.49	39.96
Vatvatia	118.75	21.42	27.26	-	-	-	118.75	21.42
Kuberpura	35.19	6.35	8.05	-	-	-	35.19	6.35
Total	435.66	78.99					435.66	78.59

NON C A S H C R O P S

Cereals area in hac.	% of Cer. to n. c.a. vil.	% to Cer. of 4 vil.	Pulses area in hect.	% of Pul. to n. c.a. vil.	% to Pul. of 4 vil.	Oil Seeds area in hectares	% of O.S. to n. c.a. vil.	% to O.S. of 4 vil.	Total of N. C. C.	% to net cult. area in 4 villages	Total area
26.61	4.81	28.29	5.29	0.97	29.00	-	-	-	31.90	5.28	92.1
24.73	4.46	26.28	1.72	0.31	9.42	4.10	0.20	17.40	27.55	4.97	249.1
21.41	3.86	27.75	7.31	1.31	39.92	3.12	0.56	49.36	31.84	5.73	150.9
21.35	3.85	22.68	3.92	0.70	21.66	2.10	0.38	33.24	27.37	4.93	62.5
94.10	16.98		18.24	3.29		6.32	1.14		118.61	21.41	554.3

CASH CROPS :

Cotton is the leading crop in all the four villages of this region, occupying 78.59% of the net cultivated area of the 4 villages. Of these Vajetha accounts for 39.96% or more than half the area under cotton in the region. Vatvatia is the next important cultivator of cotton in the sub region. The other villages cultivate cotton only in a few hectares of land but it is the chief crop in both the villages. Cash crops dominate in this sub region occupying more than 3/4 of the cultivated area and cotton is the only cash crop. All these villages lie adjacent to Bhatpur and are easily accessible to it by cart tracks.

NON CASH CROPS :

Non cash crops occupy only a little more than a fifth (21.41%) of the net cultivated area of this sub region. Cereals once again form the most important non cash crop occupying 16.98% of the net cultivated area of the four villages. The area under cereals is more or less equally distributed in all the villages of the sub region but Kuberpara and Vajetha have a slight edge over the other two in the cultivation of cereals. Wheat is the 2nd important crop in Kanakua and maize occupies the 2nd place in Kuberpara. Being situated near Bhatpur and connected to it by an unmetalled road Kanakua is encouraged to cultivate wheat which has a market in the central place village Kuberpara is also quite close to Bhatpur and connected to it by a cart track. Neither of them however cultivate cotton to the same extent as the other two villages in the region.

Pulses are more popular amongst the farmers of this sub region than oil seeds, being cultivated in 10.14 hectares (3.29% of the net cultivated area of the sub region). Vatvatia and Kanakua account for more than half of the area under pulses in the region. Oilseeds are cultivated only in a few hectares (6.32 hectares or 1.14% of the net cultivated area) Kanakua does not cultivate any oil seeds. While Vatvatia accounts for the largest hectares (3.12 hectares) followed by Kuberpara.

SUB REGION II : In the 40% to 60% level of influence of Bhatpur there are 10 villages. Seven of them are situated north and south of the Unch river, to the north of Bhatpur. Of these Jarwan lies adjacent to Bhatpur. One village Timba has a common boundary with Bhatpur in the west. The other two villages lie to the south of the central place village. Indral, Songir and Chorengla have the facilities of metalled road links with Bhatpur while Deroli, Jarwan, Kachhata, Sunderpura, Timbi Amroli and Timba are served with unmetalled roads.

TABLE 29 : CROP PATTERNS IN THE SUB REGION II OF BHATPUR.

VILLAGES	CASH CROPS							
	Cotton area in hac.	% of Cotton to n.c. area	% to Cotton of 10 vill.	Banana area in hac.	% of Ban. to n.c. area	% to Ban. of 10 vill.	Total of cash crop	% to net cult. area in the 10 villages
Chorengla	165.35	6.19	13.26	-	-	-	165.35	6.19
Jarwan	300.00	11.23	24.05	-	-	-	300.00	11.23
Songir	104.17	3.90	8.35	-	-	-	104.17	3.90
Kachhata	108.24	4.05	8.68	-	-	-	108.24	4.05
Indral	230.15	8.62	18.45	-	-	-	230.15	8.62
Timba	224.78	8.41	18.02	-	-	-	224.78	8.41
Sunderpura	40.42	1.51	3.24	-	-	-	40.42	1.51
Amroli	32.63	1.22	2.61	-	-	-	32.63	1.22
Timbi	29.14	1.09	1.83	-	-	-	29.14	1.09
Deroli	12.03	0.48	1.01	-	-	-	12.03	0.48
Total	1246.91	46.70		-	-	-	1246.91	46.70

Table 29

Name of the village	NON CASH CROPS												
	Cereals area in hectares to net vill.	% to cereals area of 10 net vill.	Pulses area in hec. to net 10 c.a. vill	% to Pulses area of 10 net c.a. vill	Oilseeds area in hec. to net 10 c.a. vill	% to Oilseeds area of 10 net c.a. vill	Total area of 10 c.c. net vill.	% of non net cul. area	Total net cultivat. area	Code			
Choranga	38.24	1.43	3.46	8.33	0.31	3.40	5.16	0.19	6.85	51.73	1.93	217.08	C
Jarvan	83.73	3.14	7.58	22.01	1.00	11.03	3.14	0.11	3.17	113.88	4.26	413.88	C
Songir	52.50	1.97	4.76	2.52	0.09	1.02	10.12	0.38	13.45	65.14	2.44	169.31	COU
Kachhate	48.78	1.83	4.42	15.53	0.59	6.18	5.12	0.19	5.80	69.43	2.60	177.67	CPO
Indral	165.44	6.20	14.99	16.52	0.62	6.75	9.15	0.34	12.16	191.11	7.16	421.26	CRT
Timba	363.57	13.62	32.95	54.81	2.05	22.39	7.12	0.27	9.46	425.60	15.94	650.28	RPV
Sundarpura	75.17	2.81	6.51	1.17	0.34	0.47	3.13	0.11	4.22	79.52	2.96	119.94	JRNC
Amroll	63.66	2.38	5.77	36.50	1.37	14.94	5.10	0.19	6.78	105.26	3.94	137.59	PRJC
Timbi	69.92	2.61	6.34	28.97	1.08	11.83	12.00	0.44	15.95	110.89	4.13	140.03	PRJMC
Derol	142.22	5.33	12.92	53.34	2.01	21.79	15.13	0.60	20.16	210.69	7.94	227.72	PRMJC
	1103.23	41.32		244.70	9.16		75.22	2.82		1423.15	53.30	2670.06	

CASH CROPS:

Cash crops in this sub region of Bhatpur are of less importance than non cash crops being only 46.70% of the net cultivated area.

Jarwan, Indral, Timba and Chorangla account for more than half of the area under cotton in this region. Cotton figures as the leading crop in Chorangla, Jarwan, Songir, Kachhata and Indral, although Kachhata and Songir account for only 212.41 hectares out of a total of 1246.91 hectares under cotton in the region.

NON CASH CROPS:

Of the non cash crop cereals once again are the most important and rice is the major cereal crop. It is the leading crop in Timba and the 2nd major crop in Indral, Sunderpura and Anroli. Jowar is the premier crop in Sunderpura and the 2nd in importance in Timbi. Rice is generally eaten by the better class farmers while Jowar, bajri and maize are the staple cereals of the fourth class people. Some wheat is grown in this sub region in the villages of Indral, Timba and Songir but it is only a minor crop.

Cereals occupy 41.32% of the net cultivated area of the region and Timba and Indral account for the highest hectareage under cereals.

Pulse cultivation is more important in Sub region II than in the 1st sub region, occupying 9.16% of the net cultivated area of the 10 villages. It is the leading crop in Timbi and Anroli but Timba and Deroli account for the largest area under pulses. Timba, Deroli, Anroli, Timbi and Jarwan together account for nearly 5/6 of the total area under pulses in the sub region.

Oilseeds are a minor crop in this region as in sub region I occupying only 75.22 hectares (2.82% of the net cultivated area in the 10 villages). Deroli, Timbi, Songir and Indral are the major villages contributing to the area under pulses in the region.

Sub Region III :

In the 20 to 40% level sub region of Bhatpur, there are 11 villages. The pattern of crop cultivation in this region is more or less the same as in sub region II.

TABLE : 30 CASH PATTERNS IN THE SUB REGION OF BHATPUR

20% to 40%

Villages	Cotton area in hec.	% of cotton to n.c. area	% to cotton in hec. of 11 vill.	Banana area in hec. to n.c. area	% of Banana to n.c. area	% to Banana of 11 vill.	Total of cash crop	% to net cult. area in 11 vil.
1. Sarangpur	102.80	4.17	8.92	-	-	-	102.80	4.17
2. Ramsari	120.78	4.89	10.68	-	-	-	120.78	4.89
3. Ramasingpura	50.41	2.04	4.37	-	-	-	50.41	2.04
4. Sardarpura	45.12	1.83	3.91	-	-	-	45.12	1.83
5. Gantoli	162.84	6.60	14.13	-	-	-	162.84	6.60
6. Sarsinda	258.72	10.36	22.18	-	-	-	258.72	10.36
7. Sarsinda Chhachha	125.90	5.10	10.92	-	-	-	125.90	5.10
8. Khunwad	204.62	8.29	17.75	-	-	-	204.62	8.29
9. Paduan	60.77	2.46	5.27	-	-	-	60.77	2.46
10. Kothia	20.67	0.84	1.79	-	-	-	20.67	0.84
11. Amarpur	2.82	0.11	0.28	-	-	-	2.82	0.11
Total	1152.45	46.89	-	-	-	-	1152.45	46.89

30

NON CASH CROPS.

Cereals area in hec.	% to to n.c. area vil.	% to of 11 hec. vil.	Pulses area in hec.	% to to net cult. area	% to pl. pl. area in 11 hec. vil.	Oil Seeds area in hectare	% to to n.c. area vil.	% to of 11 hec. vil.	Total of n. c.c.	% to net cult. area	Total net cult. area
12.14	0.49	1.06	1.42	0.06	1.99	-	-	-	13.56	0.55	116.36 C
13.56	0.55	1.18	2.57	0.10	2.16	-	-	-	16.13	0.65	136.91 C
7.33	0.30	0.64	1.98	0.08	1.63	4.12	0.17	7.75	13.39	0.55	63.80 CD
10.34	0.42	0.90	2.21	0.09	1.86	-	-	-	12.55	0.51	857.67 CM
59.01	2.39	5.16	5.06	0.20	4.26	3.12	0.13	5.87	67.19	2.72	230.03 CD
127.10	9.20	19.85	13.23	0.53	11.18	10.31	0.42	19.39	150.64	10.15	506.36 CM
111.53	4.52	9.75	28.56	1.56	32.50	22.15	0.90	41.66	172.24	6.98	298.14 CD
107.52	16.51	36.60	15.74	0.64	13.26	9.30	0.38	17.69	432.56	17.53	637.18 CD
127.08	5.55	11.11	7.60	0.31	6.40	4.16	0.15	7.64	139.84	5.51	199.61 CD
96.10	3.89	8.40	17.07	0.72	14.38	-	-	-	113.17	4.61	133.84 CD
72.06	2.92	6.33	13.23	0.53	11.18	-	-	-	95.29	3.45	88.11 CD
143.77	46.34	118.63	4.82			53.16	2.15		1315.56	53.31	2468.01

SUB REGION III :

In the 20 to 40% level sub region of Bhatpur, there are 11 villages. The pattern of crop cultivation in this region is more or less the same as in sub region II.

CASH CROP : As in sub region II, cash crops occupy less than half of the net cultivated area in sub region III. But cotton is the leading crop in six villages of the sub region II namely Sarangpur, Ramsari, Ramsingpura, Sardarpura, Gantoli and Sarsinda. In Sarangpur and Ramsari, cotton is cultivated in more than 86% of their cultivated land while in the other four villages the percentage of cotton to their net cultivated area ranges from 50.53 to 79.03. But the largest area under cotton is found in Sarsinda followed by Khunwad, Gantoli, Sarsinda Chhachha, Ramsari and Sarangpur. These six villages account for more than half the area under cotton in the region.

Of the 11 villages, six namely Amarpur, Ramsingpura, Padvan, Sarangpur, Kothia and Gantoli are situated north and south of the heran river, to the south of Bhatpur. They are only a short distance from the Bhatpur-Indral metalled road and the Indral-Kosindra unmetalled canal road. The railway also passes through Padvan and Gantoli and the other villages are close to these railway stations. Ramsingpura, Sardarpura and Sarsinda are to the east and north east of Bhatpur and connected to it by unmetalled road and cart track. Sarsinda Chhachha is to the north of river Unoh and quite close to the Bhatpur-Sunderpura unmetalled road. Khunwad is to the south west of Bhatpur and is served by a metalled road via Indral-Songir. These villages are encouraged to cultivate cotton although comparatively at a distance from Bhatpur because of their accessibility, not only to Bhatpur but also because of their direct connections to the other central places in the region and with the towns in the plains of Gujarat.

NON CASH CROPS.

Of the non cash crops in the region, cereals again are the most important occupying almost the same hectareage as cotton (46.34% the net cultivated area of the sub region. Rice is the leading crop in Khunwad and Kothia while Jowar takes the first place amongst the cultivated crop in Amarpur and Padvan and the second place

in Sarsinda Chhachha and Khunwad. Khunwad accounts for the largest area under cereals (407.52 hectares or 16.51% of the net cultivated area of the sub region) It contributes more than 1/3 of the total area under cereals in the region (35.62%). It is followed by Sarsinda and Padwan.

Pulses are less popular in sub region III than in the 2nd region, occupying only 4.81% of the net cultivated area. However, it is the leading crop in Sarsinda Chhachha occupying 12.93% of its net cultivated area and accounting for 32.50% of the area under pulses in the region.

Oilseeds are of the same importance in this region as in region II occupying 2.15% of the net cultivated area of the 11 villages. It is not the leading crop in any village and some of the villages do not grow them. Sarsinda Chhachha accounts for 41.66% of the total area under oil seeds in this region but the hectareage under oil seeds in this region is only 22.15. Sarsinda and Khunwad account for 19.39% and 17.49% of the total oil seed area in the 20% to 40% level region.

Of the three sub regions of Bhatpur, sub region I shows the greatest tendency towards commercialisation of agriculture, cotton occupying more than 3/4 of the net cultivated. It is the region most closely associated with Bhatpur and is also located nearest to the central place village. Cereals, which is very important in the other two regions figure as a poor, second to cotton in this region accounting for less than a fifth of the net cultivated area. Non cash crops on the whole occupy only a little more than 1/5 of the net cultivated area. Pulses and oilseeds are almost negligible.

In the sub region II & III which are associated with the central place to a lesser degree than the first sub region I cash crops account for less than half the cultivated area. Of the non cash crop, cereals dominate in both regions being almost as important as the cash crop, cotton, pulses are of greater importance in sub region II than in sub region III while oil seeds occupy a minor place in both regions.

VASNA REGION :CROP PATTERNS IN THE REGION OF VASNA :

There are 26 villages in the influence area of Vasna. Sarsinda is the only village which is under the influence of all the three central place villages. Sarangpur falls under the influence area of Bhatpur and Vasna but not under that of Kosindra. All other villages in this group are under the influence of both Vasna and Kosindra. Vasna is a central place village mainly because of certain special facilities such as the police chowky (Photo 5) irrigation office (Photo 4) primary health centre and family planning centre (Photo 6) Economically and culturally Kosindra and Bhatpur have better facilities than Vasna. But Vasna situated very close to Kosindra, enjoys all the advantages of the state highway which serves the eastern sector of this study area. The Kosindra Vasna region has a better network of all weather roadways than the Bhatpur region of the western sector. Vasna is only one km away from the eastern state highway No.5.

The influence of Vasna and Kosindra becomes weak towards the west of the study because of the physical (Lachhraa and Kanakua hills) and drainage barriers giving Bhatpur a comparatively exclusive area as its influence region.

Table 31 : Crop Patterns in the Vasna Region (% are to the net cultivated area of each region)

Region	Level	No. of Villages	CASH CROP			NON CASH CROP			
			Cotton	Banana	Total	Cereals	Pulses	Oilseed	Total
Vasna Region Map.13	-	26	45.89	6.09	51.98	38.11	7.22	2.69	48.02
S.R.(I)	60% & above.	5	57.47	-	57.47	35.51	4.71	2.31	42.53
S.R.(II)	40%/60%	2	27.81	-	27.81	67.58	2.96	1.65	72.19
S.R.(III)	20%/40%	19	41.84	9.29	51.13	37.31	8.72	2.84	48.87
Vasna C.P.V.	-	-	65.09	13.33	78.42	15.50	6.08	-	21.58

CASH CROPS :

The net cultivated area in the Vaana region is 8517.91 hectares of which cotton occupies 3909.26 hectares or 45.89% and banana, 520.18 hectares or 6.09% of the cultivated land. Together cash crops occupy 51.78% of the net cultivated area. Cash crops are therefore more important than non cash crops in this region as in the Kosindra region. The major cotton cultivating villages are Kadchhala, Lachhras, Parvata, Sinhadra, Kosindra and Sarsinda. These six villages cultivate 27.23% of the total area under cotton in this region. Cotton is the leading crop in 12 of the 26 villages. In Lachhras, it occupies 84.28% of the net cultivated area, while in Sinhadra it occupies 68.21%. Kosindra, Parvata and Sarsinda have more than half their net cultivated area under cotton. Lachhras is the leading village in the Vaana region for cotton cultivation. The shahs who own more than 70% of the village area are very rich and cultivate cotton for the market. The scheduled castes are tribals who are the permanent residents of this village cultivating for the rich land owners.

The second cash crop of this region is banana. Banana occupies 6.09% of the net cultivated area of the region. Chikhodra and Sargi which are also in the influence area of Kosindra are the main villages cultivating banana. The other villages important for banana ^{Cultivation} in this region cultivation are Kosindra, Rajbodali and Deaan. All these villages are situated adjacent to Vaana. These five villages together account for more than 93.85% of the total area under banana in the Vaana region. Kosindra which cultivates banana falls under the influence of Vaana for certain of the services available in that village.

The farmers of the central place village of Vaana like those of Kosindra are far more aware of the advantages of cultivating commercial crops than the farmers of Bhatpur, 78.42% of its cultivated area being under cash crops, (65.09% under cotton and 13.33% under banana) Vaana however is slightly behind Kosindra in the commercialisation of its agriculture. Kosindra is situated on the State Highway No.5 while Vaana is a kilometre away from this road.

NON CASH CROPS :

As in Kosindra non cash crops are of less importance than cash crops in the Vaena region but compared to the Bhatpur region it is more commercialised. Non cash crop occupy less than half of the cultivated area of the Vaena region (48.02%)

Cereals :

Cereals are the most important (38.11%) of the non cash crops as in the other two regions and rice is the main cereal cultivated. It is leading the crop in 8 villages of 26 villages. The highest area is found in Lunadra where 51.74%, in Desan, 49.23% and in Kapadia 44.78% of their net cultivated area is under rice. In Lunadra 59.10% of the land owners are Patels of Vaena and they grow rice for consumption and market. Desan and Kapadia also grow rice as their population is largely of higher castes (Non scheduled). The other villages where rice is a leading crop are Panaj, Sevjiपुरा, Gehappura, Simalghoda and Taleti. Jowar is the leading crop in Navagam. Kbadia, Kadchhala. It is also grown in Gehappur, Simalghoda, Sevjiपुरा, Chhachhadra, Vadedla chorangla and Parvata. As in the Kosindra region wheat is the second important cereal in the Vaena region. Wheat is cultivated in about 8 villages in the region and in one village it is the 2nd most important cereal. These eight villages are the same as those of the Kosindra region.

The central place village of Vaena has a larger percentage (15.50) of its net cultivated area under cereals than Kosindra. Its agriculture is thus less commercialised than that of Kosindra.

Pulses :

Pulses are grown only in 7.22% of the net cultivated area in the Vaena region. It is the 2nd important crop in Kadchhala, Panaj, Un, Lunadra and Simalghoda of their own netcultivated area. But Kadchhala accounts for 36.42% of the area under pulses of 26 villages of Vaena region and it is the highest in the Vaena region.

TABLE : 32

CROP PATTERNS IN THE VASWA REGION

NON CASH CROPS.

159

Cereals area in hectares	% of Cereals to not cultivated area.	% of cereals of 26 villages.	Pulses area in hectares	% of Pulses to not cultivated area.	% to pulses of 26 villages.	Oil seed area in hectares	% of oil seeds to net cul- tivated
477.12	5.60	14.70	225.59	2.65	36.42	68.12	0.80
553.38	0.63	1.66	10.15	0.12	1.64	16.13	0.19
51.80	0.61	1.60	14.24	0.18	2.41	17.33	0.20
299.39	3.50	9.20	20.54	0.24	3.32	10.31	0.12
157.49	1.85	4.85	33.97	0.40	5.48	-	-
25.29	0.30	0.78	2.73	0.03	0.44	-	-
227.10	2.67	6.99	13.23	0.16	2.14	10.31	0.12
77.55	0.91	2.39	5.01	0.06	0.81	-	-
97.73	1.15	3.02	27.62	0.32	4.46	26.13	0.48
198.96	2.22	5.82	50.68	0.59	8.21	-	-
12.14	0.14	0.37	1.42	0.01	0.23	-	-
103.54	1.22	3.19	20.31	0.24	3.28	15.10	0.18
61.21	0.72	1.89	37.54	0.42	6.06	-	-
60.63	0.71	1.89	10.13	0.12	1.54	-	-
69.22	0.81	2.13	12.26	0.14	1.98	-	-
121.60	1.42	3.75	10.12	0.12	1.63	12.10	0.14
22.39	0.27	0.71	4.47	0.06	0.80	-	-
114.03	1.34	3.52	4.00	0.05	0.65	-	-
275.60	3.24	8.49	43.44	0.47	6.53	19.12	0.22
171.66	2.02	5.29	11.18	0.08	1.16	-	-
42.09	0.49	1.30	7.82	0.09	1.26	6.18	0.07
44.75	0.53	1.38	15.78	0.19	2.55	4.82	0.06

TABLE : 32 :

CROP PATTERNS IN THE
VASNA REGION.

CASH CROPS

160

Sr. No.	Villages	Cotton area in hectares.	% of Cotton to net cultivated area.	% to Cotton of 26 villages.	Banana area in hectares.
1.	Kadchhala	485.56	5.71	12.45	12.22
2.	Keeindre	272.53	3.20	6.97	105.21
3.	Lachhres	449.73	5.28	11.55	-
4.	Parvate	442.71	5.20	11.35	-
5.	Sinhadra	410.50	4.82	10.50	-
6.	Chikhodra	100.32	1.18	2.57	187.45
7.	Sessinda	253.72	3.02	6.46	-
8.	Sargi	32.68	0.38	0.94	149.09
9.	Chuchali	174.48	2.05	4.46	-
10.	Panej	167.67	1.97	4.29	-
11.	Seraneapur	102.80	1.21	2.63	-
12.	Vadadia Chhorangla	159.92	4.09	-	-
13.	Un	140.50	1.65	3.59	-
14.	Rajbodoli	113.70	1.33	2.91	27.40
15.	Chhachhedra	133.85	1.57	3.42	-
16.	Taleti	90.49	1.06	2.31	-
17.	Khereda	87.45	1.02	2.23	-
18.	Khodia	72.16	0.85	1.85	-
19.	Lunadra	71.16	0.83	1.82	-

In the central place village of Vasna pulses occupy of the net cultivated area. It is a more important crop here than in Bhatpur and Kosindra regions. They have a good market and state highway No.5 is only 1 km. away from the village.

OIL SEEDS

Oil seeds are a minor crop in the Vasna region. The villages which cultivate oil seeds are the same as in the Kosindra region. Kedchhala accounts for 30.42% of the oil seeds of the Vasna region although it is only third in importance amongst the crops in that village, while Chudhali is the second (17.08%) amongst the villages of Vasna region.

CROP PATTERNS IN THE SUB REGIONS OF VASNA

SUB REGION : I

There are five villages in the 60% and above level of influence of Vasna namely Sinhadra, Lunadra, Taleti, Lachhras and Parvata. All these villages are in the 20% level of influence of Kosindra.

TABLE : 33 CROP PATTERNS IN THE SUB REGION OF VASNA

60% Level		C A S H C R O P S						
Villages	Cotton area in hec.	% of Cot. to N. C.A	% to Cot. of 5 vill	Banana area in hec.	% of Ban. to N.5 vil. C.A.	% to Ban. of vil.	Total of cash crop.	% to net cultivated area in 5 villages.
Sinhadra	410.50	16.11	28.03				410.50	16.11
Lunadra	71.16	2.79	4.86				71.16	7.79
Taleti	90.49	13.55	66.18				90.49	3.55
Lachhras	449.73	17.65	30.71				449.73	17.65
Parvata	442.71	17.37	30.22				442.71	17.37
Total	1464.59	57.47					1464.59	57.47

Cereals area in hec.	% of Cer. to net. cul.area	% to Cer. of 5 vil.	Pulses area in hec.	% of Pul. to n. c.a. vil.	Oil seeds Area in hect.	% of O.S. to n. c.a.	% to O.S. of 5 vill.	Total of non cash crop	% to net cult. area	Total net cultivated area
157.49	6.18	17.40	33.39	28.30	28.30			191.46	7.51	601.95 CR
275.60	10.81	30.35	40.44	1.59	33.70	19.12	0.76	335.16	13.16	406.32 RP
121.60	4.77	13.44	10.12	0.39	8.43	12.10	0.47	143.82	5.63	234.31 RD
51.80	2.03	5.72	14.94	0.59	12.44	17.33	0.68	84.07	3.30	533.80 CO
228.35	11.72	33.09	20.54	0.81	17.13	10.31	0.40	329.24	12.93	771.95 C
904.88	35.51		120.01	4.71	58.86	2.31		1083.75	42.53	2548.34

CASH CROPS :

Cash crops occupy 57.47% of the net cultivated area of the 5 villages. Cotton is the only cash crop in the region. It does not cultivate banana. Lachhres accounts for 17.65% of the area under cash crops in the region. Parvata is the next important cultivator of cash crop (cotton) in the sub region followed by Sinhadra. Cotton is leading crop in Lachhres, Parvata and Sinhadra. Lachhres has 84.28% of its cultivated area under cotton, Parvata 57.85% and Sinhadra 68.21%. Of these Lachhres has the highest hectares (449.73) under cotton cultivation. It accounts for about a third of the total area under cotton in this region.

NON CASH CROPS :

Non cash crops occupy only less than a half (42.53%) of the net cultivated area of this sub region. Cereals occupy a more important place in sub region I of Vanna than in the corresponding regions of Bhatpur and Kosindra. 35.51% of the net cultivated area of the sub region being under cereals. Parvata accounts for a third of area under cereals. Parvata accounts for a third of area under cereals in this region. Jowar is the 2nd important crop after the cotton in Parvata and the most important cereal. More than half its population belongs to the scheduled caste and they cultivate it as a subsistence crop. Rice is the important crop in Lunadra and Taleti, wheat is cultivated in Taleti and Lachhres while jowar is 2nd important in Taleti.

Pulses are grown in a small area (4.71%) in sub region I. Lunadra has the largest area under pulses (40.44 hectares) i.e. 1/3 of the pulses area in this sub region of Vanna. Sinhadra is the next important pulse growing village.

Oil Seeds.

Oil seeds are grown only in 2.31% of this sub region I. Lunadra has the highest area (19.12 hectares) under oilseeds in this sub region I although it is only the 3rd important crop in this village. Lachhres is the next important pulse growing village in this region and it grows also the second important crop in the village.

SUB REGION : II

In the 40 to 60% level of influence of Vasna there are 2 villages Vadadla and Sarangpur. Vadadla is also in the 40% level of influence of Koeindra. Sarangpur falls under the 20% level of influence of Bhatpur central place.

TABLE : 34 CROP PATTERNS IN THE SUB REGION II OF VASNA

40% level		VASNA SUB REGION : II						C A S H C R O P		
Villages.	Cotton area in hac.	% of Cot. to c.a. vil.	% to Cot. of 2 vil.	Banana area in hac.	% of Ban. to c.a. vill.	% to Ban. of 2 vill.	Total of cash crop	% to net cult area in 2 vil		
Sarangpur	102.80	27.28	98.09	-	-	-	102.80	27.28		
Vadadla	2.00	0.53	1.91	-	-	-	2.00	0.53		
Total	104.80	27.81		-	-	-	104.80	27.81		
NON CASH CROP										
Cereals area in hac.	% of Cer. of n. of c.a. vil.	% to Cer. of 2 vil.	Pulses area in hac.	% of Pul. to c.a. vil.	% to Pul. of 2 vil.	Oilseeds area in hect.	% of O.S. to nca 2 vil.	% to O.S. of N.C.C. of 2 vil.	Total net c.a. area.	% to Total net.cu area.
12.14	3.22	4.77	1.42	0.38	12.73	-	-	-	13.56	3.80
242.52	64.36	95.23	9.73	7.58	87.27	6.21	1.65	100.00	258.46	68.59
254.66	67.58		11.15	2.96		6.21	1.65	272.02	272.02	72.19

CASH CROP :

Cash crops in this sub region of Vasna are of less importance than non cash crops being only 27.81% of the net cultivated area. Cotton is the only cash crop in this region as in sub region I. Sarangpur accounts for 98.09% of the area under cotton in Sub Region II. Sarangpur comes under the influence of both Vasna and Bhatpur. Its land is mostly owned (84.04%) by Bhatpur's Patels who cultivate cotton for market. Vadadla the other village in this sub region is not an important cotton cultivator.

NON CASH CROPS :

Non cash crops in this sub region of Vasna are of more importance than cash crops being 67.58% of the net cultivated area which is nearly the same as Kosindra's sub region II. Vadadla grows most of the cereals in this region (64.36%) of the net cultivated area of the sub region II. It is leading village for cereals in the study area. The main cereal grown is maize (80.69% of its net cultivated area). It is also a crop of scheduled castes and tribes who account for 63.85% of its population. The hilly (sandy) soil is suitable for maize cultivation.

Pulses occupy 2.96% of the net cultivated area of the 2 villages and Vadadla accounts for most of the ^{area} under pulses.

Oilseeds occupy only 6.21 hectares, 1.65% of this sub region and only Vadadla grows these crops.

SUB REGION : III

In the 20% to 40% level of influence of Vasna there are 19 villages including Kosindra. Vasna has some special functions such as those of the Police Chowky and Primary health centre. These take the influence of Vasna over a considerable number of villages in the study area. These villages are also influenced by Kosindra. Except for Bhorda all the villages are served both by Kosindra and Vasna, of these 5 (Chudhall, Sarsinda, Kadchhola, Chhachhadra, Vadadla-Choranga) are in the 20% level influence of Kosindra, also nine villages

namely Vadadla, Kapadia, Savjipura, Panej, Khodia, Un, Simalghoda, Navagam and Geharpura fall under the 40% level of influence of Kosindra while the other five villages (Rajbadeli, Chikhodra, Sargi, Dasan and Kherada) are in the 60% level of influence of Kosindra. Vasna itself is in this level of influence of the Kosindra village.

TABLE 35 CROP PATTERNS IN THE SUB REGION III OF VASNA

20% level

CASH CROPS.

Villages	Cotton area in hec.	% of Cot. to net c.a.	% to Cot. of 19 vil.	Banana area in hec.	% of Ban. to net c.a.	% to Ban. of 19 Vill.	Total of cash crop area in hec.	% to net cult. area in the 19 villages
Kosindra	272.53	4.87	11.65	106.21	1.88	20.73	377.14	6.75
Rajbadeli	113.70	2.03	4.86	27.40	0.49	5.27	141.10	2.52
Chikhodra	100.32	1.80	4.29	187.45	3.35	36.04	287.77	5.15
Sargi	32.68	0.58	1.39	144.00	2.56	28.64	181.68	3.24
Dasan	50.41	0.90	2.55	19.10	0.34	3.67	69.51	1.24
Kapadia	12.89	0.23	0.55	8.60	0.15	1.63	21.39	0.38
Savjipura	8.32	0.15	0.36	-	-	-	8.32	0.15
Panej	167.67	2.99	7.17	-	-	-	167.67	2.99
Khodia	72.16	1.29	3.09	-	-	-	72.16	1.29
Un	140.50	2.51	6.00	-	-	-	140.50	2.51
Chudhali	174.48	3.14	7.46	-	-	-	174.48	3.14
Simalghoda	27.50	0.49	1.17	-	-	-	27.50	0.49
Kherada	87.45	1.57	3.74	-	-	-	87.45	1.57
Navagam	13.66	0.24	0.58	11.30	0.20	2.17	24.91	0.44
Geharpura	30.15	0.54	1.29	-	-	-	30.15	0.54
Sarsinda	255.72	4.57	10.93	-	-	-	255.72	4.57
Kadchhala	485.96	8.69	20.77	12.22	0.22	2.35	498.18	8.91
Chhachhadra	133.85	2.39	5.72	-	-	-	133.85	2.39
Vadadla Chorangle	159.92	2.86	6.83	-	-	-	159.92	2.86
Total	2339.87	41.85		520.16	9.25		2860.05	61.13

NON CASH CROPS.

Table-35

Cereals area in hectare. to n. of c.a. vil.	% of car. area of 19 in hec. area vil.	Pulses area in hec. of 19 c.a. vil.	% of Pul. area to n. of c.a. vil.	% of Pul. area to n. of 19 c.a. vil.	Oil Seeds Area in hectares of 19 vil.	% of O.S. to n.c. area	% to O.S. of 19 crops	Total of non cash cult. area	% to net cultivated area	Total net cultivated area		
53.88	0.97	2.58	10.15	0.18	2.00	16.13	0.29	10.15	80.16	1.44	457.90	CBMD
60.63	1.08	2.90	10.13	2.08	-	-	-	70.76	1.26	211.86	315.79	CBJM
25.29	0.45	1.21	2.73	0.05	0.56	-	-	-	28.02	0.50	264.24	BM
77.55	1.39	3.72	5.01	0.09	1.02	-	-	-	82.56	1.48	248.35	BJM
171.66	3.07	8.22	7.18	0.13	1.47	-	-	-	178.84	3.20	110.55	RMW
76.98	1.38	3.69	12.18	0.22	2.49	-	-	-	89.16	1.60	60.22	RMPJ
40.09	0.72	1.92	11.81	0.21	2.42	-	-	-	51.90	0.93	407.51	RP
188.96	3.38	9.06	50.88	0.91	10.42	-	-	-	118.08	4.29	190.24	JM
114.08	2.04	5.47	4.00	0.07	0.82	-	-	-	118.08	2.11	239.25	LP
61.21	1.09	2.93	37.54	0.67	7.69	-	-	-	98.75	1.76	338.02	CJOP
97.63	1.75	4.69	27.62	0.49	5.66	38.19	0.68	24.04	163.54	2.92	115.31	EPJMO
44.75	0.08	2.15	15.78	0.28	3.23	4.82	0.08	3.03	65.35	1.16	115.31	C
22.89	0.41	1.09	4.97	0.08	1.02	-	-	-	27.86	0.49	164.85	JHBM
130.80	2.34	6.27	9.09	0.16	1.86	-	-	-	139.89	2.50	86.24	RJPD
42.09	0.75	2.02	7.82	0.13	1.60	6.18	0.12	3.89	56.09	1.00	506.36	CMJ
227.10	4.06	10.88	13.23	0.24	2.70	10.31	0.18	6.49	250.64	4.46	1269.01	JPO
477.12	8.33	22.88	225.59	4.03	46.21	68.12	1.22	42.90	770.83	13.78	215.33	CJ
69.22	1.24	3.32	12.26	0.22	2.51	-	-	-	81.48	1.46	298.87	CJO
103.54	1.86	5.00	20.31	0.38	4.16	15.10	0.27	9.50	138.95	2.51	5592.75	
2085	37.31	488.28	8.72	158.85	2.84	2732.70	48.87	5592.75				

CASH CROPS :

Sub region III of Vaena is more commercialized than sub region II. However of these villages fall under the 60% or 40% level of Kosindra which has good facilities of transport. Cash crops occupy little more than a half (51.13%) of the net cultivated area of this region. Both cotton and banana are cultivated but the former is the leading cash crop. It accounts for 41.84% of the total percentage of 51.13 under cash crops in this region. Khareta Chhachhadra, Chudleli, Kosindra, Un, Vadadia Choranga and Sarsinda have more than half their net cultivated area under cotton. Of these Kosindra and Khareta have direct links with state highway, while the other villages are joined to Vaena by metalled and unmetalled and cart tracks with this highway.

In the 20% level region of Vaena banana cultivation is comparatively important, than in the other two sub regions. Eight of the villages of this region cultivate banana. Four of these villages Rajbodali, Chikhodra, Sergi and Desan are in the 60% level of influence of Kosindra and as such are more linked with Kosindra economically. Kapadia and Navagam are in the 40% level of influence of Kosindra while Kadchhala which cultivates banana only to extent of 0.22% of the net cultivated area of sub region III of Vaena is in the influence area of 20% level of both Vaena and Kosindra. The least village in this group is Kosindra itself which has 22.97% of its net cultivated area under banana but accounts for 1.88% of the net cultivated area of sub region III of Vaena. 9.29% of 51.13% under cash crops is under banana. Chikhodra is the most important banana growing village in the region followed by Sergi, Kosindra, Rajbodali, Desan, Kapadia, Kadchhala and Navagam also grow some banana.

NON CASH CROPS

Non cash crops occupy less than a half (48.87%) of the net cultivated area in this sub region. Of the non cash crops cereal are the most important crop occupying 37.31 of the net cultivated area of the 19 villages of sub region III. Of these Navagam has the

highest percentage 79.32 of its net cultivated area being under cereals. In Kapadia, Desan and Khodia have more than 60% of the net cultivated area under cereals. Rice is the leading crop in Desan, Kapadia, Panaj, Savjipura, Geharpura and Simalghoda. Jowar is leading crop in Navagam, Khodia and Kadchhala. While it is the 2nd important crop in Geharpura, Chhachhada, Rajbodali, Chudhali, Sargi and Kapadia. Maize is the most important crop in Navagam, Khodia, Savjipura and Sarsinda.

Pulses are more popular in the sub region III than in I and II region, occupying 8.72% of the net cultivated area of the 19 villages. While in Region I it occupies only 4.71% and in Region II only 2.96% of the net cultivated area of the respective sub region. It is second important crop in Kadchhala, Simalghoda, Un and Panaj.

Oilseeds are a minor crop in all the three sub region but sub region III cultivates slightly more of oil seeds than the other two regions. It is third important crop in Chudhali, Kadchhala and Vadadia Chorangia.

Of the three sub regions of Vasna, Sub region I is the most commercialised in agriculture followed by sub region III, but while sub region I cultivates only cotton, sub region III cultivates both banana and cotton. Sub region II is comparatively more of a non cash crop region and cotton is the only cash crop.

Vasna is joined with Bhatpur by only unmettled and canal roads which are impossible in monsoon. Vasna and Kesindra have all weather road facilities which enables these villages to cultivate cash crops.