CHAPTER – II

POPULATION

Population, according to Trewartha, is that phenomenon around which rotates all geographical elements He further says that population serves as the point of reference from which all other geographic elements are observed and from which they all singly or collectively derive significance and meaning

Land use sans population has no meaning It is this vital factor that allots values to land according to its capacities Thus the concept of general land use, and crop land use has accrued from the allotted functions to different pieces of land In a region or any unit area the functions carried out by man have their spatial significance According to Adam Smith, "Land performs dual functions, it gives resources and provides room for the work". In this context both general and particular uses of land have great significance for people inhabiting any area The categorization of the uses of land are found almost uniform throughout the world. In our country the various categories and their sub-categories are exactly based on their respective functions, but all these functions are given to them by the population of the area Further, it is that vital factor which above all, brings frequent changes in the allotted functions of land subject to the priority of uses. Not only the functions are being allotted to land but man has the ingenuousity to allot capacities and sustainability also to the land. Thus man grants not only the values, but also the added values to land, as finally all his dependence goes to land only

In the land use studies of the two talukas of Baroda District this fact is brilliantly reflected that the people of the respective talukas have used their land, particularly their crop land with the proper judgement of the natural capability of their land This is the reason why the cropping pattern of the two talukas have been found varying with each other

Population, on one hand, governs the land and its capabilities and on the other hand is governed by it This aspect reflects the varying patterns of the population distribution and density

Distribution and Density :

Distribution and Density of population is always governed by the maxim "Man lives there where the land has the capability to support him" It means that the population distribution is not an accidental but is a well thought out plan This is well reflected from the pattern of population distribution in the two talukas under study.

PADRA

Table 2.1 gives the ranges of absolute population in Padra taluka and its three regions at the two points of time 1960-61 and 1990-91.

Table 2 1

Showing the Range of Absolute Population in Padra Taluka and its Three Regions

1960-61-1990-91

Taluka & Regions	Taluka Total		I		II		III	
Range	1960-61	1990-91	1960-61	1990-91	1960-61	1990-91	1960-61	1990-91
<1000	32	22	08	1	3	3	21	18
1000-2000	33	25	20	14	2	1	11	10
2000-3000	7	17	.02	11	5	2	-	4
3000-4000	6	6	03	2	1	3	2	1
4000 & above	4	12	04	9	-	2	-	1
Total	82	82	37	37	11	11	34	34

Population of Padra varied in number - a usual geographic phenomenon, according to the varying locations However, total range accommodates population from less than one thousand to more than four thousand in the whole taluka.

Out of 82 villages of the taluka, 32 villages had their population in the very low range (<1000) and 33 villages were found in the range of low (i e 1000-2000) It shows that 79 27 per cent villages had their population in low and very low ranges The ascent in range values shows descent in number of villages that only 7 villages were placed in the moderate range of 2000-3000, yet less were 6 and 4 villages in the high and very high ranges respectively at the first point of time (1960-61)

Growth of population at the second point of time has reduced the higher to lower and uplifted the lower to higher where as in the very low range were 32 villages formerly have come down to 22. Similarly in the low range villages came down from 33 to 25 However, from moderate range upswing started making 7 to 17, the high range maintained status quo in terms of number of villages, but most of the former villages are replaced by others (Fig 2 1) The very high range recorded three time more villages than the former i e (4 to 12)

In the regional scene, the growth pattern in three regions is quite variable The most dynamic in respect of growth is Region I. It had biggest number of villages (i.e.20) in the low range, followed by 8 villages in the very low range and only 2,3 and 4 villages in the subsequent ranges of moderate to very high.

Region II with only eleven villages had 3 and 2 in the very low and low ranges, 05 in the moderate only one in the high and none in the very high range

Region III had 21 villages in the very low range followed by 11 in the low, none in the moderate, 2 in the high and again none in the very high range At the second point of time the highest magnitude of change is notable in region I followed by reduced tune in other two regions

In region I the very low range is reduced to only one village from 8, the low range slipped from 20 to 14, while the moderate range went up from 2 to 11, high range got only 2 village i e one less than the former but very high range enfolded 9 villages instead of former 4

In region II the first two ranges maintained status quo both in the number and code number of villages except that one village (code number 39 named Gametha) went up to moderate range The moderate range is reduced from 5 to 2 villages taking Gametha from low range and retaining Gavasad The high range included 3 villages each from the moderate range of the former year Very high range included 2 villages taking one village Sadhi from moderate and another Bhoj from the high range Thus a slow pacing of change is notable.

Region III, as in the former year, gives 18 villages in the very low, 10 in low, 4 in moderate and one each in high and very high ranges Most of its villages have remained less dynamic except three villages viz Rajupura, Pindapa and Kotna that have ascended a step up to the low range However the number in this range is reduced by one (i e 11 to 10) as one village Chansad shifted to moderate range Similarly three more villages shifted from low range to moderate range, making total four villages in this range against none in the former year. In the high and very high ranges are one village each which were formerly in the high range only Thus Kanzat village (code 63) retained its former placement, but Mobha (Code 60) went a step up to

very high range Thus a sluggish progress discerned in its rate of growth (Fig 2 1)

Crude Density

Density is an spatial attribute of the distribution of population closely related with its growth Padra taluka reveals that the crude density at the first point of time was 2 27 PP Ha. And 227 PPS Km . It increased to more than 3 (3.54) PP Ha, and 354 PP Sq Km. at the second point of time

The crude density of the three edaphic regions was 2 65, 2 33 and 1.74 PP Ha respectively in 1960-61, it increased moderately to 4.45, 3 66 and 2 25 respectively at the second point of time. The range distribution of the village wise per hectare density is shown in percentage

During 1960-61 the taluka had 35 villages in the range of very low density (i e. less than 2 per cent) and in the subsequent ranges were 19,16,8 and 4 villages (i e from low to very high ranges). But due to population growth a trend of decrease is notable from very low to moderate ranges and that of increase in the high and very high ranges. In the high range a slight increase of two villages is observed but in the very high ranges is an abrupt upswing from 4 to 25 villages at the second point of time

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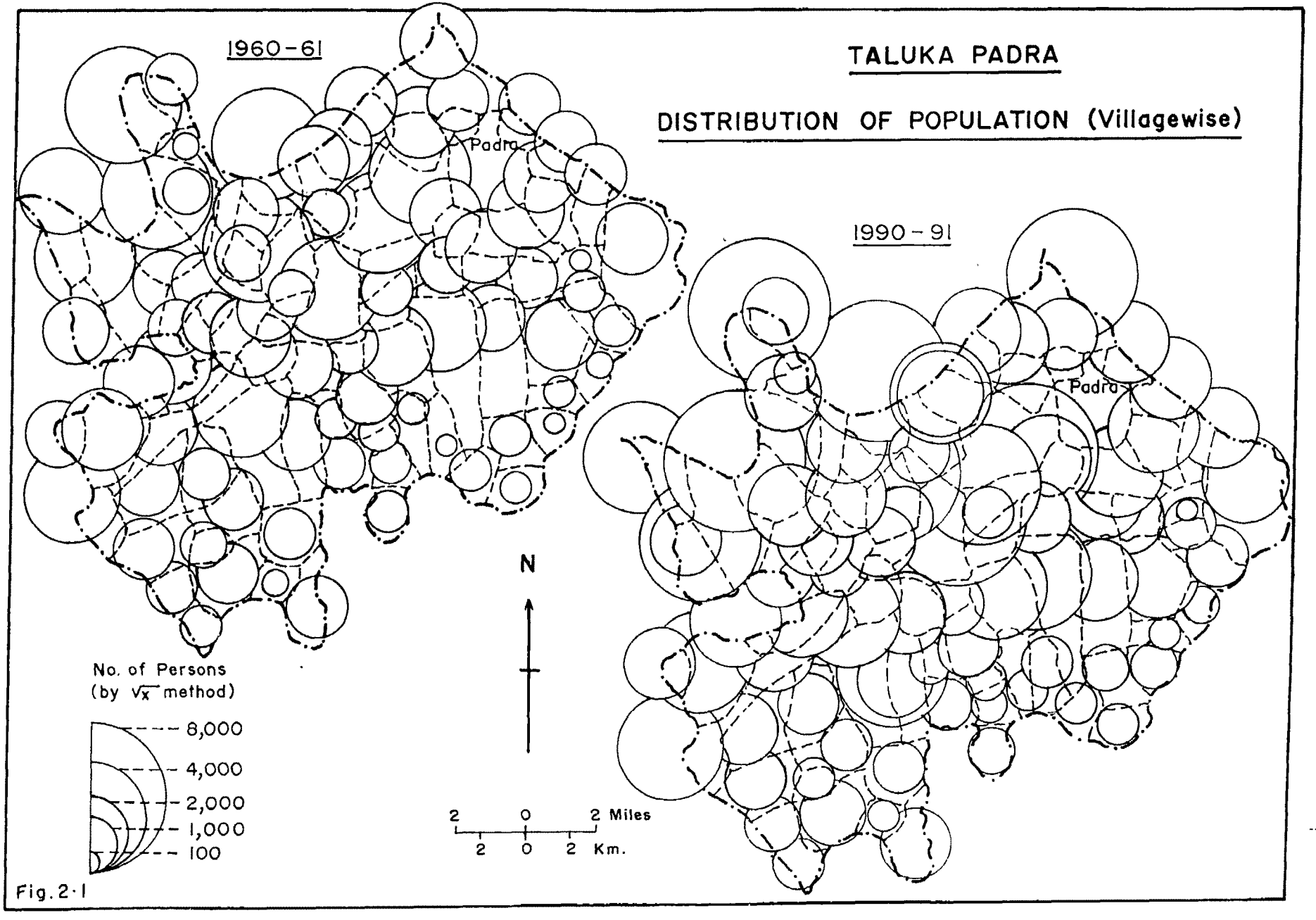

TALUKA PADRA
DISTRIBUTION OF POPULATION (Villagewise)
1960-61
1990-91
Padra
Padra
N
No. of Persons
(by √x method)
8,000
4,000
2,000
1,000
100
2 0 2 Miles
2 0 2 Km.

Fig. 2·1

Table 2 2

Table reflects the variable densities of Padra taluka and its three regions

1960-61 and 1990-91

	Taluka		Region					
			I		II		III	
Range of Density	1960 -61	1990 -91	1960 -61	1990 -91	1960-61	1990 -91	1960-61	1990-91
< 2 00	35	22	6	3	4	1	25	18
2 0 - 3.0	1	16	10	2	5	4	4	10
3.0 - 4 0	16		11	6	1	2	4	1
4 0 - 5 0	8	10	7	4	-	2	1	4
5 0 & above	4	25	3	2.2	1	2	-	1
Total	82	82	37	37	11	11	34	34

If seen in regional perspective the densities are significantly variable in the three regions which, of course, is the result of the variable population growth of each of them

Where in region I there were 6 villages in the very low range of less than 2 per cent, at the first point of time and in subsequent ranges were 10 ,11, 7 and 3 villages respectively The second point of time shows an increased density in all ranges reducing the former number of villages to 3,2,6,4 and giving a precipitous upswing in the very high range from 3 to 22 villages

Region II, the next in order of the higher growth, had its distribution of densities in order of 4,5,1,nil and 1 in the ranges from very low to very high at the first point of time The increased densities reduced the number of villages from 4 to 1 and 5 to 4 in the very low and low ranges and increased at the rate of 2 villages each in the subsequent ranges of moderate to very high ranges at the second point of time.

Region III had its densities consequential to its growth pattern However, it is not totally devoid of its density dynamics At the base year it had 25 villages in the very low, 4 in low, 4 in moderate and only one in the high but

none in the very high range At the second point of time the number of villages in the first range were reduced to 18 from 25 and in the second range increased from 4 to 10, further villages in moderate range were reduced from 4 to 1 and in the high range increased from 1 to 4 One village appeared against none in the very high range (Fig 2 2)

Rate of Growth

An attempt is made to work out the tri decennial growth rate of taluka Padra and bi decennial of Karjan as well as their respective regions The purpose of this exercise is to investigate its impact on the patterns of land use in the two talukas and parts there-of

PADRA

In Padra the population growth rate comes to 55 86 per cent Thus the average decennial rate is 18 62 per cent which is definitely lower than the national average of 24 per cent When taken per thousand it comes to 556 82‰ The average annual growth as worked out comes to 1 86 per cent Thus, the growth of population of the taluka seems to have been with in the prescribed limits causing no acute problem However the rate of growth has to some extent decreased between 1981 and 1991

In respect of the growth pattern of the regions, it is noted that the region I, recorded the highest 68 28 per cent followed by region II with 57 16 per cent and region III 28.99 per cent The per thousand figure for region I is 682.80, region II 571.60 and region III is 289.90. Their annual growth rates in the same way are 2.28, 1.91 and 0.97 per cent

In respect of the area and number of village region I is the largest of all with 25304 18 ha And 37 villages followed by region III with 18717 40 Ha And 34 villages Region II

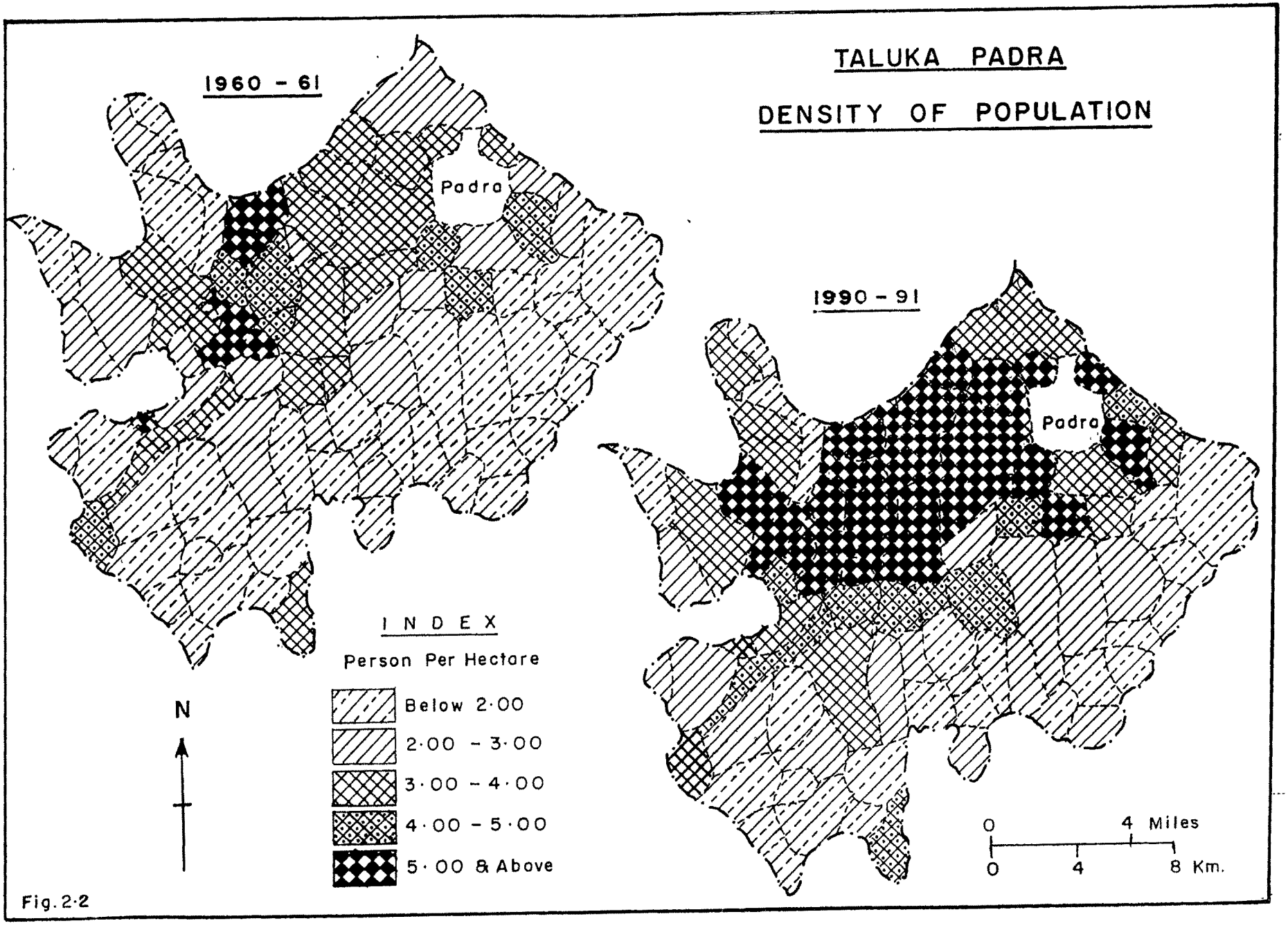

TALUKA PADRA
DENSITY OF POPULATION
1960 - 61
Padra
1990 - 91
Padra
INDEX
Person Per Hectare
Below 2·00
2·00 - 3·00
3·00 - 4·00
4·00 - 5·00
5·00 & Above
N
0 4 Miles
0 4 8 Km.

Fig. 2·2

is the smallest of the three with 8190 99 Ha. And only 11 villages But the rate of the growth of population gives a different picture that region I and II have relatively higher growth rate of 2 28 and 1 91 per cent per annum while the third region with second largest area and number of villages and even the size of population bigger than the second region reported a low rate of growth of less than one per cent (0 97%) per annum This variability of growth may be co-ordinated with literacy on one hand and the economic prosperity on the other leading to accelerated rate of migration As such region I and II inspite of their biggest and smallest sizes of area and population respectively have been prosperous and continue to remain so, while region III composed of besar and bhatha soils was inferior to other two regions in terms of productivity Further the vanishing away of cotton has given a great economic set back to the people of this region. In literacy rates region III acquires highest position with 45 and 57 per cent literacy at the two points of time respectively The literacy rates of other regions were lesser than it at both the years under study Table 2 3 shows the percentage of literates at the two points of time in the three regions.

Table 2.3

Percentage of literates at two points of time in three regions

1960-61 and 1990-91

Years	Region- I	Region - II	Region -III
1960-61	40	38	45
1990-91	51	50	57

Thus it provides substantial grounds to assume that this region has devoted more towards increasing literacy in the wake of dim economic prospects and would have migrated to urban areas or even abroad This would therefore be taken as a solid reason for the lesser growth rate of population in this region in relation to its other counter parts

PHYSIOLOGICAL DENSITY

Padra taluka has shown a wide variability of its per hectare agricultural density at the two points of time During 1960-61 it had 1 01 persons per Ha and in 1990-91 it slightly increased by 0 17 (i e 1 18) PP Ha

During the base year 47 villages of the taluka were in the range of very low physiological density (i e less than 1 per cent) and 30 villages in the low range of 1-2 per cent, 5 villages in the moderate and none in the high and very high ranges A trend of decrease is notable from very low to low ranges and that of increase in moderate to very high ranges. In the high and very high ranges a slight increase of one village each is observed at the second point of time

If seen in the regional perspective the densities are significantly variable in the three region which of course is the result of the growth of population Where in region I, there were 10 villages in the very low range of less than one per cent at the first point of time and in the subsequent ranges were 23 in low range and 4 villages in the moderate range The second point of time shows an increased density in all ranges reducing the former number of villages to 8,21,6,1 and 1 respectively in the different ranges.

Region II, had its distribution of densities in order of 9,1 and 1 in the ranges from very low to moderate at the base year The increased densities reduced the number of villages from 9 to 4, and in the second range increased from

1 to 6, the moderate range had status quo, and none in the high and very high ranges at both the point of time

Region III had its physiological densities consequential to its growth pattern However it is not totally devoid of its density dynamics. At the first point of time it had 28 villages in the very low and 6 villages in low range but none in the moderate to very high ranges At the second point of time the number of villages in the first range were reduced to 25 from 28 and in the second range increased from 6 to 9 and none were in the ranges from moderate to very high Table 2 4 shows the situation of physiological densities stated above

Table 2 4

Table reflects the variable physiological densities of Padra taluka and its three regions

(in Ha.)

1960-61 and 1990-91

	Taluka		Region					
			I		II		III	
Range of Density	1960-61	1990-91	1960-61	1990-91	1960-61	1990-91	1960-61	1990-91
< 1 00	47	37	10	8	9	4	28	25
10-20	30	36	23	21	1	6	6	9
20-3.0	5	7	4	6	- 4	4	-	-
3.0-40	-	1	-	1	-	-	-	-
4.0 & above	-	1	-	1	-	-	-	-
Total	82	82	37	37	11	11	34	34

Thus whatever changes have taken place were confined to the ranges in which were these densities at the first point of the time. Those ranges having no villages at that time have remained empty at the second point of time also It is therefore assumed that the agricultural occupation is loosing its charm in each region but more in region III However, in the first two regions the physiological density pattern is some what prospective, as they have covered all ranges in region I at the second point of time, and have decreased in

very low range by 5 villages and increased in low range to 6 villages, that shows that net decrease of 5 village in the very low range with the net increase of the same number of villages in the subsequent range The moderate and subsequent ranges maintained status quo The region III has shown almost the same pattern of decrease as that of region II in which the 28 villages of very low range at the first point of time came down to 25, and the decrease of these three villages became an increase in the low range to make the number 9 instead of 6 at the second point of time However, the sluggish dynamics of region III is reflected in all of its spheres (Fig 2 3)

Arable land had been a basis of sustenance for a greater percentage of the world population before the development of other economic activities According to ward's scale at least 1 200 Ha of arable land is needed for a comfortable life When per capita share of arable land of Padra is seen it is 1 0 99 in 1960-61 and 1 0 85 in 1990-91 At both the points of time this share of land is much less than that given by Ward Probably this was the reason that Padra from the years before sixtees had devoted more to grow the ready cash earning crops i e green and other types of vegetables. Besides, the agricultural innovations in Padra has better developed than in Karjan. This is the reason why a small share of 0 99 and 0 85 Ha per capita at the two points of time have sustained the increased agricultural population in Padra Thus, if the sustainability of land is increased, it may become capable of supporting a big population Thus the Wards' scale is too big to be applicable under agricultural milieu of Padra

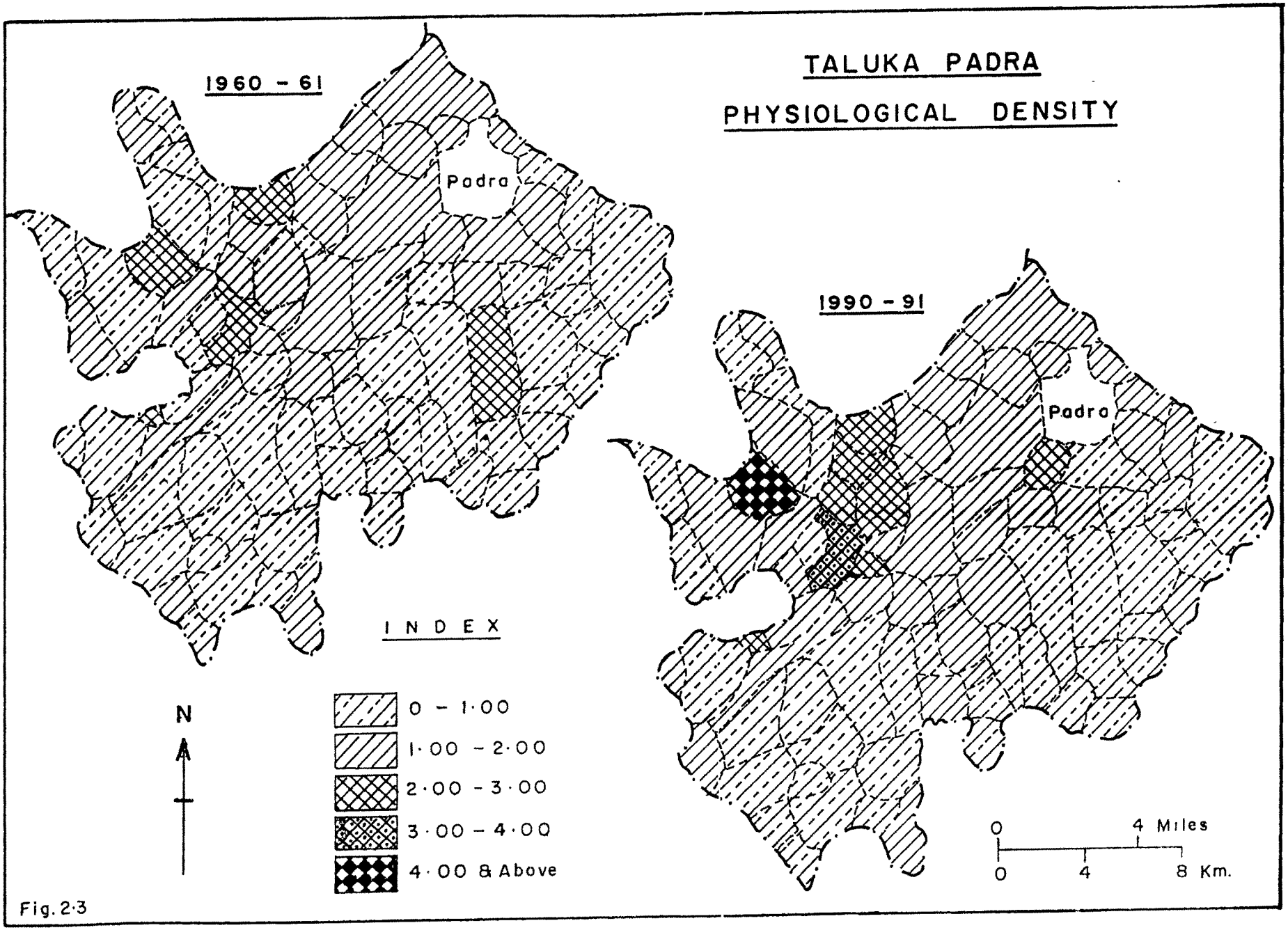

TALUKA PADRA
PHYSIOLOGICAL DENSITY
1960 - 61
Padra
1990 - 91
Padra
INDEX
0 - 1·00
1·00 - 2·00
2·00 - 3·00
3·00 - 4·00
4·00 & Above
N
0
4 Miles
0
4
8 Km.

Fig. 2·3

Literacy and Agricultural Workers

It is believed that literacy is inversely related with agricultural work It has been proved by the earlier researchers in this field In India, where the agricultural infrastructure has not improved to the requisite standard, the literates usually desire to seek jobs in the fields other than agriculture Now it has to be tested in the conditions of the two in the study area, both at taluka and regional levels

The over all picture of taluka in respect of the literates and agricultural workers goes against the assumption when taken the pattern of the percentage increase of the two In 1960-61 the literacy ranged between the lowest 19 and the highest 57 per cent and the agricultural workers ranged between the lowest 17 and the highest 56 per cent The relation between the highest and the lowest of the two was thus 3 3.29 (the agricultural worker showed an edge over the literates) Almost the same position is revealed at the other point of time where the low literacy was 24 per cent and highest was 70 per cent. Where as the agricultural workers ranged between the lowest 17 and the highest 52 per cent maintaining a relation of 2.92 3 06 But when seen in cases of individual villages the percentage of agricultural workers have invariably decreased with the percentage increase in literacy and vice verse at the second point of time in relation to that of the first e g when the literacy in region I at the first point of time was 19,29,27,31 and 28 per cent, the percentage of agricultural workers was 35,50,33,33 and 33 in the villages Sultanpura, Pavda, Mujpur, Umrarya, Jaspur respectively whereas their position in 1990-91 was quite different The literacy increased to 35, 40,46,45 and 54 per cent and the percentage of agricultural workers slashed down to 23,32,24,25 and 26 per cent Similar cases are seen in region II and III also Thus it establishes the assumption that as the percentage literacy increases the

percentage of agricultural worker decreases Rather the literacy generates diversification of occupation in the mono functional rural areas Table No 2 5 reveals the above stated facts of relationship between literates and agricultural workers

P. T. O.

Table 2 5

Relationship Between Literates and Agricultural Workers in Padra 1960-61 &1990-91

REGION – I (In per cent)

Location Code No	Name of Village	1960-61		1990-91	
		Literate (in %)	Agri Workers (in %)	Literate (in %)	Agri Workers (in %)
1	Mahamadpura	35 01	29.99	49 74	26 06
2	Sultanpura	18 799	34 90	34.79	22 59
3	Pavda	28 30	49 92	40 28	31 73
4	Dabka	30 87	28 30	49 27	22 84
5	Mujpur	27 46	33 16	46 19	23 90
6	Ekalbara	27 50	28 34	45 08	21 03
7	Umraya	30.51	33 30	44 93	24 57
8	Jaspur	28 48	32 79	53 66	26 04
9	Tajpura	55 87	42 95	60 04	33 54
10	Luna	34 35	27 90	58 84	28 32
11	Dabhasa	37 45	36 06	54 52	30 36
12	Mahuvad	34 28	31 17	46 28	23 10
13	Dhobikuwa	29 03	24 29	57 38	19 78
14	Narsipura	51 79	29 06	52 18	25 19
15	Chokari	35 50	37 66	42 93	28 66
16	Tithor	43 17	32.18	41 49	31 96
17	Dudhwada	54 29	26.27	71 26	26 51
18	Karkhadi	49 599	28 97	54 62	32 94
19	Majatan	50 77	47 28	47 58	29 49
20	Sandha	44 20	34 89	52 43	23 46
21	Somjipura	33 44	34 07	43 18	30 65
22	Vadu	40 28	25 57	53 43	22 91
23	Ranun	38 991	28 66	53 08	24 59
24	Latipura	51 88	35 05	61 78	34 71
25	Sangma	34 79	30 58	56 28	27 69
26	Sokhdakhurd	42.54	34 25	56 56	27 15
27	Patod	32.65	43 59	56 19	21 76
28	Darapura	54 78	21 26	66 26	19 23
29	Ghayaj	53 04	38 54	62.40	22 13
30	Sejakuwa	49 21	36 10	50.64	23 65
31	Piph	43 16	32.67	64 65	24 12
34	Karnakuwa	45 74	29.92	50 29	40 59
35	Vishuampura	46 60	28 52	59 78	24 50
36	Lola	44 88	32 41	70 11	33 01
37	Chitral	48 17	33 37	58 05	29 31
46	Amla	56 68	44 93	55 82	29 11
47	Goriyad	49.83	34 35	60 70	22 74

PADRA REGION – II

Location Code No	Name of Village	1960-61		1990-91	
		Literate (in %)	Agri Workers (in %)	Literate (in %)	Agri Workers (in %)
32	Vadadla	48.81	28 67	67.96	34 54
33	Bjoj	31.94	29.92	47 99	40 59
38	Brahmanvasi	42.84	31.78	47 32	35 31
39	Gametha	48 82	45.97	44 38	28 30
40	Gavasad	44.29	43.02	57 27	33 71
41	Muval	41.14	29 88	60 91	32.45
44	Anti	26 26	32 16	43 04	33 40
45	Sadhi	48 10	32 21	59 76	28 98
48	Sareja	51 28	28 21	24 19	40 32
50	Madapur	38 80	42 03	53 51	36 18
62	Masar	42 12	34 66	50 25	26 78

PADRA REGION – III

Location Code No.	Name of Village	1960-61		1990-91	
		Literate (in %)	Agri. Workers (in %)	Literate (in %)	Agri. Workers (in %)
42	Jalalpur	42 93	32 78	63 62	32 04
43	Rajupura	37.89	35 01	48 13	30 37
49	Chansad	47.11	32 17	50 18	31 68
51	Shihor	35.07	31 47	43 62	29 53
52	Sarsavni	43.97	32 21	57 81	25 42
53	Thikariya Mubarak	35.16	27 47	53 89	55 28
54	Virpur	46 74	33 33	55 02	40 13
55	Medhad	28 19	38 31	37 08	29 38
56	Bhadari	26.68	30 45	53 33	40 02
57	Bhadara	29 55	30 02	47 43	37 14
58	Ambada	47 72	34 72	48 70	29 69
59	Kalyanpur	50.46	43.84	31 67	48 51
60	Mobha	43.79	25 12	61 71	16 64
61	Kural	47.73	34 23	50 64	36 10
63	Kanzat	41.12	17.38	58 62	28 26
64	Abhol	36.39	37 13	52 69	33.90
65	Pindapa	50 00	26 81	57 81	29 57
66	Sadra	54 61	32.91	55 53	31 69
67	Kanda	48 40	45 05	38 51	52 43
68	Gataoyra	42.04	43 94	56 87	42.17
69	Thikariya Math	24.41	40 06	55 68	34 05
70	Sadad	18 76	37 75	37 52	29 26
71	Husepur	28 19	29.79	46 91	31 17
72	Kothwada	30.46	34 15	44 19	27 15
73	Shahera	41 31	40 68	56 54	29 65
74	Kotna	28 85	41 60	52 05	36 49
75	Shanpur	42 40	38 93	52 11	36 15
76	Bhanpur	44 27	49 10	65 71	32 94
77	Sampla	39.24	39 15	51 01	33 10
78	Danoli	40.03	55 71	62 30	28.52
79	Nedra	45.12	40.33	56 40	35.18
80	Vanchhara	41.16	40 11	53 89	34 53
81	Vasnaref	28.71	39 11	36 92	31 54
82	Sokhda Radhu	42 89	46 54	45.83	25.52

KARJAN .

Population Distribution

Population distribution involves the concept of man land relationship Not all the areas are befitted for population habitation. Thus some special attributes of the areas have in them pull force that attracts the population and allows them to grow. Thus population distribution is always governed by the capacity of the land to support them

Karjan is a flat plain area with good quality of soil and adequately available water resources, ideal soil for a variety of agricultural crops, and also a prospective of industrial

development, adequate and efficient transport and communication facilities giving linkages to surrounding as well as far flung areas of the state as a part and nation as a whole

Its black cotton soil producing cotton both in quality and quantity was the foremost factor attracting the population.

The taluka with its total land area (Rural and Urban) of 58,566 30 Ha is distributed over 93 villages of unequal sizes of their areas, and extent, and unequal size of population During 1970-71 the areal extent and number of villages were the same but the population of the taluka was 1,03,049 Their per capita average share of the total land area was 0 57 Ha In 1990-91 other things remained the same but the population – an ever growing phenomenon, increased by 19,984 (i e 1,23,033) further reducing the per capita share of land to 0 48Ha

The taluka is an adequately populated taluka However, from the bare appearance, it may be perceived that the pattern of distribution of villages has disparities from north to south and from east to west The northern segment i e between Bhukhi river and Dhadhar river appears very spacious with the villages of larger areal extent and also larger size of population. But the villages distributed between Narmada in the south and Bhukhi in the lower middle segment are closer to each other with smaller areal extent and also in general smaller size of population (Fig 2.4)

If viewed in the regional context, the three edaphic regions are also of unequal size Region I has an area 25,756 90 Ha (i e 43.97% of T G A) Region II being smaller in extent has 11,329 62 Ha (36 68% of T G A) Region I is largest in area and second largest in number of villages (35) Region II is smallest in both area and number

of villages (14), while region III is second largest in area and largest in number of villages (44) However region I though smaller than region III in number of villages has the largest population i e. 40 per cent at both the points of time Region II had 22 per cent at the two points of time and region III with largest number of villages has 38 per cent each at the two points of time showing no change over two decades

Population like other natural phenomena is variable over time and space To study the population by unit areas (villages) it is attempted to distribute in range order of very low, low, moderate, high and very high Table 2 6 gives the range of absolute population in Karjan taluka at the two points of time

Table 2.6

Table showing the range of absolute population in Karjan taluka and its three regions.

1970-71 and 1990-91

Taluka & Regions	Taluka Total		I		II		III	
Range	1970-71	1990-91	1970-71	1990-91	1970-71	1990-91	1970-71	1990-91
<1000	50	40	15	10	6	5	29	25
1000-2000	36	44	18	22	5	6	13	16
2000-3000	2	4	-	1	1	1	1	2
3000-4000	3	1	1	-	1	1	1	-
4000 & above	2	4	1	2	1	1	-	1
Total	93	9.	35	35	14	14	44	44

Of the 93 villages of Karjan taluka 50 villages were in the very low range of (>1000), 36 villages in the low range (i e. 1000-2000) In all 92 47 per cent villages had their population in the low and very low ranges The ascent in

range values shows descent in number of villages There were only two villages in the moderate range (2000-3000) 3 and 2 villages in the high and very high ranges respectively at the first point of time (1970-71)

At the second point of time the range order has abruptly changed making the lower higher and vice versa Where formerly in the very low range were 50 villages, the number has come down to 40 and the low ranging 36 villages went up to 44. The moderate and very high ranges got two time more villages than the former (i e 2 and 4) and high range came down three times less than the former (i e 3 to 1).

In respect of the three regions, Region I had 15 villages in the very low range followed by 18 villages in the low range and one village each in the high and very high ranges and the moderate range reported none Region II with only 14 villages had 6 villages in the very low range, 5 in the low range and one each in the subsequent ranges of moderate to very high. In region III 29 villages were in the very low range followed by 13 in the low, one each in the moderate and high ranges and none in the very high range at the first point of time.

A notable change occurred in region I at the second point of time that the villages in the very low range came down from 15 to 10 and in low range increased from 18 to 22 and one village appeared in the moderate range against none of the past The high range was left blank and the very high range got two in place of former one.

In region II the number of villages in the very low range were reduced by one and in the low range increased by one Rest of the range values reported no change

Like the base year 25 villages in the region III were in the very low range followed by 16 in the low and 2 in the moderate range, none in the high and one in the very high

range A slight change of 25 against 29 villages in the very low range, 16 against 13 in the low range, 2 against 1 in the moderate, none against one in the high range, one against none in the very high range are observed at the second point of time

Thus, in respect of the distribution of villages in different ranges of the size of population reveals the growth pattern of the three edaphic regions

It is thus, established that population distribution has a tendency not governed by the areal extent but by the extent of resourcefulness Per se the resourcefulness of the first two regions is definitely better than the region III, but this region having greater percentage of literacy and higher education has shown relatively higher rate of migration within the country and to countries abroad (Fig 2 4)

CRUDE DENSITY

Density varies from place to place, reflecting the economic viability of each piece of land For larger extent of areas it is expressed as ppsq m or ppsq. km (i e persons per square mile/ Kilometer) but for smaller areas it may be expressed in acre, hectare of square meter or so

Karjan taluka comprises 93 villages Density of each village is worked out in ppsh i e persons per square hectare, and further the per unit area population is expressed in percentage Table 2 7 gives the per hectare density of Karjan taluka and its three edaphic regions over 1970-71 and 1990-91.

P.T.O.

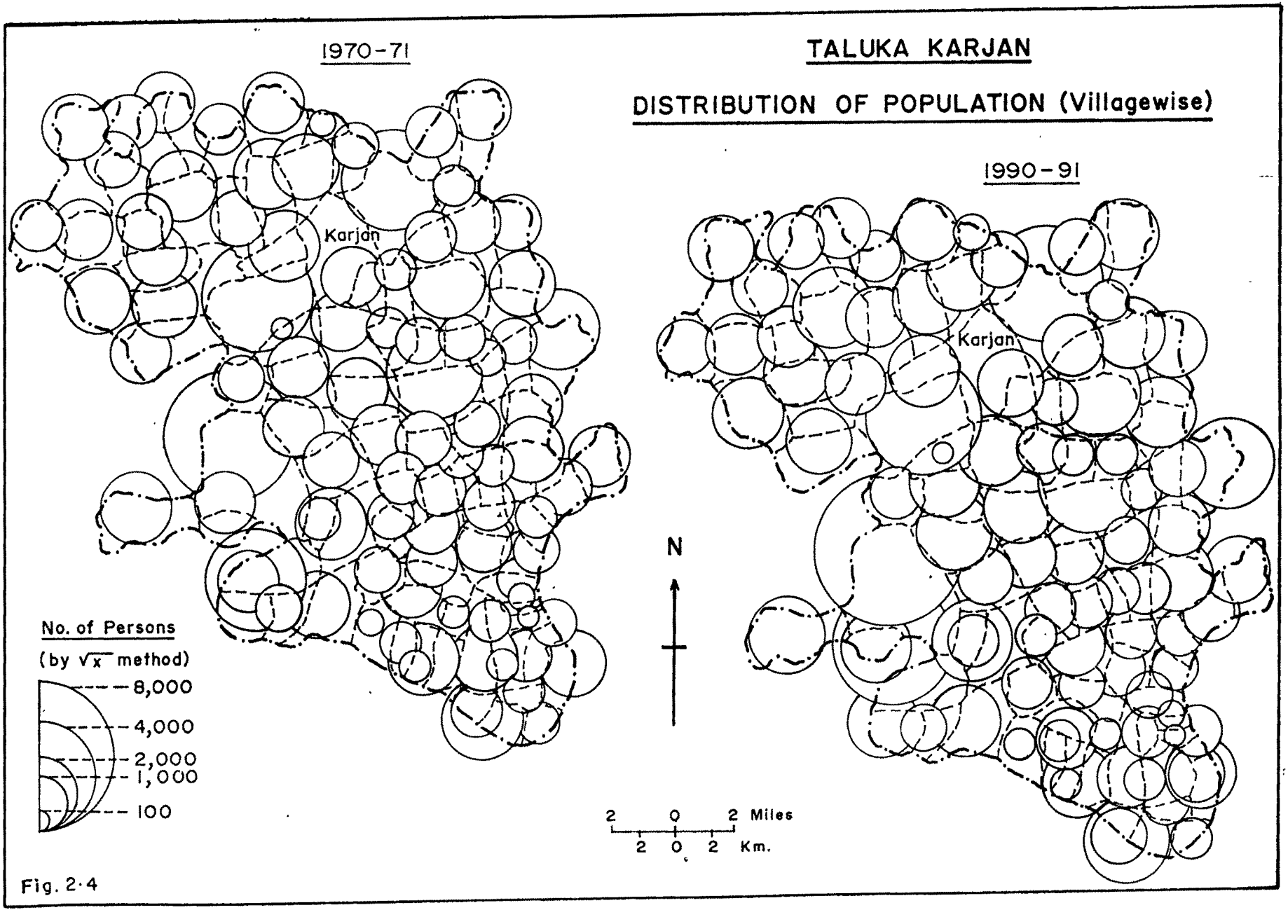

1970-71
TALUKA KARJAN
DISTRIBUTION OF POPULATION (Villagewise)
1990-91
Karjan
Karjan
N
No. of Persons
(by √x method)
8,000
4,000
2,000
1,000
100
2 0 2 Miles
2 0 2 Km.

Fig. 2·4

Table : 2.7

Showing villagewise per hectare density of taluka Karjan and its three regions.

1970-71 and 1990-91

	Taluka		Region					
			I		II		III	
Range of Density	1970 -71	1990 -91	1970-71	1990 -91	1970-71	1990 -91	1970-71	1990-91
< 1 00	2	2	1	1	-	-	1	1
1 0 – 2 0	69	49	28	20	10	5	31	24
2 0 – 3 0	18	32	5	12	4	8	9	12
3 0 – 4.0	3	6	-	1	-	1	3	4
40 & above	1	4	1	1	-	-	-	3
Total	93	93	35	35	14	14	44	44

The table reveals that the crude density of the taluka at the first point of time was less than 3 PPha (1 76) and 176 PPskm It increased to more than 2 (2 11) PPha And 210 07 pps km., which shows a moderate density at both the points of time

The crude density of the three deaphic regions was 1 65, 1 90 and 1.83 PPha Respectively in 1970-71, it increased moderately to 1 90, 2 37 and 2 19 respectively at the second point of time.

Further the range distribution of the villagewise per hectare density is shown in percentage It is stated below In region I, the largest number of villages i e 29 were in the very low and low ranges (i e less than 1 to 1 --2 per cent) 5 villages in the moderate, none in high and only one in the very high range By the second point of time this order was changed showing only 21 in very low and low, 12 in moderate, one each in the high and very high ranges

In region II at the base year the entire distribution is confined to only low and moderate ranges with 10 and 4 villages respectively By the second point of time the pattern of distribution of densities was changed showing 5

villages in the low range, 8 in the moderate and one in the high range The first and last range remained vacant at both the points of time

Region III with its 44 villages exhibited almost the same trend as the other two regions It had one village in the very low range, 31 villages in the low range, 9 in the moderate, 3 villages in the high range and none in the very high By the second point of time the very low density village remained unchanged, the low ranging villages decreased from 31 to 24, moderate ranging increased from 9 to 12, high ranging from 3 to 4 and 3 villages appeared in the very high range (Fig 2 5)

POPULATION GROWTH

Indeed the concept of land use without population is baseless Population of Karjan taluka, like other talukas is largely rural, distributed over 93 villages in the length and breadth of the taluka

In 1970-71 the total rural population of the taluka was 1,03,049 There are small and big villages both in area and population, however the average per village comes to 1108 persons In 1990-91 the number of villages did not change but the population increased by 19,984 giving the total 1,23,033 This increased the average per unit area to 1,322 persons The bi-decennial increase therefore added around 1,000 persons to the existing population per annum The regional growth of population is depicted by the following table 2.8.

P T O.

TALUKA KARJAN

DENSITY OF POPULATION

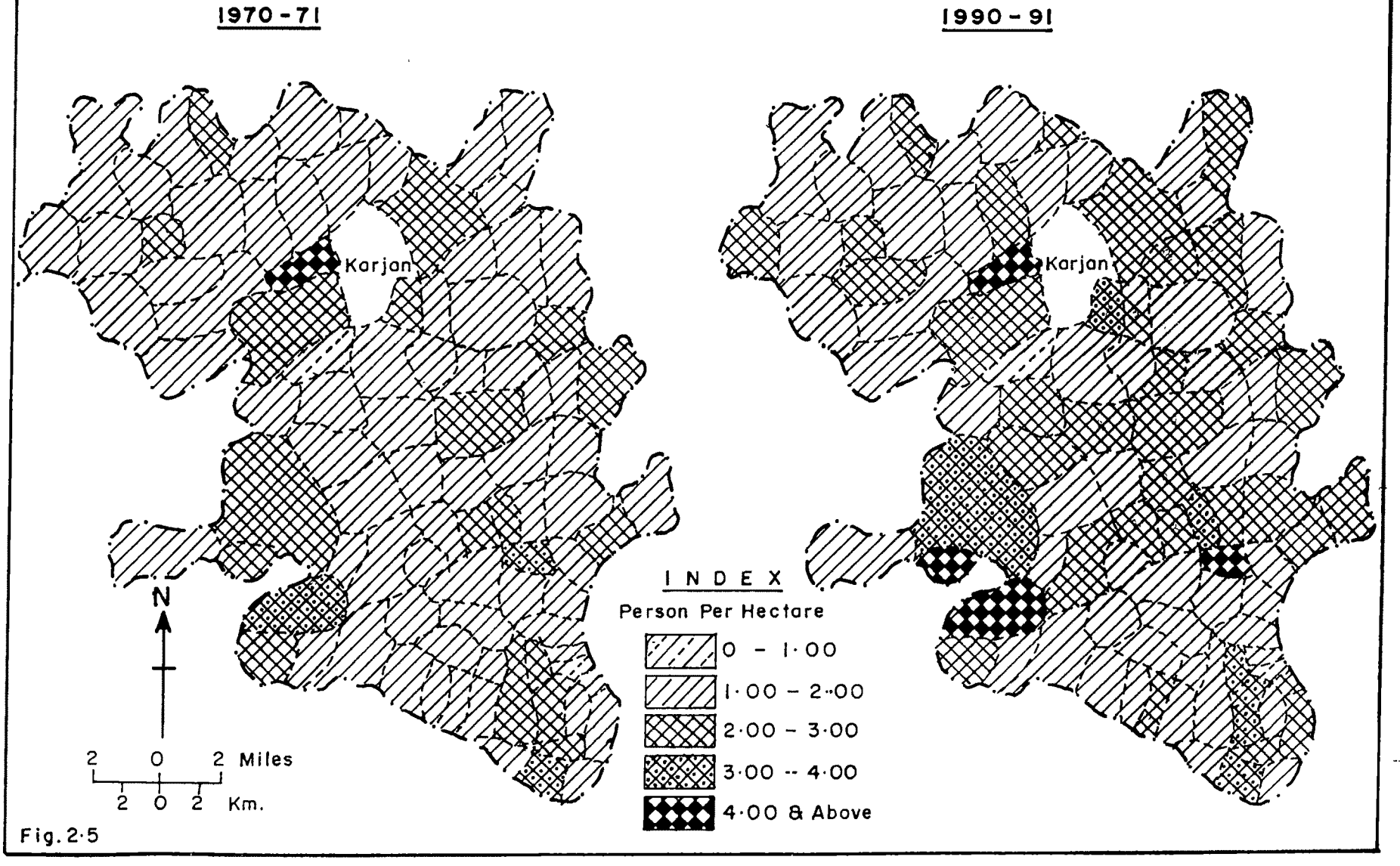


Fig. 2·5

Table : 2.8

Showing taluka and regionwise population growth 1970-71 and 1990-91.

Taluka	Region – I	Region – II	Region – III
19.39	16.40	5.29	19.39

The table displays the regional growth of population over two decades Region I has the largest spatial extent and second largest number of villages but its absolute growth was 6,914 persons, when converted to percentage it had 16.40 per cent which is the lowest of the other two regions of the taluka Region II is smallest in all respects i e in area and number of villages, however its absolute growth worked out gives 5,431 i.e 25 29 per cent - the highest of the other two regions- Region III the second largest in spatial extent and the largest in number of villages got the absolute increase to the tune of 7,644 persons i e the largest in numerical growth and the second largest in percentage (19.39 per cent).

GROWTH RATE

In respect of growth rate karjan seems to have been following the family planning measures The bi-decennial growth rate, as computed comes to 19 39 per cent, the average decennial rate thus comes to 9 70 per cent, when per annum rate is computed gives 0.97 per cent which is less than one per cent nd much less than the national growth rate It therefore comes to 193.93 per thousand. This growth rate is therefore within the prescribed norms causing no acute problem

In respect of the growth pattern of the regions, it is noted that the region II is first with 25 29 per cent, region III is second with 19 39 per cent and region I is third with 16 40 per cent The same order is maintained in the per thousand population of the three regions in which region II has 252.90, region III has 193 89 and region I has 164 03 The annual growth rates in the same manner are region II is 1.26, region III is 0 97 and region I has 0.80 per cent

When seen in respect of area and population region I is the largest having 25,756 90 Ha and 42,150, and second largest in the number of villages (35), region II is smallest in all and region III is the second largest in area and population with 21,479 62 Ha , and 39,424 and largest in number of villages (44) But the growth rate of population gives a different picture that region II and III have relatively higher growth rate of 1 26 and 0 97 per cent per annum, while the region-I with largest area and the size of population is bigger than the other two regions but reported a low growth rate of 0.80 per cent per annum This variability of growth may be co-ordinated with literacy on one hand and the socio-economic prosperity on the other Migration may also be one of the influencing causes

Region I being nearer the taluka headquarter, served by efficient means of railway and road transport and also served by National Highway No. 8 as well as the interior road linkages relatively better than the other two regions has relatively higher levels of occupational diversification's, higher percentage of literacy, and better awakening and consciousness for comfortable life, has inspite of its bigger area and population, shown smaller rate of growth than the other two regions This may be attributed to the higher rate of development and quality improvement among the dwellers Region II and III are relatively at lower level but coming up slowly

PHYSIOLOGICAL DENSITY

Karjan taluka had shown insignificant change in its per hectare agricultural density at the two points of time During 1970-71 it was 0 80 per Ha and in 1990-91 it slightly increased by 0.02 (i e 0 82) PPha. Table 2 9 shows the position of the physiological density both at taluka and regional levels.

Table : 2.9

Showing villagewise per hectare physiological density of Karjan and its three regions.

1970-71 and 1990-91

	Taluka		Region					
			I		II		III	
Range of Density	1970-71	1990-91	1970-71	1990-91	1970-71	1990-91	1970-71	1990-91
< 0 50	20	8	10	2	-	1	10	5
0 50 – 1 00	54	61	23	26	2	9	29	26
1 00 – 1 50	14	21	1	7	8	4	5	10
1 50 – 2 00	5	3	1	-	4	-	-	3
2 0 & above	-	-	-	-	-	-	-	-
Total	93	93	35	35	14	14	44	44

The regional disparity in the physiological densities are stated below. In region I there were 10 villages in the very low range, 23 in the low range and one village each in the moderate and high ranges during 1970-71 The second point of time shows an increased density in all ranges reducing the former number of villages to 2,26 and 7 respectively in the very low to moderate ranges but keeping the high and very high ranges blank at both the points of time

Region.II had its distribution of densities in order of 2,8 and 4 villages in the ranges from low to high at the base year At the second point of time one village appeared in the first range(i e very low), the villages in second range increased from 2 to 9, and in moderate range decreased from 8 to 4. The high and very high ranges had none at both the points of time

Region III at the first point of time had 10 villages in the very low range, 29 villages in the low range and 5 villages in the moderate range but none in the high and very high ranges At the second point of time the number of villages in the first range were reduced to 5 from 10 and in second range decreased from 29 to 26 Moderate range went up to 10 from 5, high range got 3 against none of the former and very high range remained blank

Thus whatever changes have takenplace were confined to the ranges in which were these densities at the first point of time Those ranges having no villages at that time have remained empty in most of the cases at the second point of time also It is therefore assumed that the agricultural occupation is loosing its charm in each region

It appears from the table 2.9 that the negative changes have taken place in the very low and low ranges and positive changes are seen in moderate to high ranges and the last range remained blank The region I and II display the trends of reducing the range distribution of densities from the first four of base year to only first three at the second point of time Region III exhibited the trend of decrease like the region I in the first two ranges i e. very low and low, increase in the other two ranges i.e moderate and high. However, the increase in this density indicates increasing pressure of population on the arable land (Fig 2 6)

TALUKA KARJAN

PHYSIOLOGICAL DENSITY

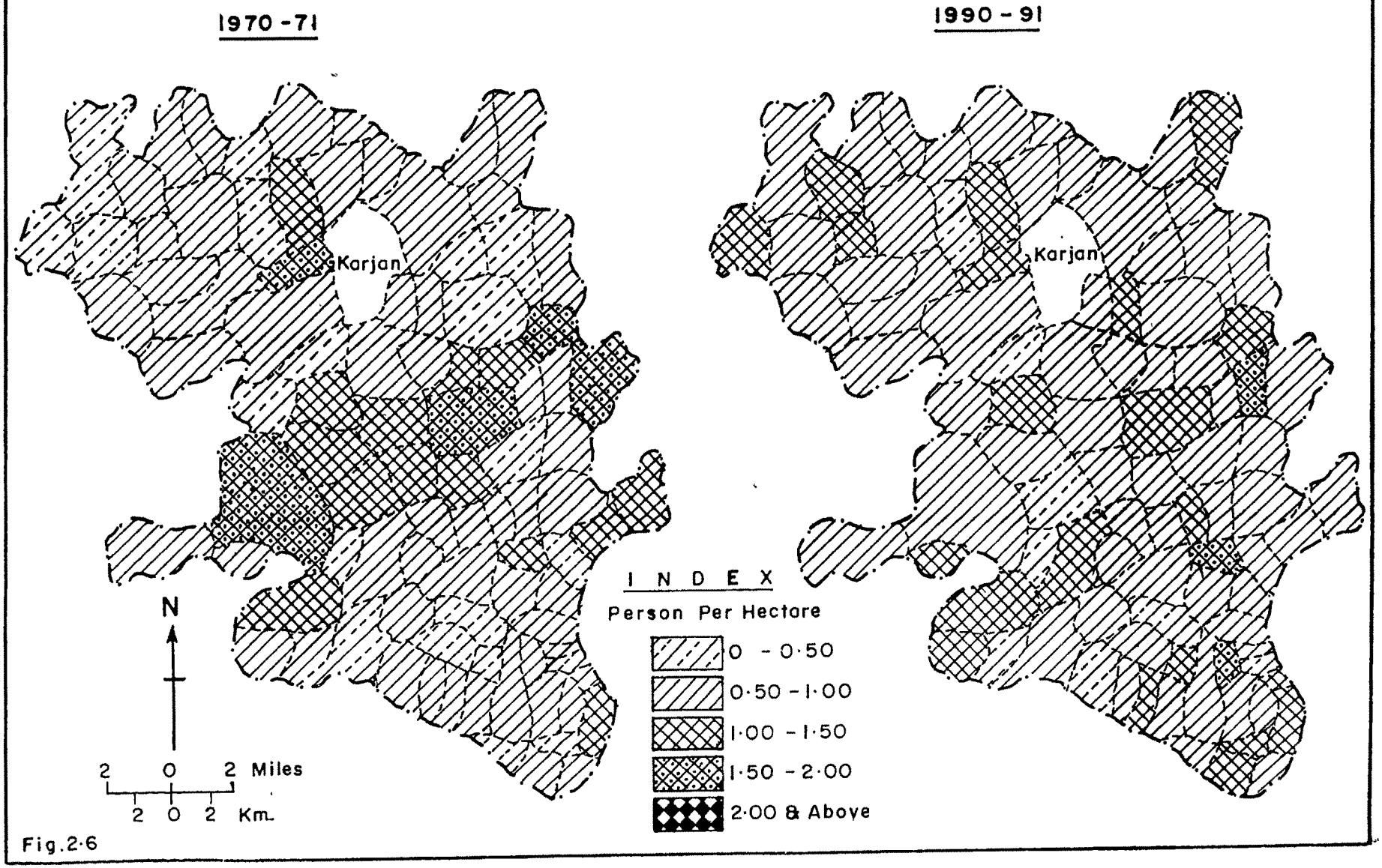


Fig.2·6

According to Wards scale 1 200 Ha per head is the required land for proper sustenance In Karjan the per capita arable land at the first point of time was 1 243 Ha which is slightly more than the given scale and at the second point of time it was 1 219 Ha which is also greater than the given scale However, the per capita share of land in the GCA or NSA is enough provided it is exploited on the modern scientific lines Since the agricultural environment of Karjan and Padra from the late seventies to eighties and early nineties was haunted by pests and diseases which took away cotton – the most paying crop The replacements of cotton is not as encouraging as the cotton was Secondly the increasing labour wages, other inputs, above all frequent spraying of insecticides and pesticides have abnormally increased the inputs of agriculture leaving a small margin of gain This is the most vital reason why the interest in crop raising is fast decreasing among the farmers

LITERACY AND AGRICULTURAL WORKERS

Like Padra, the relationship between literacy and agricultural work force in Karjan is also inversely related which proves the universality of this relationship Where in 1970-71 the lowest percentage of literates was 12.50 in Wadhawa, the same village at the same time had 40 64 per cent agricultural workers Where in the same year Ganpatpura had 71 per cent the highest literacy of the region, its agricultural workers were 28 32 per cent

In 1990-91 the rate of literacy has substantially increased The lowest literacy of 8 77 per cent was recorded in Wadhava, the same village which had 12 50 per cent literacy in 1970-71 Its agricultural workers were 40.18 per cent It displays that when the literacy increased by 2 23 times over the previous point of time, agricultural workers did increase but by 1 44 times only Thus, with exception to a few, the growth is notable in both literates and agricultural workers, but the pace of literacy is found faster than that of agricultural

workers However, whether, the increase in literacy and increase in agricultural worker of a few villages be the case or increase in literacy and decrease in agricultural worker of a few villages be the case, the assumption, in respect of the entire taluka and its three edaphic regions has been convincingly established that both of them are 'inversely related' This is more or less a universal phenomenon Table 2 10 reveals the above stated facts of relationship between literates and agricultural workers

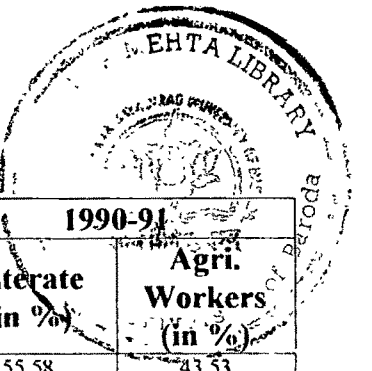
Table : 2.10

Relationship Between Literates and Agricultural Workers in Karjan 1970-71 & 1990-91

KARJAN

REGION – I (in per cent)

Location Code No.	Name of Village	1970-71		1990-91	
		Literate (in %)	Agri. Workers (in %)	Literate (in %)	Agri. Workers (in %)
1	Umaj	35 64	25 37	51 36	39 62
2	Virjai	37 57	32 02	60 41	38 46
3	Abhara	34 03	31 03	49 81	39 62
4	Sambhol	42 45	37 62	55 71	37 75
5	Surwada	37 52	28 69	50 79	33 48
6	Manpur	55 96	24 09	53 53	30 41
7	Pingalwada	37 13	38 48	43 25	37 33
8	Harsunda	30 15	55 28	41 41	40 28
9	Kherda	22 59	37 28	49 27	28 60
10	Manglej	46.75	39 87	48 25	26 19
11	Bamangam	39 85	39 85	56 74	27 87
12	Dhanora	50 79	37 92	63 07	37 48
13	Kandari	50 27	34 79	53 82	33 03
14	Anastu	38 39	43 12	52 50	38 79
15	Kurai	40 36	51 29	57 38	43 64
16	Khanda	40 00	33 87	56 94	20 56
17	Handod	41 89	32 15	58 53	28 11
18	Kanabha	39 03	24 97	55 77	35 79
19	Chorbhuj	27 69	21 99	50 14	41 21
20	Sanpa	43 37	38 35	62 89	36 77
21	Bodka	41 59	32 52	60 60	30 68
22	Karmadi	41.42	38.65	53 77	29 99
23	Vermadi	37.21	27.27	60.02	42 21
24	Ganpatpura	71.00	28 32	56 50	42 70
25	Gandhara	48.15	34.34	51 63	41 11
27	Dhavat	45 06	27 95	49.98	37.47
28	Navi-Jithardi	33 80	43 54	33.44	49.50
29	Juni-Jithardi	46 55	30 97	53 43	25 24
30	Miyagam	39 52	30 65	54 02	35 10
31	Kambola	41 79	36 84	60 19	46 82
32	Mangrol	31 46	46.01	41 99	40 97
33	Dhamanja	36 26	37 58	58 16	36 23
34	Vadava	12 50	40 64	8 77	33 33
36	Bharthana	40 37	33 55	55 32	40 30
37	Bharthali	50 47	35 02	50 00	41.43



KARJAN

REGION – II

Location Code No.	Name of Village	1970-71		1990-91	
		Literate (in %)	Agri. Workers (in %)	Literate (in %)	Agri. Workers (in %)
26	Kurali	40 34	70 24	55 58	43 53
35	Lakodara	42 02	73 07	60 36	53 18
38	Sandana	48.22	57 44	60 63	38.32
39	Kasampur	34.87	63 79	56 89	53 28
40	Kothav	46.18	62.97	62 86	45 61
41	Vermar	33.93	66 92	50 97	28 31
42	Nishaliya	43 41	59 47	55 28	46 64
43	Choranda	42 38	68 25	58.77	31 13
44	Osalam	28.74	73.85	65 42	31 14
45	Dethan	41.70	78 85	66 89	26 03
46	Valan	44 10	73 45	49 32	24.25
47	Kiya	41.06	74 90	52 56	24 77
48	Atali	36.50.	63 99	54 24	36 69
49	Bachar	47.99	71 18	61 36	26.50

KARJAN

REGION – III

Location Code No	Name of Village	1970-71		1990-91	
		Literate (in %)	Agri. Workers (in %)	Literate (in %)	Agri. Workers (in %)
50	Chhanchhva	39 71	27 45	87.06	40 18
51	Methi	50 60	35 39	56.98	37 93
52	Simli	50.96	27 24	56 62	32 04
53	Ranapur	43.56	37 24	53 06	26 60
54	Kothiya	45 63	40 29	53 82	30 68
55	Derol	47.90	26 89	53.48	47 19
56	Kanthariya	55.49	37 31	55.43	39 01
57	Latipur Timbi	46.23	23.45	43 81	38 12
58	Kala	39.03	26 14	57.52	28.64
59	Urad	46.71	34 02	52.94	28 21
60	Sarupur Timbi	45 60	30 50	68.31	37 70
61	Koliyad	44 61	36.06	58.51	36.81
62	Divi	40.22	37 70	63.34	24.84
63	Mankan	42.79	29 76	58.20	30 71
64	Mesrod	41 79	34.09	56.77	33 52
65	Sansrod	48 70	27 80	54.10	54 10
66	Haldarva	43 00	31 60	53 70	53 70
67	Mantroj	37.46	33.33	53 38	30 15
68	Saring	41 82	24.59	59 06	35 46
69	Sanpura	37 91	42 50	49 19	33 21
70	Karan	51.36	38 92	49.85	23 23
71	Samyad	38 03	37 09	53.05	40 43
72	Samra	31.81	36 06	50.09	30 58
73	Samri	25.09	33.54	55.67	30.60
74	Fatepur	39.68	38.80	51.33	29.24
75	Lajpma	5.02	50.00	56.41	34 06
76	Sherpura	43.81	29.20	46.64	55.29
77	Pachhiyapura	54.51	24.95	68.61	35.14
78	Delvada	50.42	25.95	56.75	29 29
79	Somaj	49 09	38 79	64 00	28 44
80	Arjanpura	41.59	28 04	56.41	32 05

KARJAN

REGION - III

Location Code No.	Name of Village	1970-71		1990-91	
		Literate (in %)	Agri. Workers (in %)	Literate (in %)	Agri. Workers (in %)
81	Oz	40.49	27.09	55 68	35 45
82	Rarod	46 62	35.09	62 83	39.85
83	Malod	34.67	28.94	59 33	29 02
84	Ropa	50 55	29.37	67 22	38 41
85	Hirjipura	35.63	38 13	55 55	43 39
86	Bakapur	28.79	39 13	32 53	40 96
87	LilodSayar	40 03	35 42	57 26	32 29
88	Sayar	37 87	35 43	50 11	31 54
89	Aagdol	47.18	28.48	53 31	28 31
90	Alampapa	39 89	23.82	47.23	41.70
91	Pura	33 33	23 24	52 22	33 97
92	Moti Koral	41 36	28.00	48.44	22 42
93	Nini koral	28 96	50 82	36 84	49 06

Thus, both Padra and Karjan prove the fact that literates are less attracted towards the agricultural work This has a definite bearing on the pattern of land use. In many a cases, the literates go for other services, giving their land on rent to other workers The results have been always undesirable, that the returns desired are hardly procured and the loss in the quality of the land has been a prominent phenomenon in such cases.

Increasing desire for higher education among the rural youth keeps them away from their homes for several years. After the completion of the desired courses of study they seek jobs and hardly like to come back to their parental professions (Field work) This is a usual phenomenon causing decrease in agricultural work force