



**HABITAT TRANSFORMATION: A STUDY IN
RURAL GEOGRAPHY OF KARJAN TALUKA OF
BARODA DISTRICT, GUJARAT**

SUMMARY OF THE THESIS

SUBMITTED TO

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY IN GEOGRAPHY

GUIDE *S.M.H. Rizvi*

DR. S.M.H. RIZVI

RESEARCHER

RAVINDER KUMAR

P/Th
9181

DEPARTMENT OF GEOGRAPHY
FACULTY OF SCIENCE
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA
VADODARA

April 1999

**HABITAT TRANSFORMATION: A STUDY IN RURAL
GEOGRAPHY OF KARJAN TALUKA OF BARODA DISTRICT,
GUJARAT**

Summary

To sum up the entire exercise of the text on rural habitat transformation of taluka Karjan, an amalgamation of all the themes, concepts and discussions from chapter I to the last has to be made which may reflect the types patterns and processes of change over time.

The habitat transformation in the geographic purview is the spatio temporal development in the aspects of area and population of any given space. Though the topic is more biased towards economic, it may very validly be taken up in geographical studies, as the area is the fundamental or rather the starting point in geography. Man, in geography is taken up as the most vital force, changing the nature and character of the areas according to his changing desires, and more for the achievement of his basic desire – ‘the comfortable life’ The concept of habitat transformation enfolds all such ‘changes for the better’ Activities, whether envisaged by governmental agencies through their thoughtful plans or by individuals or their societies intrinsically have the common basic goal of ‘change of the area for the better’. Thus according to DR. R.L. Singh”, it seeks to purvey a multi sector, multi level and multi-direction perspective of rural development”. The well being of the inhabitants is the core concept of its topic. It may, thus, be stated that present division of then world in terms first world, second world and third world, is not that there

are three worlds, but it is the varying levels of the transformation that could function as a combined factor to divide the same unit of the world into three varying levels of economies

To cite about Karjan- the area chosen for this work, it may be stated that it has been an area of dynamic nature and dynamic attitudes and behaviour, mostly set to respond for any change for the better.

As regards its location, it lies on the south-western fringe of Vadodara district flanked by Sinor, Padra, Dabhoi, Vadodara talukas in the east west and north directions and Bharuch in the south

In terms of latitudes and longitudes it is bounded by $21^{\circ} 49' - 22^{\circ} 7'$ north latitudes and $73^{\circ} 00' - 73^{\circ} 14'$ east longitudes covering an areal extent of 601.95 Sq Km. distributed over 93 villages and one town viz Karjan

Physiographically it has a gently rolling plain composed mostly of black cotton soil, at places interspersed with alluvial soils mostly nearer the banks of rivers Dhadhar in the north Bhukhi in the middle and Narmada in the south. The a rivers Dhadhar and Narmada traverse from east to west and merge with the gulf of Khambhat , while Bhukhi joins Narmada beyond Karjan.

In case of hydrology, Karjan is rich with surface and under ground reserves of water. Its rainfall is also well up of around 1000 mm enough for its agricultural requirements .Temperature varies form season to season Winter, are usually mild, but summers are quite hot. However, the gulf influence keeps the temperature confined to around 44° under the hottest conditions, otherwise it ranges between 35° and 42° during summer The later

summer becomes quite sultry owing to increase of humidity in the pre monsoon days.

Methodology applied for this work is quite simple, Most of the work depended on secondary data collected from the T. D. O Mamlatdar (Tahsildar) officers, as well as from various governmental and non-governmental agencies A brief survey of the chosen villages on the parameters of stratified random sampling has been conducted to gather the information about the N.R I. and their impact on their neighbourhood. All data processed and percentages computed, tabulated and mapped. Wherever and whenever needed deductive and inductive logic is applied for interpretation and establishment of facts.

The work is divided into six chapters

Introduction

Population.

Economic Activities

Co-operative Societies

Transport and Communication.

Summary, Conclusion and findings

Introduction unfolds, theme, meaning , definition and brief review of the literature on the topic, the personality of the area, methodology of the work, the choice of the area, time frame and the relevance of the topic. It is

attempted to cover all aspects in a comprehensive way. In short it is meant to introduce the topic, the area and technique of the work.

The most vital factor for any change or transformation on the earth is the population.. It is through the ingenuity of the population with in and outside the habitat that all changes take place of which the objective ever remains a better well being than the previous one.

In Karjan total population at the first point of time was 103081, which went up to 123033 during 1991. The addition at an interval of two decades was only 19952. This increase has the effect of decreasing the per capita share of T. G. A. a from 0.57 ha. to 0 48 ha and increasing pr ha density from 1.76 to 2 10. It has been less than that of the Gujarat state which was 1.98 and 2.11 per ha However, at the first point of time it was a bit remotely related, but by the second point of time it came in its close vicinity i.e. 1.76 and 1.98 was that of the taluka and the ^{state} respectively in 1970-71, and 2.10 and 2.11 was at the second point of time in the same order It show that where the taluka density has increased by 0.34, that of they state increased only by 0.13. the growth rate of the taluka for the two decades was only 19 38 per cent

The physiological density has also shown the decreasing trend that at the base year it was 1·1.51 hectare which reduced to 1·1.18 hectare reflecting increased pressure on arable land.

In respect of the percentage literacy at the first point of time, Karjan had 41 43 per cent that grew to 54 91 at the second point of time However at the first point of time it exceeded state and nation(38.60 and 34.40 respectively) but by the next point of time it surpassed the nation but was surpassed by the State (52.21 & 61 29 respectively).When male female literacy

is seen, it is found that in the first year males were around 91.11 per cent more literate than the females. By the second point of time females made better stride and decreased the difference to 71.29 per cent. However when male-male and female-female comparison of the two points of time is made the females have gone to 42.23 per cent higher in literacy than that of males which stuck to only 27.51 per cent. It is a new trend developing in rural areas that the fair sex hitherto treated as a house wife confined to domestic work are now liberated to go to school and improve their quality to be useful for more respectable and responsible work outside the four walls of their houses and be an earning member of the family. The increased family income thus improves ~~that~~^e life style, living standard bringing up of children and many more.

The work force structure of population has also shown a substantial change over two decades. Though it was largely monopolized by males having their strength four times more than the weaker sex, at least the latter had its one fifth share even at the base year. At the second point of time the females occupied 22.18 per cent dragging down the shares of males to 77.81 per cent of the total absolute work force. However, total working class of the taluka was 35.67 at the first, and rose to 40.56 per cent at the second point of time. This reveals the fact that work force is showing the increasing trend as the non-working class has slashed down from 64.33 of the former year to 53.41 per cent at the latter year. However, the fact is that the fair sex is gradually increasing in several fields of economic activities, that on one hand is increasing the percentage working force, and on the other hand improves, ~~The~~ economic status of the families and upraising the status of women in the society.

The basis of livelihood of all human community is categorized as occupational structure consisting of six types of generalized activities. These are found every where in the world, and so is in Karjan chief among them is agriculture the mainstay of rural population, others are industries trade services construction etc. The table below shows the percentage of workers engaged in each of them

Table 6.1

POPULATION ENGAGED IN DIFFERENT OCCUPATION IN KARJAN
(1970-71 & 1990-91)

Activities	1970-71	1990-91
Agriculture	91.01	84.39
Industries	2.56	5.10
Trade	1.36	3.08
Construction	0.46	1.38
Services	1.10	2.04
Others	3.48	3.98

Agriculture engaged the highest percentage of workers at both the point of time, but its gravity seems to have been decreasing as at the second point of time its work force decreased from the former 91.01 percent to 84.39 per cent. While in other activities a marked increase is notable. This revealed that now more attraction is toward more value-added activities paying relatively more than the agriculture or at least becoming a significant complementary to it. Cotton the most attractive crop attracted more workers, its loss lost the charm of agriculture making people to go to other paying jobs. With the passage of time trend of diversification is gaining momentum. On the

behavioral front, it is notable that man, even in rural areas, is not satisfied with one occupation so he seeks another to gain something more out of it.

In case of the services, education, health, banks and electricity supplies are increasing day by day. Schools have increased from 61 in 1971 to 91 in 1990. The standards have also gone up from primary to secondary and higher secondary. Public health centres have increased from 5 in 1970-71 to 6 in 1990-91, while private clinics went up from 29 to 42 during the same period of time, showing that private clinics are more preferred than the public health services. There are 5 national and two co-operative banks. No change in number but internal extensions have been made to meet the increasing demand. Electricity was served in all 93 villages during 1970-71. The total household consumption was, however, around 164377 units, and industrial consumption was 1787 units, which by 1990-91 rose to 463329 units in household, and 12335 unit in industries, reflecting greater use of electricity at both the fronts. This is higher swing in the living standards and industrial activities in the rural areas.

To assess the developments in economic activities, agriculture has been partially mechanized, innovation are widely used, seasons and timings of tilling and sowing have somewhat changed. More thrust is found towards highly paying crops. Cotton was the chief cash crops of the former year, but its downfall owing to the biotic infestation could not be stalled, so its replacing crop tur took a big share of 49.77 per cent of N. S. A. at the second point of time against its pitiable share of 1.78 per cent at the former year. Cereals maintained their position with slightly upper change from 18.8 to 19.2, however the undesired crops of the former year holding a meager share of N. S. A., like oil seeds fruits and vegetables and other crops have gained significance holding

5.00, 5.06 and 5.99 per cent in the three regions against 0.13, 3.16^{and 5.02} reportedly of the part. The N. S. A. decreased by 1048 hectares at the second point of time, partly because of increase in uses other than agriculture, and partly because of following by the non resident Indian land owners.

The cropping pattern has altogether gone upside down, as the very minor crops have acquired higher position and the only major crop. Cotton has fallen to even below secondary status

Although cottage and household industries have always been associated with agricultural activities in the rural areas, the present situations are found going on urban lines, as industries are gradually growing in these areas on minor and medium scales. It is more owing to the policy of generating employment avenues for the rural folk in their own habitat, and this way stall the rural urban migration. At the base year were 60 minor and 14 medium scale industries, by 1991 the former rose to 121 and the latter to 51. employing 5.65 per cent working population at the base year and as much as 5.16 per cent at the second year. This increase in industrial activities indicates that on one hand agriculture alone is incapable of meeting the two ends and on the other hand the surplus population has to seek the sources for their livelihood.

Commercial activities apart from agricultural goods have shown increasing pace in the rural Karjan. Hat and bazaars are the age old commercial practices of the rural people. They have periodic nature held on certain week days, and supply the needs of the people of the villages and their surroundings. They increased from 4 to 6 between the two points of time. Recently the fair price shops for sugar, kerosene and grains have been started. At the first point of time only 7 such shops existed, however, arising needs increased their

number from 7 to 35. Innovative agriculture paved the way for fertilizer and seed stores. At the first year as many as 10 such shops were handling the supplies of these requirements with the advancement in the scientific agriculture these shops also increased from the former 10 to 19 in the taluka. Along with the increasing demands of the rural people, and a life becoming comparable to urbanites several other requisites earlier unknown have stepped in. to supply them shops and general stores also started creeping in. By 1970-71 there had been only 40 shops of this kind in the taluka that made an spurt to as many as 140 at the second point of time. This reflects that rural habitat is by and large materializing the concept of 'agropolis'.

The non resident Indians of this taluka may be considered a vital factor in bringing several kinds of change taking ^{place} from agriculture to industrial and commercial activities, and from socio-cultural to structural transformation of their habitat. The villages of the NRIs themselves reflect their impressions. Other villages within the precincts of their own resources have attempted to follow suit on the same lines.

The co-operative movement in the case of habitat transformation may have to be emphatically cited. Where earlier almost all the activities now taken up by co-operative societies, were being conducted in an unorganized way. Agricultural credit, housing, agricultural marketing, industrial co-operative societies, and . the farmer's services societies have elevated the status of the activities concerning them and have saved the farmer's from the clutches of the indigenous money lenders who had the tendency of squeezing and exploiting the poor farmers, and in return the poor farmers were turned further poor. The societies have taken up the work on organized membership basis and have given laudable services, which has changed farmer vista for the

better. The subsidies, bounties and loans on manageable interest rates, the repayment in easy installments, marketing of the farm produce, loans for the payment of electric bills, and various other measures of support have changed the fate of the farmers. The farmers service societies concerned mainly with the poor and marginal farmers are striving for their upliftment. In this way these societies on their part have been attempting to change the agricultural milieu almost in totality.

The milk co-operative societies have made the milk production and sale an organized commercial activity and have arranged the measures for a daily or weekly income of the milk suppliers. This has become a very significant activity and a brisk business takes place every day as they supply their almost total produce through the milk collection centres to dairies at Vadodara and Anand. The integrated rural development has also given priority to milch cattle especially buffaloes in their schemes of loan disbursement.

Karjan has been well privileged in having been provided with transport connectivity. The broad gauge railway (the former B. B. & C. I) or the present western railway traverses the taluka dividing it into almost two equal halves from the southwestern side to north eastern. Karjan is a big station. Parallel to it runs the National Highway No 8 from the same direction to the same. These two big arteries of transport join Karjan with Bombay and areas en route from Mumbai to Delhi and beyond. Further they connect Karjan by their different connecting links to the rest of the country and the world at large. Apart from these highways of national importance, Karjan is also connected with its neighbouring places with narrow gauge railways. These railways connect Karjan with its own villages and with Sinor, Padra, Vadodara, Dabhoi, Chhota Udepur etc. though their services were discontinued for some time,

they are restarted with some useful alterations. These railway carry^{out} the goods and passengers to short distance, on small expenses.

The connectivity has been improved in recent years. A part from the national highway- 8, it has state highways District highways, taluka roads and approach roads to each village. These developments in transport network have facilitated accelerated mobility of the rural people in all seasons, and have provided opportunities to utilize their land in more reinforced capacities. They have the effect of increasing daily cash earning crops (vegetable etc.) and supply to the consuming markets in and around the taluka. Thus Karjan enjoys well developed means of transport of a total 292.56 Kms at the second point of time against 190.5 Kms of the former year.

Karjan did not lag behind in the facilities of the means of communication. It had 38 post offices at the first that went up to 61 at the second point of time, of them 4 villages post offices at Miyagam, Kandari, Choranda and Moti-Koral are provided with telegraph facilities, other post offices have the facility of collecting and sending telegraphic messages to the post offices. These facilities at Karjan town are also used by the near by villages. In 1970-71 almost 24 villages have telephone connections, that have increased to 46 including both public and private.

Conclusion

To conclude in nutshell, the study has revealed that the rural habitat Karjan is marching a head on the path of transformation. A study of two points of time i.e. 1970-71, and 1990-91 has shown that there has occurred a

sea change in the varying aspects of human life and activities, and the resultant prosperity – the chief goal has to a great extent attained.

A comparative study of the phenomenal states of the two points of time by analyzing facts to a great extent, has supported that the factors of transformation, individually and collectively have engineered the achievement of the set goals, over a period of two decades.

As the physical aspects, though very important in deciding the human fate, need a long time to change themselves, their influences are less marked, and so to say that they have not been remarkably effective, and per chance the rainfall has been more or less, enough to support the primary activities. Soil also remained static showing no accountable change. Thus the physical factors all in all have been in favour.

Population the most dynamic factor, has been probably the most significant ~~factor~~ for which have been produced several factors of development. However, its fast growth went up to the end of the first decade, but stalled and made sluggish onwards up to the last point of time . of study. In all 19950 people only were added to the former number (1970-71 population). Since the population N. S. A. ratio was already low, the added population made it further low urging to seek some alternative sources of employment.

Agriculture the only vital resource of sustenance for the previous population was well off, as that was the period of the suzerainty of cotton-the most important cash crop encompassing more than 70 percent of the N.S A. all over the taluka. But cotton domain was vehemently invaded by pests and disease, that its defense went beyond the might of man, and once the all and all

crop succumbed to very ordinary one. This was a big blow to the inhabitants of Karjan. However, per chance , the time was of the attractive prices and high demand of tuer, and it very comfortably replaced cotton though not in that stature enjoyed by the latter. Not only tuer, but other depressed crops like oil seeds, and cereals also raised their head to take on honourable share in the N. S. A. of the second point of time.

Apart from the change in cropping pattern, a sizeable change is discerned in the methodology. . The innovations are now widely applied as compared to the former year. The H. Y. Vs the early maturing crops, the ready cash earners, the use of tractors in place of bullocks, the dependable sources of irrigation by mechanized means and so on are other factors that have together made agriculture a gainful occupation. Thus change not only did occur in production but also in productivity.

Over a period off two decades between 1970-71 and 1990-91 economic activities other than agriculture have also expanded nearer the second point of time The cottage and small scale industries have improved, the medium industries have made their in road in the villages such as plastic, dolomite powder etc. Diamond cutting and polishing industries are gaining strength.. construction work, has increased owing to structural changes in housing patterns. Shops are increasing in villages supplying a variety of commodities of changing fashions, breakfast materials, cosmetics and even articles of music and amusements.

Co-operative societies have played vital role from agriculture to milk, and have mad them an organize sector of rural economy These societies are the saviours of the poor farmers from the Shylockish attitude of the

indigenous money lenders, and promoters of all member farmers in the farming and marketing of the products .

The electricity, though provided to near 100 per cent villages of the taluka, was not much in use. By the ending point of this study, it is observed that, its uses become multi pronged from domestic and street lighting to agricultural and industrial sectors. The bio-gas is another asset (wherever the plant is laid) giving an smokeless aid to cooking and lighting of rural houses.

‘Necessity is the mother of invention’. This proverb, though applicable to all aspects of development, may be quoted for the service sector of rural areas. The banks, the co-operative banks, other monetarily supporting agencies are functioning on demand to the needy farmers, and industrial entrepreneurs. The educational institution, at least, up to higher secondary, in both English and vernacular mediums have the effect of increasing literacy percentage in both sexes. Medical services also play a significant role at the health front. Thus many of the necessary amenities of life including the tap water for drinking are easily and comfortably made available to rural folk in their own areas.

The NRIs, though once the resident of the same area, have now become a vital factor in the growth of their villages. Their investing capacity, their demands of a bit higher standard, their living style etc have encouraged the supplying agencies to be started at hand. Thus agriculture, shopping, transport and various other amenities of life for them and their families are drawn near by. Further the money of one person, when comes in circulation benefits many. Government policies and plans may also be rated high in this respect.

Transport and communication has developed more during the second decade of the study, though its process started during and prior to the first decade. Major lines of transport viz. railways both broad and narrow gauge, and national high way existed much before the first point of time, and their benefits were enjoyed by those connected by them. But when the state highways, district, taluka and village roads were provided, the entire network became functional for all . Now the commercial vehicles of all kinds are plying on the roads serving one or the other needs of the people and even it became easy for the students to reach schools and back home in a short time.

Finally it may emphatically be stated that all the varying factors mentioned above, and over and above the dynamic and adoptive nature of the residents of the taluka, their decision making and also their ambitions to develop their habitat has, by and large ,brought a conspicuous habitat transformation in rural Karjan over the period of two decades under study.

Findings

- Karjan is favourably located, in central main land Gujarat, enjoying suitable condition for its growth
- Its soils are fertile and most suitable for the cotton, once, the very important cash crops, i.e. during 1970-71 and onwards However, owing to the severe blow to it due to unavoidable circumstances that it lost its glory, but the soils have assured better out turn of other cash crops and also cereals viz tuer, oil seeds vegetable, and wheat, but tuer has become the main substitute of cotton

- The population is found dynamic and conscious of the available resources and so growth rate has been found substantially reduced within the period of two decades from 1970-71 to 1990-91, more particularly between 1980-81 and 1990-91.
- Against the general notion that literates do not like agricultural work, it is observed that by 1990-91 many of them have preferred to this profession, rather than serving elsewhere. It indicates the profitability of this profession.
- In the race of literacy the fair sex has been found marching ahead, breaking the traditional social taboos, and also moving towards extra domestic jobs.
- Housing and living conditions are going on improving on the modern lines.
- Innovations have been readily accepted and used by farmers for better output of their investment of labour and capital giving them desired benefits.
- Diversification of occupation is fast increasing giving them supportive profession along with their main-stay that is agriculture.
- Education facilities have satisfactorily grown, increasing the literacy rate to far higher stages than the former period of time.
- On the health care front Primary health centres and private clinics have entered the rural area and these facilities are availed by the rural people against the former spiritual treatments by Ozhas, Bhujas, quacks, peers etc.

- Amenities of life are also increasing day by day that people are enjoying the electricity for domestic and agricultural uses.
- N. R. Is. factor is an outstanding one that has cast its influences on the taluka in general their own villages in particular.
- Hat and bazaars though not new in rural areas, are now functioning on a bit more organized way and catering the current needs of the village people. Not only these traditional commercial places, But now shops of kerana, cutlery, cosmetics, milk, tea farsan, ice creams , cold drinks, chemist etc are also sprouting, indicating the improvement in the purchasing consuming behaviour of the people.
- Co-operative movement through co-operative societies brought revolutionary results on agricultural, milk and marketing fronts. The farmers service societies have to a great extent improved the economic conditions of the small and marginal farmers.
- The transport and communication lines have also developed satisfactorily whereas railway of both types i e. broad gauge and narrow gauge served the area much before the first point of the study, but taluka and village roads substantially developed between the chosen period of study are giving a convenient outlet to each village in all seasons. Telecommunication lines have recently been provided to the villages to give them easy accessibility to the local areas and abroad.

Finally these developments in the vast agricultural workshop of the rural areas is found to have marching towards evidencing the concept of the growth of 'agropolis' within agrarian milieu