Critical Study of Rural Settlement in Pen Taluka, Dist. Raigad

A Dissertation submitted to

TILAK MAHARASHTRA VIDYAPEETH,PUNE

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M.Phil in Geography
(Faculty of Social Science)

Submitted by

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M.A.B.Ed.

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July 2010

DECLARATION

I hereby declare that the dissertation entitled **"Critical Study of Rural Settlement in Pen Taluka, Dist. Raigad"** completed and written by me has not previously formed the basis for the award of any degree or other similar title of this or any other University or examining body.

Mrs. Bhale P. G.

Research student

Place : Pen, Dist. Raigad

Date : /07/2010

CERTIFICATE

This is to certify that the dissertation entitled "Critical Study of Rural Settlement in Pen Taluka, Dist. Raigad" which is being submitted herewith for the award of the Degree of Vidyanishnaat (M. Phil.) in Geography of Tilak Maharashtra Vidyapeeth, Pune, is the result of original research work completed by Mrs. P. G. Bhale under my supervision and guidance. To the best of my knowledge and belief the work incorporated in this dissertation has not formed the basis for the award of any degree or similar of this or any other University or examining body.

Dr. P. S. Kudale

Research Guide

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Place : Omerga

Date : /07/2010

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II) LIST OF GRAPHS

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Name and Number of Villages in Pen Tahsil

Sr.No.	Villages
1	Mothe Bhal
2	Vitthalwadi
3	Tuikaramwadi
4	Kaleshariwadi
5	Mothe Vadhav
6	Lakhola
7	Narwel
8	Wadhav
9	Div
10	Borze
11	Kane
12	Koproli
13	Patnoli
14	Antore
15	Umbarda
16	Dhondpada
17	Odhangi
18	Washi
19	Benavale
20	Masad BK
21	Masad KH
22	Borwe
23	Shirki
24	Bori
25	Kolave
26	Beneghat
27	Wadkhal
28	Shinganvat
29	Wave
30	Dolvi

Sr.No.	Villages
31	Nandai
32	Jui Kh
33	Jui Bk
34	Turkhul
35	Dushmi
36	Khar Simadevi
37	Kharpada
38	Kauli Simadevi
39	Kharkoshim
40	Rave
41	Dadar
42	Kopar
43	Dubej
44	Borli
45	Jite
46	Kharoshi
47	Niphad
48	Jawali
49	Karodi
50	Padale
51	Nidhavali
52	Durshet
53	Navkhar
54	Davre
55	Hanumanpada
56	Bolawali
57	Govirle
58	Tambadshet
59	Johe
60	Kalave

Name and Number of Villages in Pen Tahsil

Sr.No.	Villages
121	Chirbi
122	Kelambi
123	Jirne
124	Mahalmirya Dongar
125	Panchagani
126	Moujepale
127	Khar Jambola
128	Kharghat
129	Kharmachela
130	Khar Dhombi
131	Kharpale
132	Jui Habbas Khani
133	Mhaisbad
134	Burdi
135	Kasu
136	Patani Pandapur
137	Salinde
138	Kalad
139	Usar
140	Kurnad
141	Pabal
142	Kondhavi
143	Jambhoshi

Sr.No.	Villages
144	Revoli
145	Dhaulpada
146	Nigade
147	Kasurghuntwadi
148	Kalai
149	Amtem
150	Warap
151	Karli
152	Khar Koleti
153	Talekhar
154	Gandhe
155	Chole
156	Khar Ovali
157	Jambhul Tep.
158	Koleti
159	Tarshet
160	Mundhani
161	Atlwali
162	Shinu
163	Zotirpada
164	Shet-Jui
165	Benase
166	Kuhire

INTRODUCTION

CHAPTER-I

1.1 SCOPE, PURPOSE AND PROBLEMS

Introduction

The study of settlement is basic to human geography because the form of settlement in any particular region reflects Man's relationship with the environment. Settlements have gradually grown up and evolved over a long period of time and by studying the site, pattern and arrangement of settlements we can see something about the history of Man's exploitation of the surrounding land. Settlements mean the places where people live and work. According to change the nature of work with respect to space and time and that influenced his settlement. That is why shelter was converted into different types of settlement like isolated dwelling, hamlet, village, small town, city and conurbation. This hierarchy was mostly influenced by physical, social, economical and cultural factors. These factors also affects on its distribution, spacing, size and morphology of the settlements. Therefore increase the size of settlement, higher the population and more services are provided to the people. Rural settlement has a very low density

of population and agriculture is the chief source of livelihood along with fishing, animal husbandry, mining, cottage industries, pottery etc.

The study of settlement has been one of the most significant themes of human geography. The term ‘settlement geography’ is derived from the German word ‘siedlunge geography’ (R.L.Singh,1978) which involves the study of visual imprints made by man upon cultural landscape in the process of occupation. Rural settlement as a pioneer habitat of human being is a functional space. That means a rural space occupied by rural community with their economic, social and cultural environment. This atmosphere affects on entire rural way of life. Mostly rural settlements are dependent on primary occupations.

Definitions

According to the Planning Commission, “a town with a maximum population of 15,000 is considered as rural”. In these regions the panchayat takes all the decisions.

The National Sample Survey Organization defines ‘rural as follows:

1) A region with a population density of up to 400 per sq.km.

2) Villages with clear surveyed boundaries but no municipal board.

3) A minimum of 75 per cent of male working population involved in agriculture and allied activities.

Schluter has defined as “rural settlements in wider perspectives of the location, size and growth pattern and considered them as part and parcel of cultural landscape”.

Perpillou has observed that “Settlement is man’s first step towards adapting himself to his environment”.

RBI defines the rural areas as “those areas with a population of less than 49,000”.

Carl Ritter is considered as the founder of the settlement geography. Rate, Meissen, etc geographers are studied on settlement geography. Settlements are the most distinctive form of the cultural landscape. It is man-made habitat on earth surface.

Settlements can be classified on the basis of their site, location, size, shape, function, origin, economic development, planning, occupation etc. But generally settlements are classified into two types:

a) Rural settlements and b) Urban settlements.

Rural settlements are characterized by primary occupation, extensive land use pattern, low density of population, slow and old means of transport and communication, poor economic development, traditional way of life, greater spirit of cooperation and less polluted environment. \these settlements are smallest in size.

Characteristics of rural settlement

- Population size and density is low
- Depend on primary economic activities
- Limited amount of public facilities
- Drinking water may not be clean
- The amenities is usually so far away
- They have a poor standard of living
- They have traditional way of life
- Less air pollution as there is no technology that pollutes the environment.

The study of settlement is basic to human geography because the form of settlement is any particular region reflects Man's relationship with the environment Settlement have gradually grown up and evolved over a long period of time and by studying the site, pattern and arrangement of settlements Each new innovation in agricultural techniques has had its effect on settlement patterns, and also in underdeveloped countries, where more recent changes have modified long-established settlement patterns. For instance, the Eastern part of Pen taluka traditionally lived on fortified hilltops where farming land was restricted, but now that the area is more stable politically, there are moving down to new villages on the plains. The new villages have many advantages: the growing of cash crops such as Vegetable crops is easier; land is less restricted bad irrigation is possible. In other areas settlement patterns have been changed by an influx of immigrants who established distinctive towns and villages. Indian colonists often greatly modified traditional settlement patterns by bringing in styles with which they were familiar. Similarly, the introduction of new crops and new ways of life can change settlement patterns.

Settlements reflect not only Man's response to his environment but also the religious and social customs of his society. Some buildings in a town or villages are always reserved for public use, such as a town or village hall, a church, mosque or temple, administrative buildings or the palace of a local ruler. The type and number of such buildings help to give settlements their distinctiveness. Similarly in settlements where several different groups of people are thrown together, the town or village may be divided into separate 'quarters', each distinguished by particular building styles or house arrangement or by different religious or other communal buildings.

In fact the almost endless variety of settlements can be classified in several different ways. The most obvious division is into towns and villages. This is not merely a matter of size. In some areas of dense population villages may be very large, in Indian villages may house several thousand people. On the other hand, towns may be very small, smaller than many villages. The basic difference between towns and villages is that in towns the chief occupation of the people is trade or industry of one kind or another while in villages most of the people are engaged in agricultural work. Some other occupations are found in villages such as fishing, lumbering or mining, but such villages can be distinguished from towns with similar occupations, the lack of a commercial or shopping centre and by their lack of industries.

Settlements can also be classified by their pattern or shape. For instance, in some areas large numbers of scattered farms or homes may be spread over an area to produce a dispersed pattern of settlement. Another way of classifying settlement is by their site and by their position or situation. Few settlements have grown up at random and the site on which people choose to build their town or village always has some particular advantages.

Site refers to the actual piece of ground on which the settlement is built. Situation or position refers to the location of the village or town in relation to surrounding areas. Thus a village may be sited one a river bank above flood level. Such a site will be convenient because although water is always available the village will not be subject to inundation. This site may also have a favorable situation if the river is navigable and can be used for transport to neighboring towns and if the land in the vicinity is fertile and easily reached from the village. On a larger scale, a town may be sited at a particular point on a river where it is easy to build a bridge. This bridging-point site will have a favorable position or situation if it is a place where a

number of routes converge or where it can draw supplies of a variety of materials from the surrounding area and thus establish industries.

1.2 STUDY AREA

Pen Taluka is situated in the district of Raigad (Kokan division) in Maharashtra state. It lies in between 17^0 51' North to 19^0 80' North latitude and 72^0 51' East to 73^0 40' East longitude. Pen taluka lies on the right bank of Bhogawati creek about 10 miles from its mouth, at high water spring tides, the creek is navigable for boats of forty tons to antora, a mile and half below Pen. The Bhang bander or neap tide port is four miles below Pen. Average elevation of the study area is 18 meter (59 feet).

Pen is the centre of considerable traffic between the Deccan and the sea coast. Truck comes down in Sahyadries along the Khopoli road bringing tobacco, pepper and onion and taking salts and rice.

1.3 OBJECTIVES

The main objectives of present study are shown in following ways.

1. To observe the pattern of rural development in the study area.
2. To analyze social, political and educational facilities for rural development.
3. To analyze the effect of physical and climatic condition on settlement in the area under study.
4. To study the fundamental facilities entire the study region. (Like road, water, electricity etc.)
5. To contradictory about facilities and non-facilities in different aspect in study area.
6. To study developing plans for rural settlement in study area.

1.4 DATA BASE AND RESEARCH METHODOLOGY

The data collected and used for the period 2005-2010 comes both from primary and secondary sources. The primary data is the raw data collected through different sources for which special questionnaire were designed, information collected through various official Villagers and information technology. The broad picture of present pattern of settlement, land utilization of the Pen taluka is prepared with the help of secondary data obtained from official statistics from socio-economic review, district statistical abstract, district census handbooks, gazetteer Maharashtra State., Published & unpublished materials. The information is also obtained from the Bureau of Economic and Statistics, the Zilla Parishad, etc. certain data like information pertaining to these aspects has been collected through questionnaires, personal interviews, visits to district and Taluka headquarters in the study area. This study pertains to rural Pen Taluka comprising 166 villages. It is considered necessary to supplement secondary information by in depth micro-studies at village level. For this purpose, one village from each types of settlement has been chosen. A micro-level study includes village to village survey of the settlement, covering information of relevant aspects such as sources of number of houses and facilities available in villages, villages size etc.

The data thus collected, through primary and secondary sources, were processed and represented by statistical and cartographic techniques, for these dissertation I mostly want to use Angina P. Desai (1984) used R_n Technique she has illustrated the analysis of settlements in a system - a case study of Mahesana district of north Gujarat. For the analysis of a relative location of rural settlement in a special context as well as to show the impact of one settlement on during 1951-81 and space. She has been used the nearest neighbor technique with following formula. Spearman's correlation technique is used for analyzing the relation between various villages.

1.5 Review of Literature

Number of geographers and researchers had been studied about rural as well as urban on settlement in different part of area.

D. R. Nayak (1977), author is written a research paper on Evaluation of rural settlement in the Chhattisgarh region. In his articles he had discussed regarding pre historical, early medieval period, late medieval periods and modern period in the evaluation of rural settlement in Chhattisgarh (MP).

S. Subrahmanayam (1926), he had a published his paper our rural geography. In his research paper he had focused on rural settlement, its pattern and origin. Again he said that in every village consists of 1) inhabited part 2) the tank or other water source supply 3) the cultivable land and 4) public land generally left follow and used as grazing ground where nothing better available for the purpose.

H. J. Nitz (1972) the author had been discussed regarding the evaluation and distribution of rural settlement in Germany. In his study reveals that research in the evaluation of settlement in 16th to 19th centuries. Mirashi (1965), Chisolm (1868), Mukherjee (1962), Sarkar (1958), Varma (1972), Havell (1972), Chuningham (1963), Ray (1964), Varma (1976), Bhonsalas (1741), Agnew (1820), Gorham (1951) Baden Powell (1974) these eminent researcher had been studied regarding the position status of rural settlement in pre-and post-medicinal ancient and modern period.

R.P.Mishra (1979), he had a studied on Development of Rural Settlement and growth centers. In his paper he had discussed about basic need of rural settlement, household, hospitals and current the conditions in rural settlement distribution and goods and services in rural

settlements. For this purpose of the author was data contained in the UNCHS study of rural settlement are based on to 12 case studies in 19th centuries in Africa. These cases studies were commissioned by the Centre for Housing, Building and Planning in 1977 as part of global survey of condition in low-income settlement in both urban and rural areas

A. B. Mukherji (1987) author had focused the rural settlement of the Chandigarh Shiwalik hills. In his article evaluation of settlement pattern through diffusion was limited, by the constraint of geomorphologic setting and clan territoriality to the valleys. Hence, there are a large number of unit-religious, multi castes.

L. R. Singh (1958), he had a publisher of his research paper on Rural Settlement in the Tarai region of U. P. in his paper author discussed about prehistoric settlement, Aryan settlement, settlement of Buddhist period, post Buddhist period, Muslim period and modern settlement and their regional distribution, regional type of settlement, their causes and co-relations and factor affecting rural settlement types in U.P.

J. N. Pandey (1975), the author had been studied in detail regarding the rural house types in the middle Ganga plain case study of Paras Rampur Village. In his valuable articles he had discussed houses type according to socio cultural variations, size and shape and building materials. Finally he had concluded that houses in the village are governed by both physical and cultural factors. The building material are derived from the soil and natural vegetation but the shape, size, architecture and degree of improvement in the housing conditions are determined by the social economic conditions of the people.

S. L. Kayastha and J. Prasad (1978), these authors had been discussed about infrastructure, demographic pattern cropping pattern, land use pattern, employment pattern,

irrigation, transport, communications, service agencies and problems and planning of rural settlement in Phulpuri block, Allahabad district. Authors had concluded that, the knowledge and experience available needed to be further developed and supplemented to a considerable extent especially in relation to local planning strategy, based on a scientific survey and identification of the need and potential of the areal unit, proper coordination and subsequence of programmers in related fields.

Shrikamal Sharma (1987), he reveals that problem of rural integrated development in central India. In his book he clearly mentioned that, depth of poverty, evaluation of caste relation, rural industrialization, lack of infrastructure and different social and environment. Hence, author summarized that even in the backward state there are wide differences in the level of social economic development in different territories.

The most of literature on settlement geography, particularly on the town of the developed countries has grown during the present century.

The present pattern of settlement distribution in the result of a long process of extension and growth as well as of retreat that is why the study of their historical evaluation is an important theme of research in rural settlement studies. Regions are built up numerous settlements which constitute their elements. In order to understand the evaluation of the region we have to study the individual settlements, their topographic sites, and their layout of their residential area which we call the settlement pattern.

In Germany where the author has worked in the field of historical settlement geographer of many years, research of this kind began as early as the late 19th century. The most imminent of scholars who actually initiated these studies was Auquest Meitzen. He carried out intensive

historic genetic research in settlement and field pattern in many regions of Germany with the co-operation of geographers as well as historians.

Gosal G. S. has given a number of typical samples of settlement and field pattern from Germany and northern India. He has also discussed the problem of research connected with such pattern. As far as the author knows research on field pattern and their evaluation in India has not gained much interest among geographers.

Milne G. (1942) his research paper is published in eminent Journal. He discussed the physical form and structure of traditional settlement in Tanzanian village. This short note was originally written in 1940. He point out that, over much of Tanzania no true, nucleated village exist because the people had no motive for being gregarines. The provision of goal and services from 1 Centre Place is not important enough in the lives of most people to precede them to move from their forms. Where they are best placed to carry out their daily tasks.

Georgulas (1967), has attempted to give the first estimate of the number of people living in the two contrasting type of settlement - the gathered and the scattered.

Rigby PJA (1962), the author notes that, shallow decent groups or lineages usually not extending back more than three or four generations. From the residential unit among the wagogo.

Dobson (1955), he had compared the land tenure of Ten Tanganyika tribes and cities three factors governing the evaluation of these rules - the political system of the tribe, the scarcity of cultivable land and the type of crop grown using these factors he divided the customary tenure law of these 10 tribes into seven groups.

A vast amount of literature on settlement geography particularly on the towns of the developed countries has grown during the present century, but our knowledge of current process growth, configuration, problems and implementation of development of rural settlements in developing countries like India it is still very limited. In our country is their credit for introducing these banks of geography bows to Professor E. Ahmad, Prof. A. B. Mukherji, Prof. M. Anas, Prof. R. L. Singh and Prof. Pithawala and Buschman and others.

E. Ahmad (1948) Studied settlements in the united provinces of Agra and Oudh. He also described the Indian village pattern based largely on the study of 1 inch topographical maps. The author has described the various physical and cultural factors, which are responsible for various types and pattern of rural settlements in the study area.

A. B. Mukherji (1953) Studied jat settlements and habitations and made a valuable contribution in this field. He has also worked on Moradabad and Bijna districts. He has described the growth and distribution of rural settlements and explained of the various types and pattern and given suggestions for the development of rural landscape of the region.

M. Anas (1954) in his study the pattern of rural settlements in the sub Himalayan Region, discussed in detail the radius the various patterns of rural settlements.

R. L. Singh (1961) Studied "Evaluation of settlement in the middle Ganga Valley" and provided guidelines to investigators in this field. He has explained the meaning and objective and the scope of rural settlement geography. Author has described the origin growth, distribution and morphology of rural settlements as well as rural house type in the study region. This becomes a significant study of rural settlements, which inspired the many students of geography in this branch.

N. D. Bhattacharya (1965) In his Ph.D. thesis on " Evaluation of settlements in the district of Murshidabad, West Bengal " and a paper round same subject as tried to explain in detail the evaluation, growth, morphology of settlements in relation to physical setting. Author also described the types and patterns of rural settlements in the study region.

L. R. Singh (1965) Studied rural settlements in the Tarai Region of U.P. he has given detailed analysis of the evaluation, growth and distribution of rural settlements. He further discussed the social economic conditions of villager's population composition, spacing of rural settlements and physical - cultural elements are dominating factors for the development of rural settlements.

A. Prasad (1969) has made detailed study of "Rural settlements of Chotanagpur" and has explained in detail their evolution, types and spatial distribution he has so nicely correlated physical landscape with various aspects of settlements.

Anjana P. Desai (1984) she has illustrated the analysis of settlements in a system - a case study of Mahesana district of north Gujarat. For the analysis of a relative location of rural settlement in a special context as well as to show the impact of one settlement on during 1951-81 and space. She has been used the nearest neighbor technique with following formula.

$$R_n = 2d\sqrt{\frac{N}{A}}$$

Where R_n = Nearest Neighbor Index

d = Mean distance of a centre from its nearest neighbor

N = Number of settlements

A = Area under consideration

For calculating population potential she has been used the following formula considering population and distance in a system.

$P_{ix} = \sum_{j=1}^{n} \frac{Mj}{dij}$

Where P_{ix} = population potential of its centre exclusive of

The centre itself

Mj = population of j

dij = distance between i and j in km.

She found that in neighbor analysis Rn value of various talukas of study area varied between 1.23 and 1.54 by these values it is clear that seems they are not showing considerable variations, so it is clear that there is no definite force or process that has controlled the pattern. Whereas homogeneous environment conditions gave rise to pattern towards uniformity, while clustering takes place where they are unique facilities found together in the area. She has also observed that population potential which is based on concept of gravity is expected to be high if settlement is surrounded by larger settlements and distance between them is small.

The author concluded that mathematical model of nearest neighbor analysis and population potential surface are helpful techniques is understanding the overall spatial pattern or structure of settlements. The analysis of population potential and of density residuals indirectly indicate the areas of accessibility flow of people and commodity and hierarchical system is of settlements of an area.

Ambubai Desai and K. M. Kulkarni (1988) Studied for tribal villages of north Gujarat as a part of the pilot project sponsored by the Department of environment, Government of India.

S. C. Singh and S. B. Singh (1988) Studied settlement distribution and their correlation with morphometre attributes in Simla Hills.

S. B. Sawant (1998) Studied development and change a study of village Khadki, Pune District (Maharashtra). In this paper the author have reviewed the situation of Khadki village during last 40 years and analyzed the socio- economic change in the village. The author has collected data on socio- economic conditions in the village by a house to house interview for land use purpose revenue records were used.

1.6 Chapterization

The present study had been divided into six chapters.

First chapter deals with the appraisal of the problem, aim and objectives, hypothesis, database and methodology, review of literature as well as importance of rural settlement are discussed in detail.

Second chapter reveals that, he physiographical study of Pen Taluka such as, physical and demographic determinations.

The third chapter includes evaluation, growth and distribution and type of rural settlement and their characterizations.

The fourth of the chapter deals with the rural service centers and distribution of amenities.

The fifth chapter is related with case studies on attempt is made to study of the type of settlement categories, their occupations, General land use, agricultural land use and all physical and demographic conditions such as social economic conditions of the selected villages at micro level. Attempt eaves made to discuss the social economic problems of the study region and the suitable suggestions are also give to change the situation and thereby to achieve rural development.

PHYSICAL SETTING OF STUDY AREA

Chapter II

PHYSICAL SETTING OF THE STUDY AREA

PHYSICAL AND DEMOGRAPHIC DETERMINANTS OF SETTLEMENT

2.1 THE REGION- GEOLOGY - PHYSIOGRAPHIC

2.2 CLIMATE

2.3 TEMPERATURE

2.4 DRAINAGE

2.5 SOIL

2.6 POPULATION

2.7 HISTORICAL BACKGROUND

2.1 THE REGION- GEOLOGY - PHYSIOGRAPHIC

Introduction

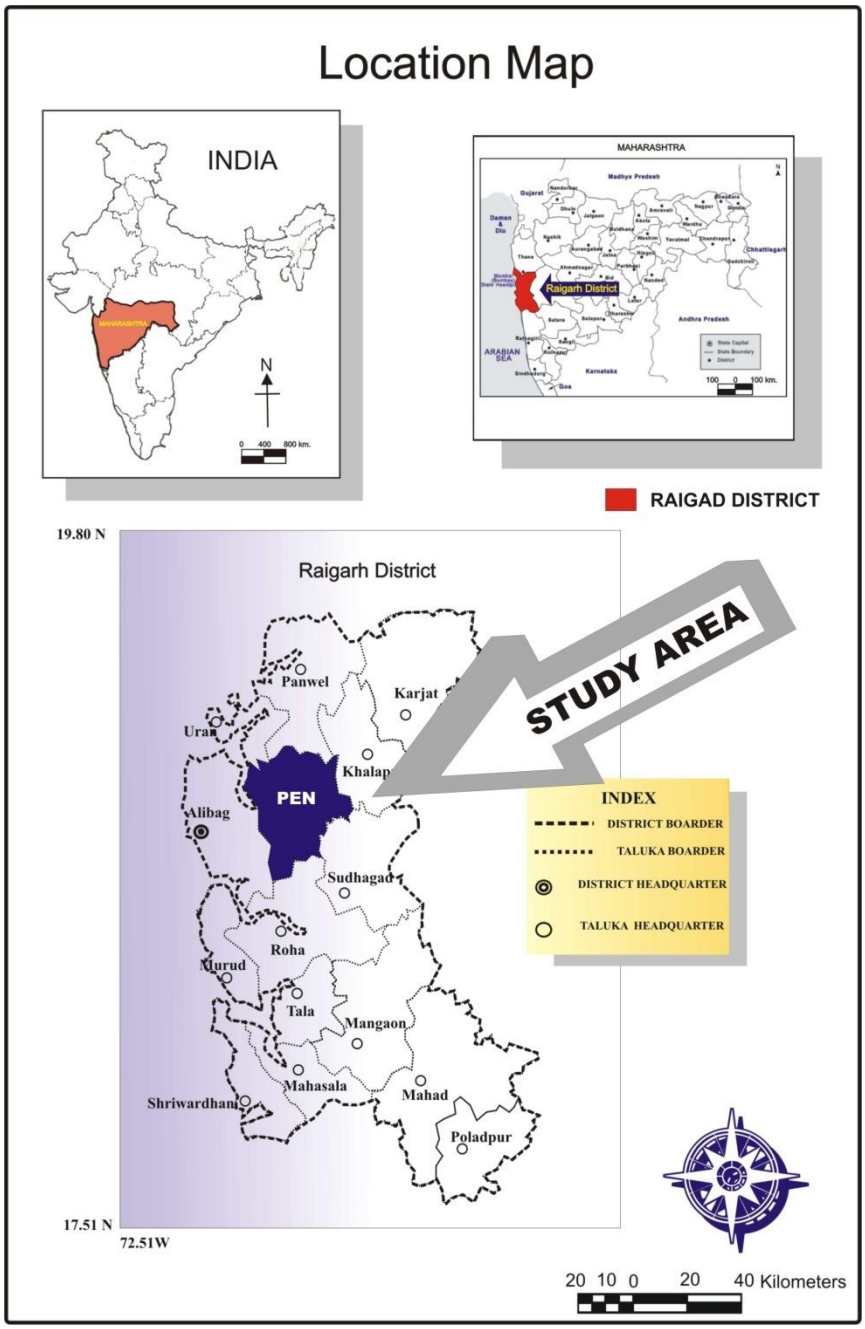
In Konkan region there are four districts including Raigad district which contributes 240 kms Out of 720 kms costal length of Arabian Sea. The district is having natural beauty and historical background with fort built by Shri Chhatrapati Shivaji Maharaja

The district is located at $17^0.51^/$to $19^0.80^/$ North Latitude & Longitude of $72^0.51^/$ to $73^0.40^/$East with an Altitude of 10 to 50 m from mean sea level (MSL).

Raigad district is surrounded by sahyadri ranges in the east beyond which there is Pune, south east side Satara district. Thane district on the North, Mumbai in the North West side, the Arabian Sea on the west and Ratangiri district on the south side which is divided by Savitri River

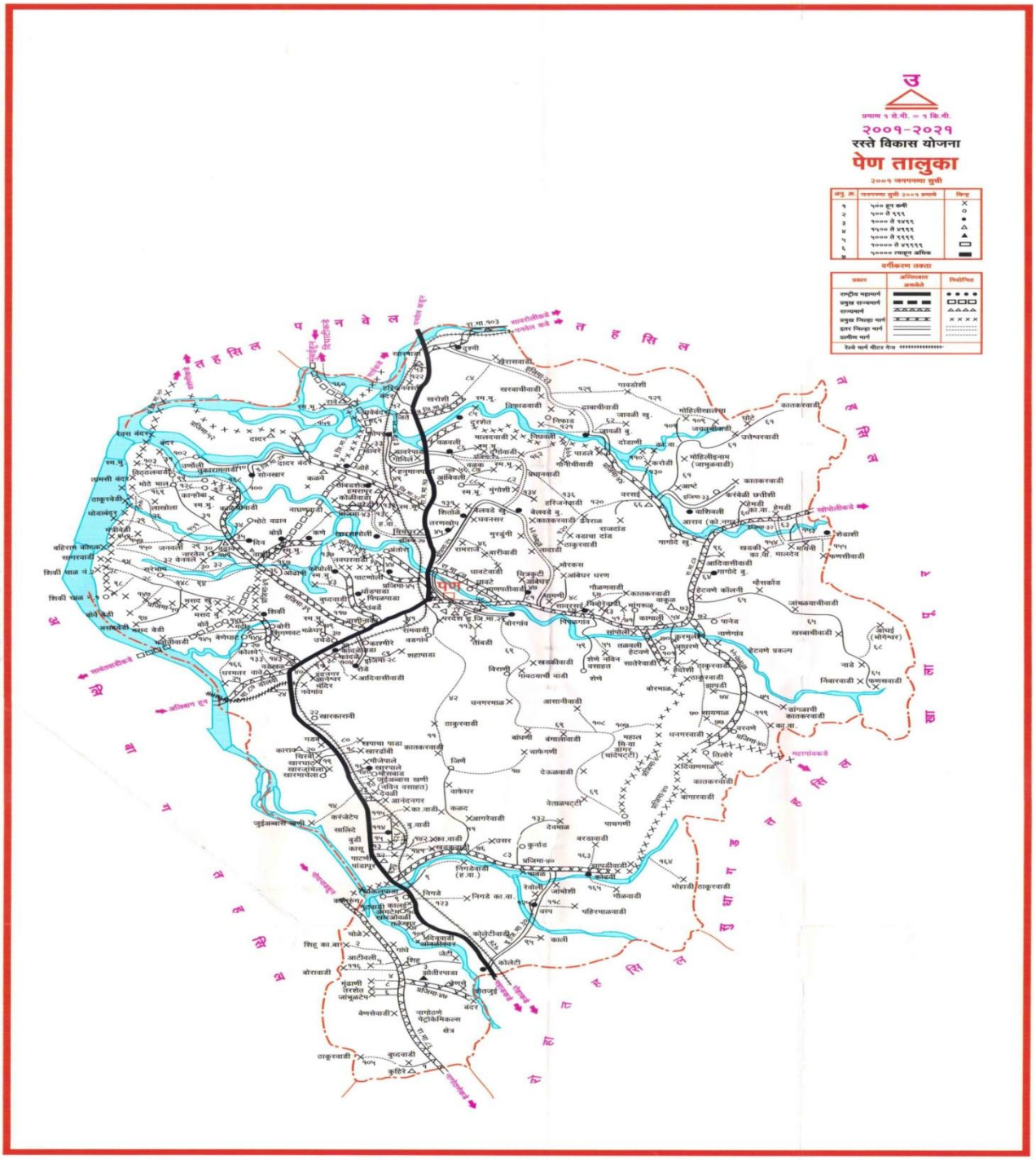
Raigad District comprising of 15 tahsils and 1919 villages covers total geographical area 6.867 Lakh Hectare (7152 Sq.kms). The tahsils is *Alibag, Pen, Murud, Karjat, Khalapur panvel, Uran, Mangoan, Tala, Roha, Sudhagad, Mahad, Poladpur, and Mhasala & Shiriwardhan.*

As per the Socio economic Survey of 2010-2011, the total geographical area of the district is 6.87 lakh hectare out of which 29.87%, area is under cultivation, 7.57% uncultivated, 21.65% under forest, 8.00 under miscellaneous plantations, 22.68% under non agricultural use and 18.23% is barren and uncultivable waste.



Map no 2.1 Location Map Raigad district

Pen is taluka in a Raigad district of Indian state of Maharashtra. It lies on the National Highway NH 17 Mumbai Goa Highway. It is famous for many products. There are some controversial plans to set up SEZ's on the outskirts of the city.



Map no 2.2 Map of pen taluka

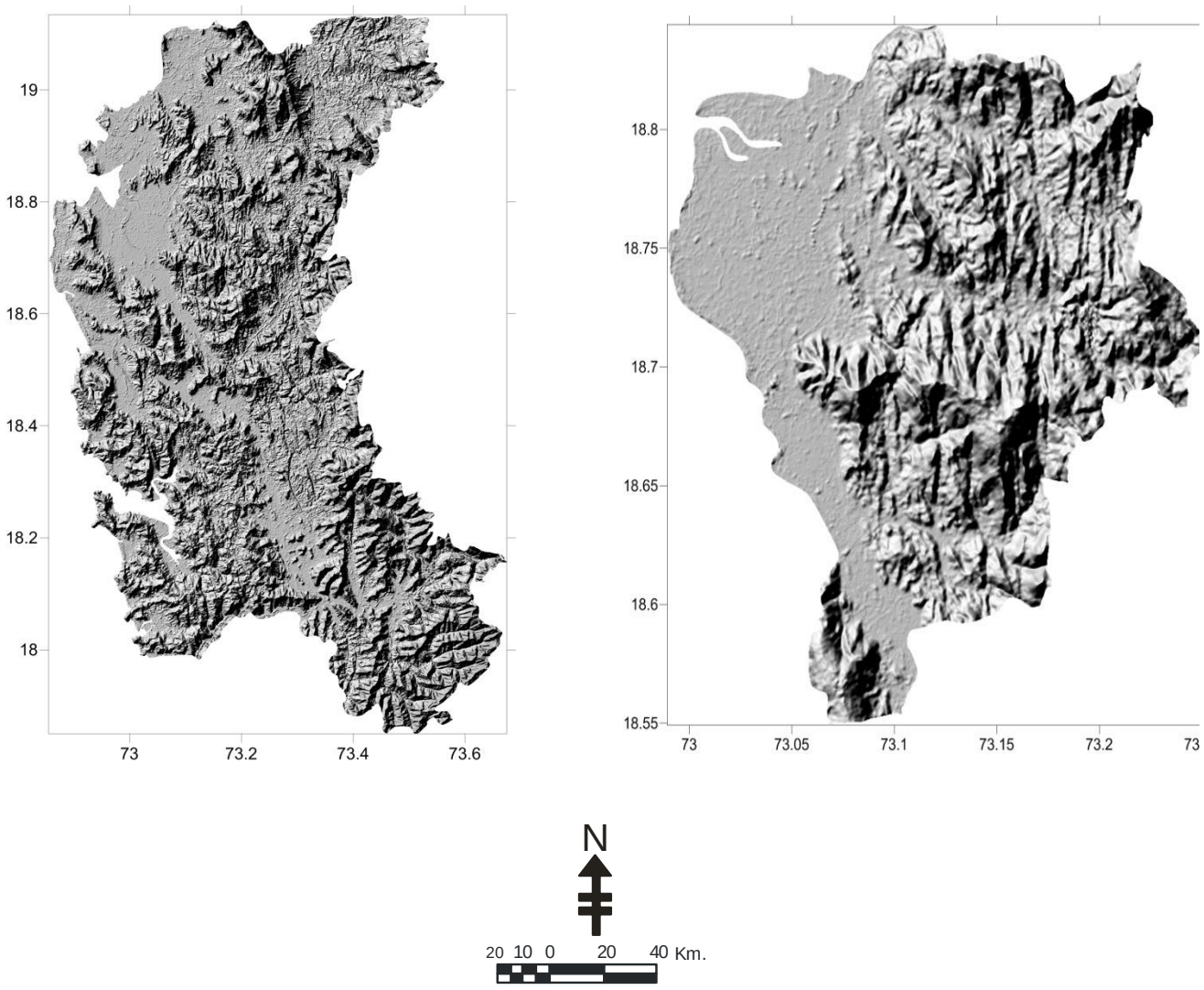
Pen (T. Pen ; $18^{0}40'$ N, 73^{0} 05' E, p. 8607 ; Khopoli, 12 km.) the headquarters of Pen Taluka lies on the right bank of Bhogavati creek about 10 miles from its mouth. At high water spring

tides, the creek is navigable for boats of 40 tons to Antora, a mile and a half below Pam. The Bhang Bandar or neap tide port is four miles below Pen. A built road joins Pen with Antora.

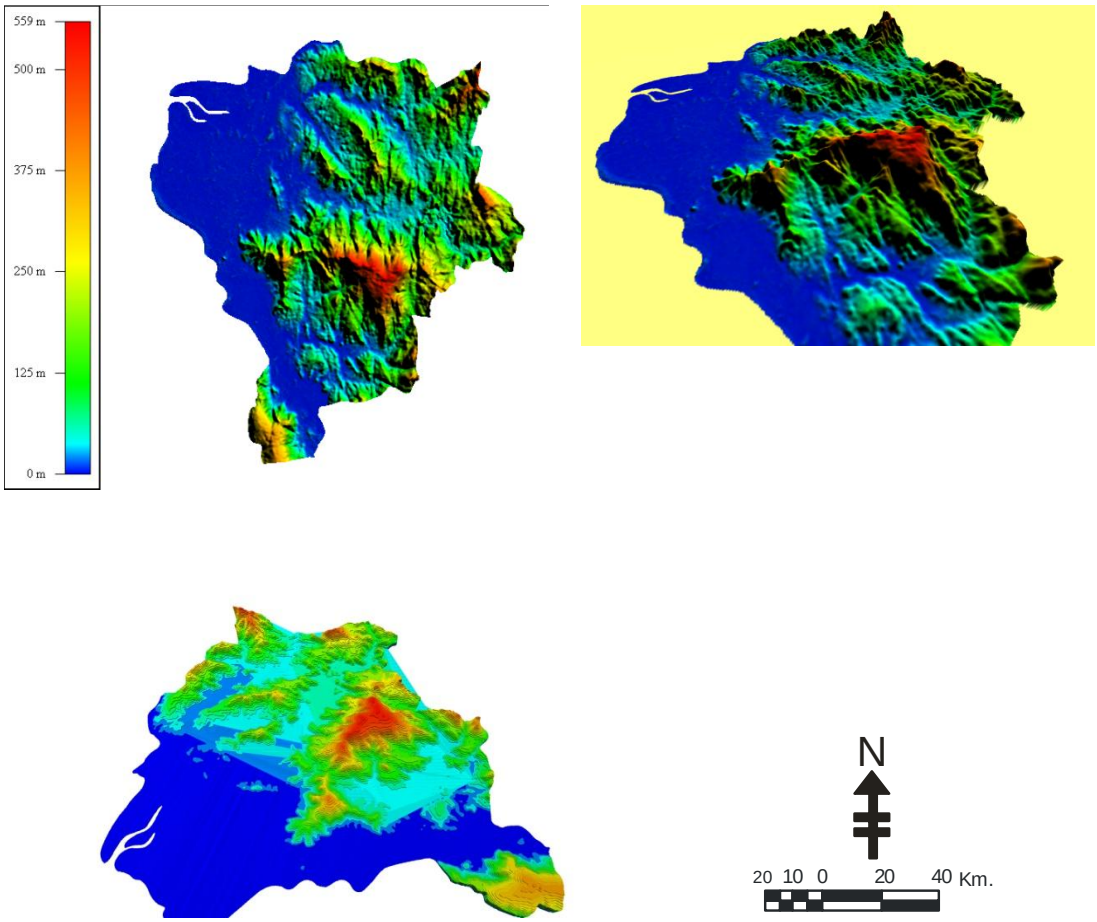
Pen is the centre of considerable traffic between the Decant and the seacoast.Trucks come down the sahyadris along the Khopoli Road bringing tobacco, molasses, paper and onions, and taking salts and rice. When we see the physiographic condition of Raigad District. In the North Raigad Pen taluka is situated at Middle part which locket and surrounded by Hilly region and this part is impact on settlement.

Hills

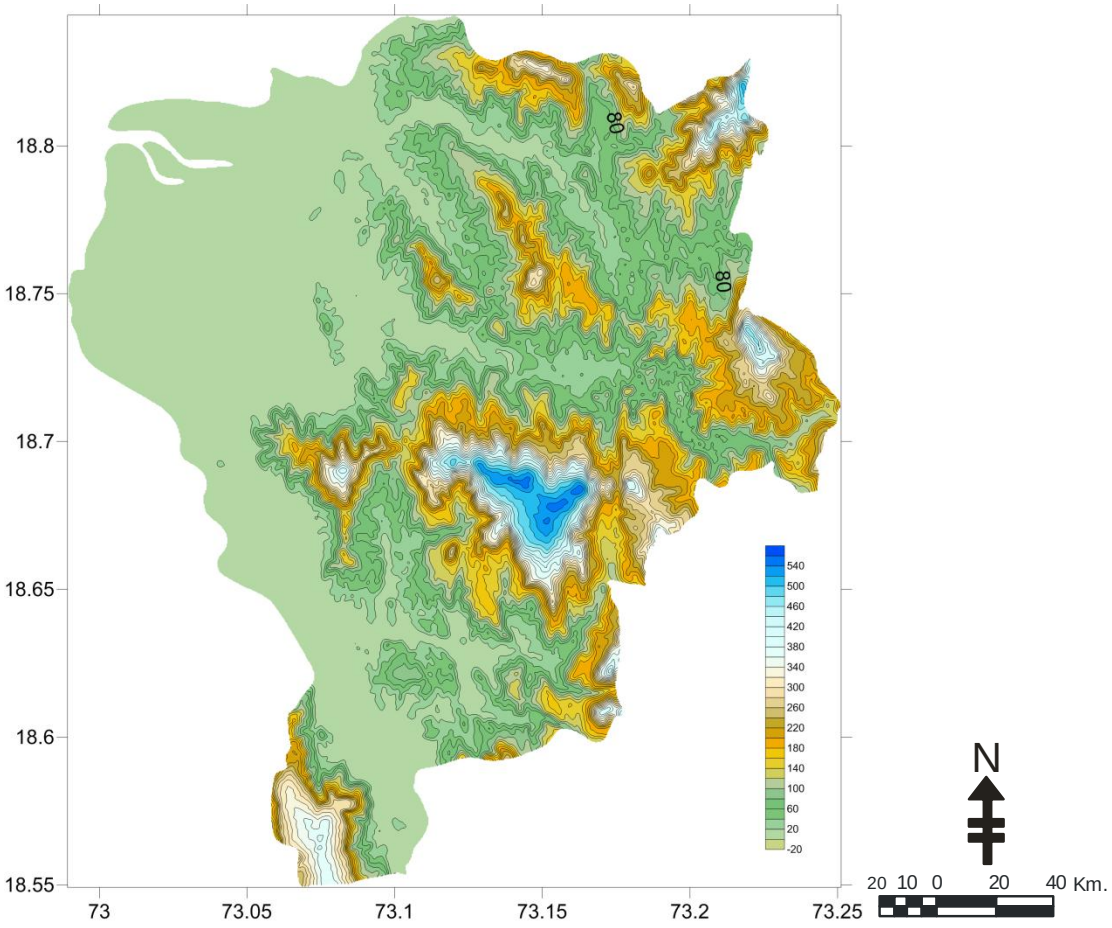
The chief hills of the district are the Sahyadris. Except a belt about two miles broad in the extreme east of Pen, Kolaba is separated from the Sahyadris first by Karjat in Thana and afterwards by a large semicircular tract of the Pant Sachiv's state of Bhor that stretches nearly half way from the Sahyadries to the Arebian Sea from Patnus about twelve miles east of Kolad,the Sahyadris from the eastern limit of the district. From this they run about twelve miles south, then about twenty miles south-east,and from that,in an irregular line,about thirty miles-west. About half way between this western belt of hills and the Sahyadris, another more broken and irregular line, centers, in the north, of the great plateau of Mira Dongar (about 1100 feet) from two to six miles south-east of Pen. From this, running south, behind Nagothna, it crosses the Sukeli range; that divides the Amba and Kundalika valleys, and, stretching east of Kolad, runs south to Mangaon dividing the valleys of the Ghod on the west from the Kal on the east.



Map no 2.3 physiographic conditions in Raigad District and pen taluka



Map no 2.4 3d Map Shows Hill Height of Pen taluka with Colour Legend



Map no 2.5 Counter Map of Pen taluka

2.2 CLIMATE

The climate of Raigad district is typical that of the west - coast of India with plentiful and regular monsoon rainfall. In hot months, the weather is oppressive. The summer season from March to May is followed by the south west monsoon season from June to September. The period from December to February is winter season.

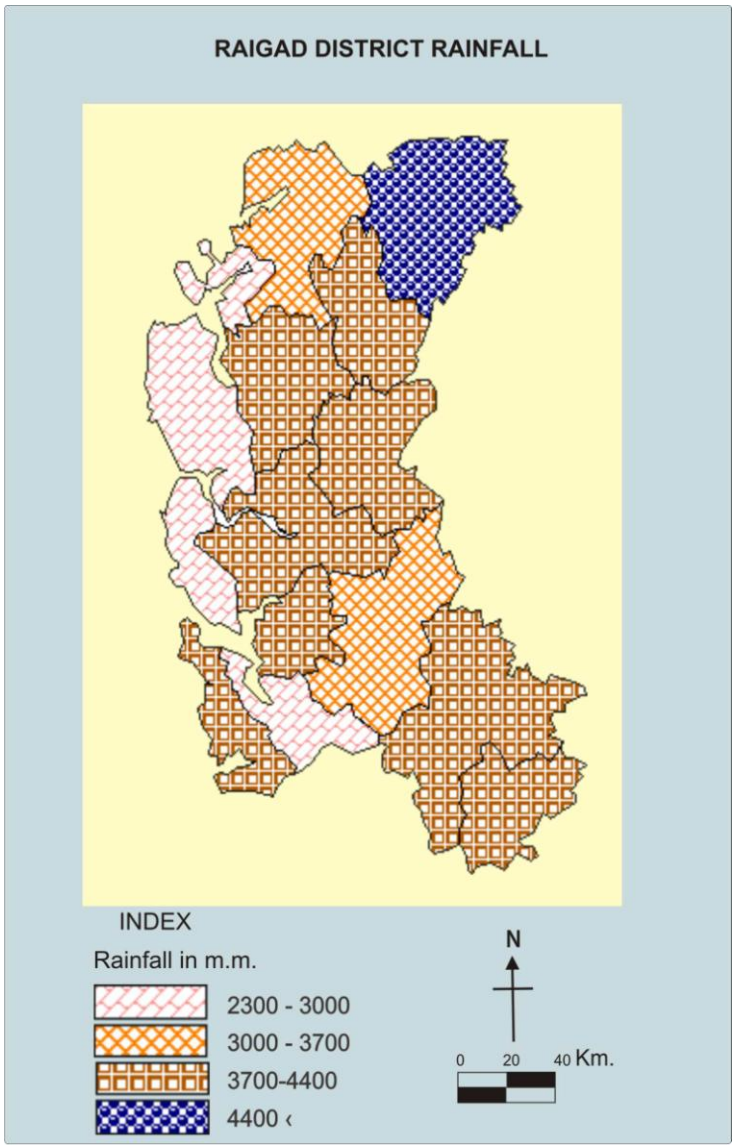
The average annual rainfall in the district is 3169.4 mm nearly 95% of which is received in four month June to September. Rice on residual moisture Matheran (4500 mm) is the highest rainfall receiving tahsill in Raigad district. With the withdrawal of the south-west monsoon day.

Temperature increase slightly even in October and November. The air is humid throughout the year during the south west monsoon season are overcast with clouds in May and October the skies are moderately clouded and during the rest of the year the skies are clear to lightly clouded.

Winds are very strong during the monsoon season and blow from west to south west from October to December the winds are generally moderate and below from directions between north-west and south-east. Between January and March the winds continue to be moderate but blow from directions between south-west and north-west. In association with cyclonic storms in the Arabian Sea in the post monsoon mouths and to a lesser extent in May, the district experience very strong winds sometimes reaching gale force and heavy widespread rain. Occasionally these storms cross the coast in the northern part of district and cause heavy damage. This climatic factor is also makes impact o n settlement.

Rainfall

Rainfall is as ecological parameter has created a variety of farming enterprises type of system is in the world. It is single whether dominance element influences the intensity and location of farming system and the farmer's choice of enterprises. It also becomes a climate hazards to farming when it is characterized with scantiness concentration, intensity variability and unavailability. It is all the most important in the minima regions were an average or normal rainfall is generally necessary for successful crop production in such an area the system of crop production be corrected more or less to the moisture factors (Klages 1958).



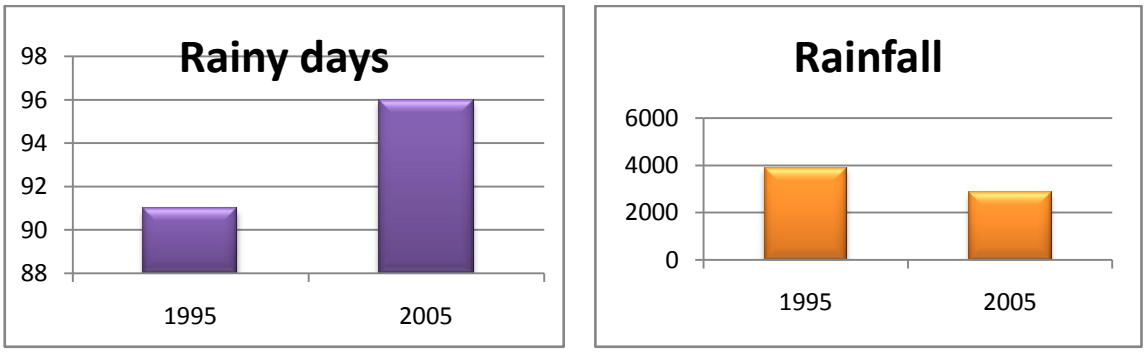
Map no 2.6 Cumulative Rainfalls for the District: Raigad.

Table no.2.1 Mean annual rainfall of Pen taluka

Year	2001	2002	2003	2004
Pen	2595.7	2529.0	1912.2	2024.0
Raigad taluka average rainfall	2808.0	2720.0	2880.0	3246.3

Pen taluka rainfall compare to Raigad district average rainfall shown in the following graph

Southwest monsoon period is most important regarding the rainfall in the study region.



Graph 2.1 Mean annual rain fall of Pen Taluka

Source: Socio-eco.Ab. Of Raigad, 2005, 1995.

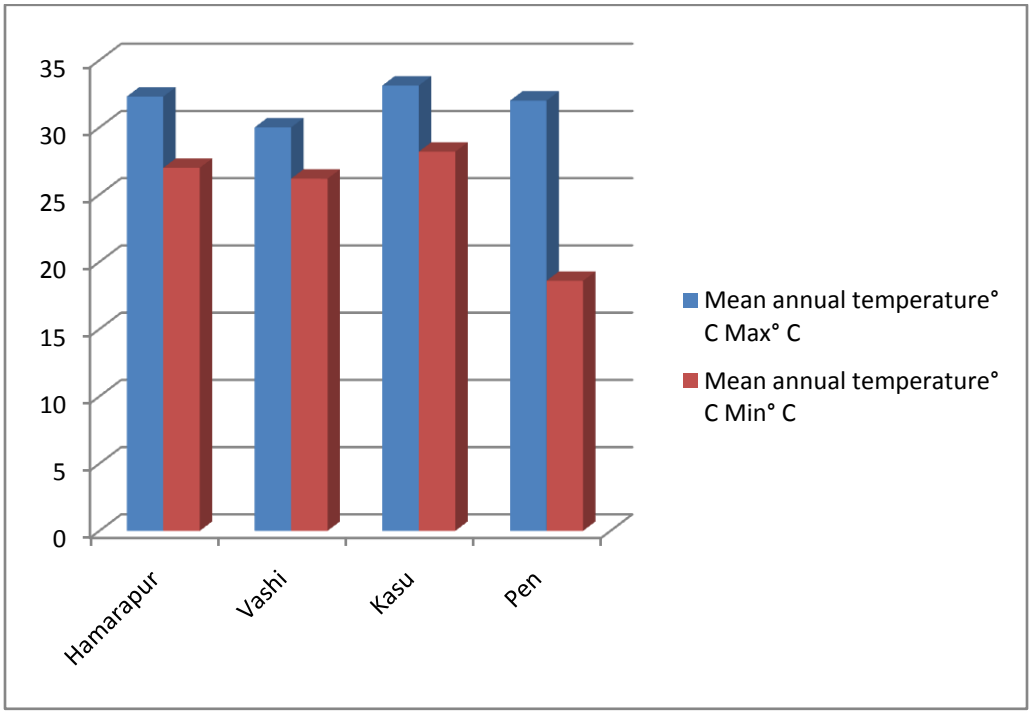
When we observe the above Graph. it is clearly shows that, in 1995-96 annual rainfall was record 3909 mm whereas 2868 mm in 2005-06. It is decreased by 1041 mm between study periods. Highest 96 rainy days were recorded in 2005-06 but a rainfall is declined because the growth of population, urbanization and agricultural developments. High temperature increased while low and low rainfall is the recorded.

2.3 TEMPERATURE:

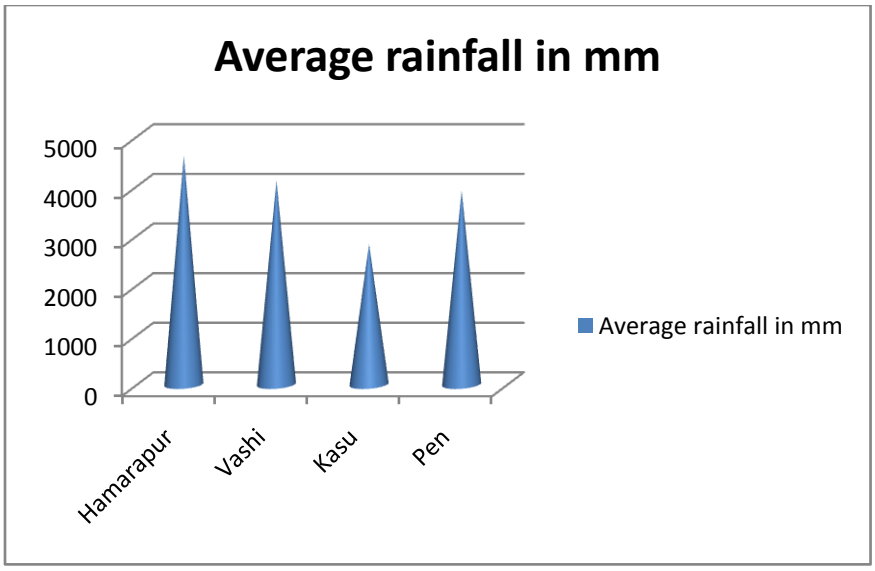
The temperature recorded at IMD observatory of Pen between 1995-96 to 2005 pp indicate that the region experiences highest temperature in the month of May and June with the average 40°C as highest and 25°C as the minimum. The extremes highest temperature had been recorded in the average maximum and minimum annual temperature range between 40^0Cto25^0 C

Table. No 2.2 Mean annual temperature of study area

Division	Temperature ° C		Average rainfall in mm
	Maximum	Minimum	
Hamarapur	32. 30°	27°	4612
Vashi	30°	26. 19°	4113
Kasu	33. 12°	28. 20°	2830
Pen	32°	18. 60°	3909



Graph no. 2.2 Mean annual temperature of study area



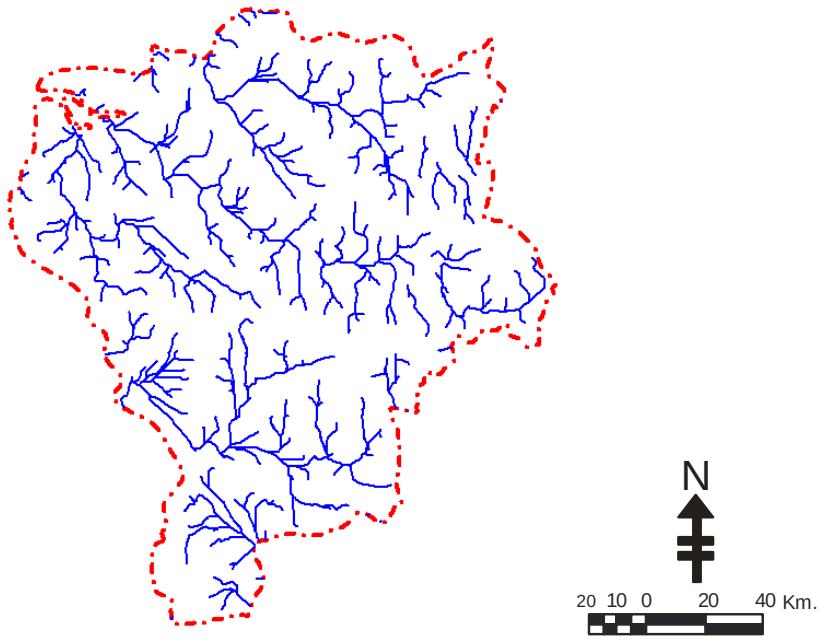
Graph no. 2.3 Average rainfall of study area

Source: Socio-eco.Ab. Of Raigad, 2005, 1995

Above table shows that, there are four administrative division i.e. Hamarapur, Vashi, Kasu and Pen. The minimum and maximum temperature and average rainfall recorded. Highest and lowest temperature is observed in Kasu division but in Pen division maximum temperature are 42° and 18. 60° observed on the other hand highest average rainfall shows 4612 mm in Hamarapur division. The distribution of annual rainfall is determined by two factors viz. Distance from the Arabian Sea and existence of hill chains and ranges of Sahyadri. Monsoon winds coming from South and South East direction strike at the Highlands and southern east part of the study area. Hence, climatic conditions affect rural settlement and its pattern.

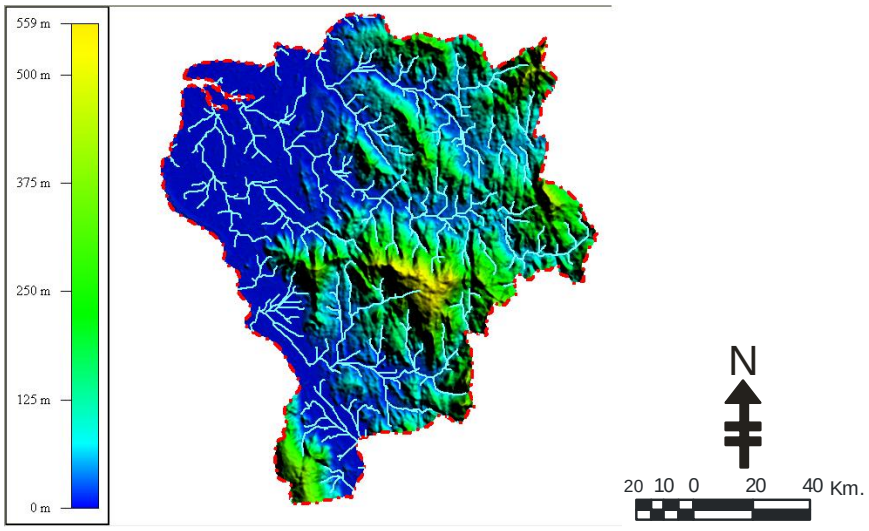
2.4 DRAINAGE

Drainage has a compare comprehensive expression in geography. It includes surface as well as underground water flow. It is the result of combination of numerous factor including climate particularly precipitation, insulation, humidity cloudiness components and force structure and type of rock etc. impact on soil, human being to natural water flow. Drainage is the most important compound of physical environment which affects agriculture directly and indirectly surface water is by far the most important means for providing sustaining irrigation which stabilized and improves agro economic life system that has otherwise lengthy of land and potential because of the uncertainty in the flow of water it is potable that the any attempt to improve the agricultural land use planning with many problem with the help of shallow deep water table is found in the entire region.



Map no 2.7 Pen taluka Drainage 01

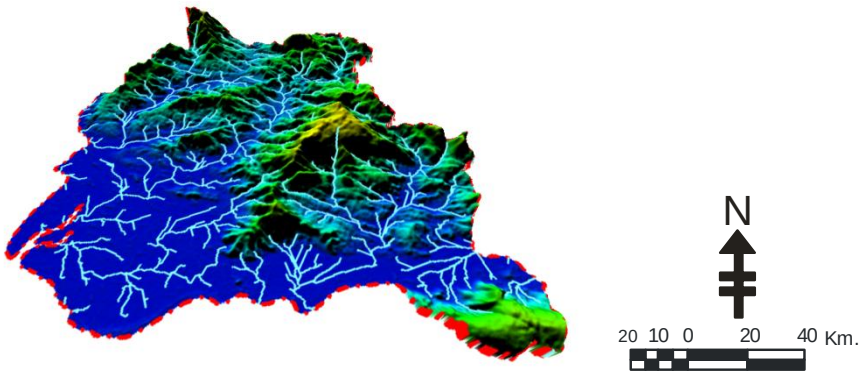
Amba is the main river in the study area. It has flows from northwest to West direction of Pen Taluka. And a number of tributaries flows entire the region. Patalganga and Bhogawati is the Sub river tributary of Amba. Patalganga is originated from Western part of Khandala. it goes to Dharamtar. In this area the government of had completed the net wane minor project in 2087 year. Number of pools is constructed on the River for transportation. Highest length of pool is constructed on Pen-Alibag road on Amba River in 1958. The length of bridge is 312.3 meters. In 1580 year Kaji Allauddin had constructed the bridge which length is 146.30 meter. It is a nearby Nagothana. Indian petrochemical plant started on northern part of Nagothana.



Map no 2.8 Pen taluka Drainage 02

In the north of Pen, between the Nagothne river in the West and the Patalganga in the east, is a low-lying salt swamp full of winding slimy tidal creeks, into which, about 5 miles from the mouth of the Patalganga, the Bhima drains alter a course of about 16 miles across the north-east of Pen. About five miles further west after a north-west course of about twenty miles through central Pen, the Bhogaeshvari, Bhogavati, or Pen River, loss itself in a network of tidal creeks. This creek is navigable to Antora within four miles of Pune at ordinary high tides to boats

of seven tons (28 Khandis) and at spring tides to beats of thirty five tons (140 Khandi). Beyond Antora only small craft can pass.



Map no 2.9 Pen taluka Drainage -3D 03

Pen has six large reservoirs, of which four at Pen, once at Vashi, and one at Vadav. The Kasar Lake at Pen, built without masonry about 1627, had an area of about six acres. There is much silt, and, at the end of May, only 2 or 3 feet of water remain. The Khavandal reservoir, built about the same time also without masonry, has an area of about three acres. At the end of May only two or three feet of water is left. The Chambhar reservoir, built about 1750, has an area of about five acres and a depth of about seven feet. The water works reservoir, formed by damming a small valley in the hills near Pen, has an area of about five acres and a greatest depth about twenty-five feet. There is no silt and it holds water throughout the year. There is an earth dam finished in 1876 with a puddle wall several feet thick in the centre, faced on the inside with stone pitching. Its water is carried about half a mile by a line of earthen and iron pipes. The Vashi reservoir, built about 1777, has an area of thirty acres and a greatest depth of twelve feet. The Vadav reservoir, built in 1862, has an area of ten acres and a greatest depth of eight feet.

On the three chief Roha reservoirs one is it Ashtami, one at Sangada, and one at Mehda. The Ashtami Lake across the creek from Roha, has an area of about eight acres and a greatest depth of twenty feet. It holds water through the year. The Sangads reservoir, about three miles west of Roha, has an area of about seven acres. It is shallow and its water is used for cattle drinking. The stone pond at Mehda, about three miles north of Roha, was built in the time of Peshwa Bajirav II (1796-1818). [Beside the many smaller ponds are scattered over the district. In 1854 there were in Angria Kolaba 160 ponds holding water from 5 to 12 months, and varying from 2240 to 112 feet in circumference. Of the whole number 143 were mere excavations without built sides, ten were in complete repair with stone mortar sites, and of seven the sides were only partly built. [Bom. Gov. Sel. New Series. (1854) VII. 38, 39]

2.5 SOIL

Soil the product of parent rocks climate rainfall, arrange, vegetation affects the soil in Raigad region coast soils as well as later tic soil is found.

The soils of the district are essentially derived from the Deccan trap which is the predominant rock formation of the district with small out crops of literate at a Few places in Poladpur tahsil and in the Matheran hills. The main types of soils found in the district are forest soils, arks soils, rice soil khar or salt soils coastal alluvium and literate soils Deccan Trap rock which is completely impervious to percolation, these causing an accuse shortage of water in summer, though, it receives rain fall varying from 2000 m, 3500m in different parts on the hill slopes the soil is reddish which is used for grass crop. The sands near the coast are suitable for plantation of coconut and bet nut.

The distribution of soil by types is

i) Coarse –Shallow soil trap original 35.2%

ii) Literate and later tic soil 39.5%

iii) Coastal alluvial and coastal saline 25.3% .The predominant soil in the

The district is having course soil, medium black soil, deep black soil and late rite & later tic soil in 0.91 lakh ha 1.43 lakh ha, 0.80 lakh and 0.25 lakh ha receptivity.

Statement showing the Fertility Level of pen taluka in Raigad District on the Soil samples analyzed during April 2005 to 2010 (Six Tier System)

Table no. 2.3 Fertility level of pen taluka(Six Tier System)

Sr.No.	Name of Taluka	No of Soil Samples Analyzed	Fertility Level		
			N	P	K
01	Pen	1,152	M	M	H

2.6 POPULATION

The rapid population growth is one of the most major factor seems responsible for the ecosystem. The nature and socio-economic development has been out stripped by unprecedented growth of population. Therefore, the level of living standard is decreasing significantly in the developing region. Hence, the population is key factor in the planning process for social economic development in a region.

Man is most active element in the process of human development capital technology and natural resources are of course important but they cannot development by themselves. It is only through the application of human knowledge, scale and in tentative can anything be made out of them. It is thus, the human resource, the people of the country on which development ultimately depends (G.B. Singh 1979) indeed, so pervasive is culture is fixing peoples precautions and manipulation of natural phenomena that are different population, through accruing the same habitat may have literally different resources (W. Firey 1960) V. C. Mishra and S. K. Sharma 1982) with this view, some demographic attributes of man which expected exert influence on human settlement and its developments have been analyzed here. Before the distribution of people is analyzed with the objective to measure the pressure of people on land resource. It is followed by the spatial analysis of population growth.

Growth of population

Population of Pen Taluka (study area) increased from 9229 in 1901 to 176681 persons in 2001 with net addition of 167452 months. Decennial growth rate of population in the study area from 1901 to 2001 as compared to population growth in the Pen Taluka is presented in following table.

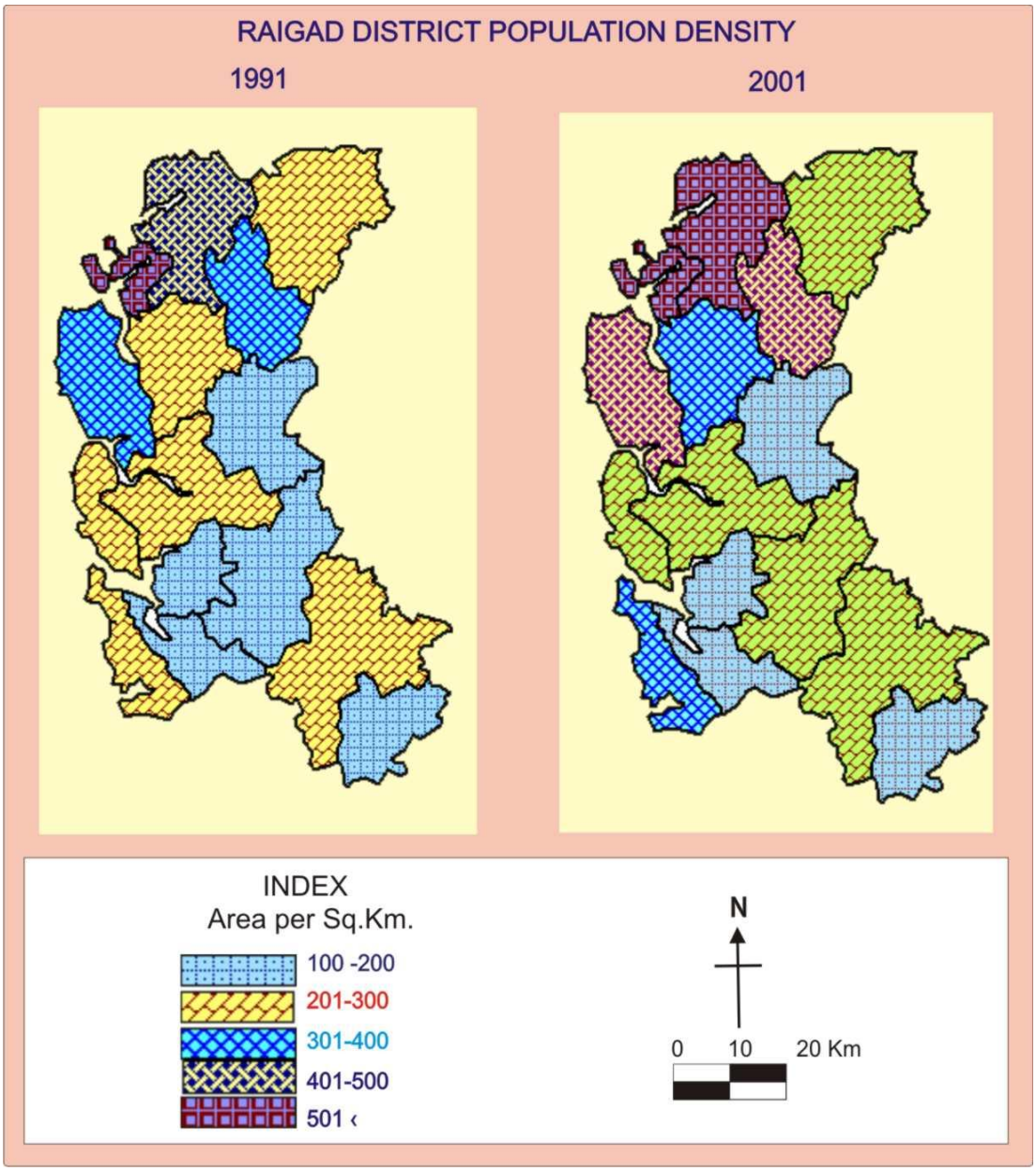
Table no. 2.4 Decadal Growth of population of pen

Year	Population	Male	Female
1991	104173	54685	49548
2001	176681	90853	83828

Graph no. 2.4 Growth of Population in pen taluka

Source: Census of India, Maharashtra, General Population Table

From 1901 to 1981 the population increased by 25.68 percent and decreased by 6.10 percent due to many natural calamities like failure of rainfall, widespread influenza, cholera and plague. But population increased in every decade after 1921 with varying rates. Highest increased occurred in 1971-81 when it registered a rise of 25.68 percent. This continuous increase was made possible by provisions of improved health and supply of sufficient food and later by various development measures.



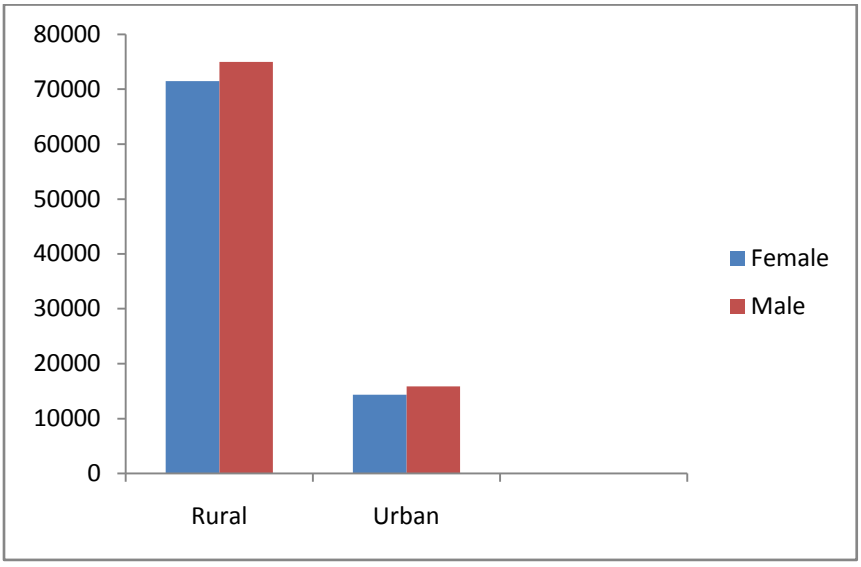
Map no 2.10 Preparation of Rural Population

Preparation of Rural Population

Rural urban ratio in any given area directly influences the nature, character pattern and function of rural settlement.

Table no. 2.5 Status of Rural Urban Population of pen

Year	2005-06		
	Female	Male	Total
Rural	71471	75009	146480
Urban	14357	15844	30201
Total	85828	90853	176681



Graph no. 2.5 Status of Rural Urban Population of Pen

Source: Census of India, Maharashtra, General Population Table

Above table shows that, female rural population is 71471 in 2005-06 whereas male population is 75009. On the other hand urban female population is 14357 and male population is 15844.

2.7 HISTORICAL BACKGROUND

In historical times Pen was under rule of the Silharas of Shri Sthanak (Thana) from 9th to the 12th century and subsequently it passed under the control of theYadavas. As Silaharas rarely acted as sovereign rulers and acknowledged the successive suzerainty of Gujarat in the North, Karnataka in the South, Pen is often referred to as belonging to their respective dominions. When Shayastekhan was sent against Shivaji, a detachment of the Mogul army had been kept at Pen but it was subsequently routed by him. In 1668 Pen is mentioned as a port which acknowledged the Moghal as its superior, though it lay in Shivajis territories Bruce's Annals, II. 242) In 1676 it is mentioned by Frayer (New Account, 51, 61, 77) Parvatibai, the wife of Sadashivrav Bhau, the hero of Panipat, came from the Kolhatkar family of Pen which incidentally had taken active part in inciting the imposter of Bhau to rise against Savai Madhavrav. In 1819 the easy communication with Bombay and with the Deccan by the Bhor pass made Pen an important centre. Its chief prosperity laid in its salts beds. There was a considerable export of rice to Bombay (Revenue diary, 142 of 1819, p. 2570) a number of carved stones about the town appeared to belong to an unusually large temple of about the 13th or 14th century.

SIZE SPACING AND HOUSES TYPES OF RURAL SETTLEMENTS

Chapter III

SIZE SPACING AND HOUSES TYPES OF RURAL SETTLEMENTS

3.1 INTRODUCTION

In settlements the most basis sitting factors can be seen clearly at work. This is because permanent villages, like the semi-permanent settlements of shifting cultivators or nomads, or the temporary camps of hunters and gatherers, from which they evolved, have the same basic requirements of food, water, shelter and protection. As Man has developed more and more sophisticated techniques of obtaining a living, he has been able to depend more and more on a single place to provide his livelihood, but the basic requirement must be present. If these needs are provided, other factors such as planning can come into play and affect the sitting of settlements.

The term of the days as the basic administrative settlement means usually are centered and in many cases scattered aggregate of residence and inhabitants of which have a certain relations and even some kind of union. (Baden Powell, 1892)

Several factors such as physical, economical, social and political affect the distribution of patterns of settlements. Few factors are more responsible climate, mineral resource have often give rise to several settlements. However, the settlement distribution is not only determined by the natural conditions. (Kumbhar 1997).

An attempt has been made to find out the influence of several factors on the distribution of rural settlements in Pen Taluka. The study also includes the analysis of spatial distribution of rural settlements with the help of quantitative measure called the nearest neighbor's analysis.

Spacing of rural settlements

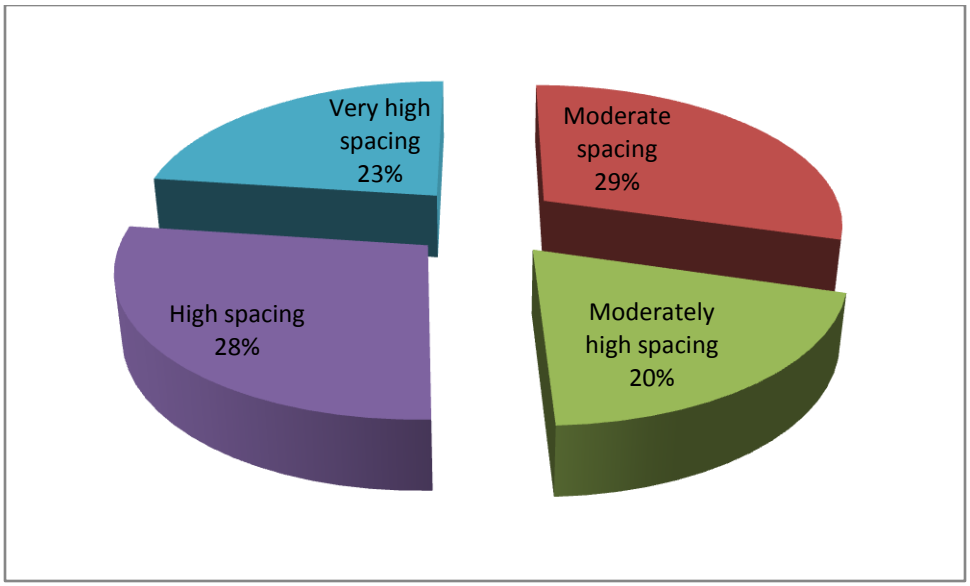
The idea of pacing must occupy the settlers in a particular area. The needed to space or pack settlements properly either related to the principle of making optimum use of space

available. This optimum use of space is also connected with the principle of least efforts. Viz., the best spacing of settlement in an area implies that the inhabitant using them wait on the whole spend least , amount required in doing so. The significance of spacing in terms of linear distance is related in all geographical studies. Watson is perfectly right in assuming and identifying Geography as the discipline in distance obviously spacing is not a phenomenon known as existing today but it indicates dynamic process responsible for presents spacing of settlement. Various physio-cultural and historical factors in insulation or combined create a rural landscape. The way include the soil, topography, drainage conditions land tenure system, mode of leading defense conditions and the type of setting group with a particular level of technology. It also reflects the process and manner of organization of space in particular region. The compilation of density function as shown in figure for 166 villages in Pen Tahsil reveals the following silent feature of the gross pattern of spacing.

Table no. 3.1 Silent feature of spacing in Pen Tahsil

Sr. No.	Position	Distance (km.)	Inhabits village	% to total
1	Moderate spacing	72	49	29.51
2	Moderately high spacing	2.00-2.5	33	19.87
3	High spacing	2.5-3.00	46	27.71
4	Very high spacing	Above 3.00	38	22.89
	Total		166	100

Source: Compiled by author.



Graph no. 3.1 Silent feature of spacing in Pen Tahsil

3.2 SIZE AND DENSITY OF RURAL SETTLEMENT

The site speaks about the nature of soil, topography, socio-economic background of the culture group of particular area. Here the picture of villages categorized according to population provides general view of the region of pen Taluka. The census categories are i.e. small village having population below 500 ii) Medium village (500-999) iii) Larger village (1000-1999) iv) big village (2000-4999) v) Very big village (5000 and above) with a few exceptions all the study area shows tendency towards growth in size, especially of medium and large categories. A comparative to percentage distribution of villages and population in each size group as shown in figure.

All these rural settlement show variations as regards village density settled village occupy entire study area.

3.3 TYPES OF SETTLEMENTS

Number of geographers has been studied regarding type of settlements in India. H. N. Nite has also discussed the problem of research connected with such pattern. As far as the author knows research arm filled pattern and the beer evolution in India has not again a much interest among geographers. When a new settlement is going to be founded by state authority as it is the role for recent colonization, first of all a plan is drawn a blueprint which contains not only the layout of the settlement with the farmsteads arranged in a line or isolated. The plans also shows the arrangement and distribution of the properly plots in the field, it may have the shape of an elongated strip or maybe square. The evolution and the change of the settlement unit will generally affect on human being.

Human response to environment finds expression in settlement. A settlement is the group of human dwellings. In some places like India the term of settlement may imply a unit area identifiable for revenue collection. Settlement may be classified in several ways. The most common division into towns and villages, the basic difference between them being that the chief occupation of the people in town is trade or industries while most of the people in the village's deals in agricultural work.

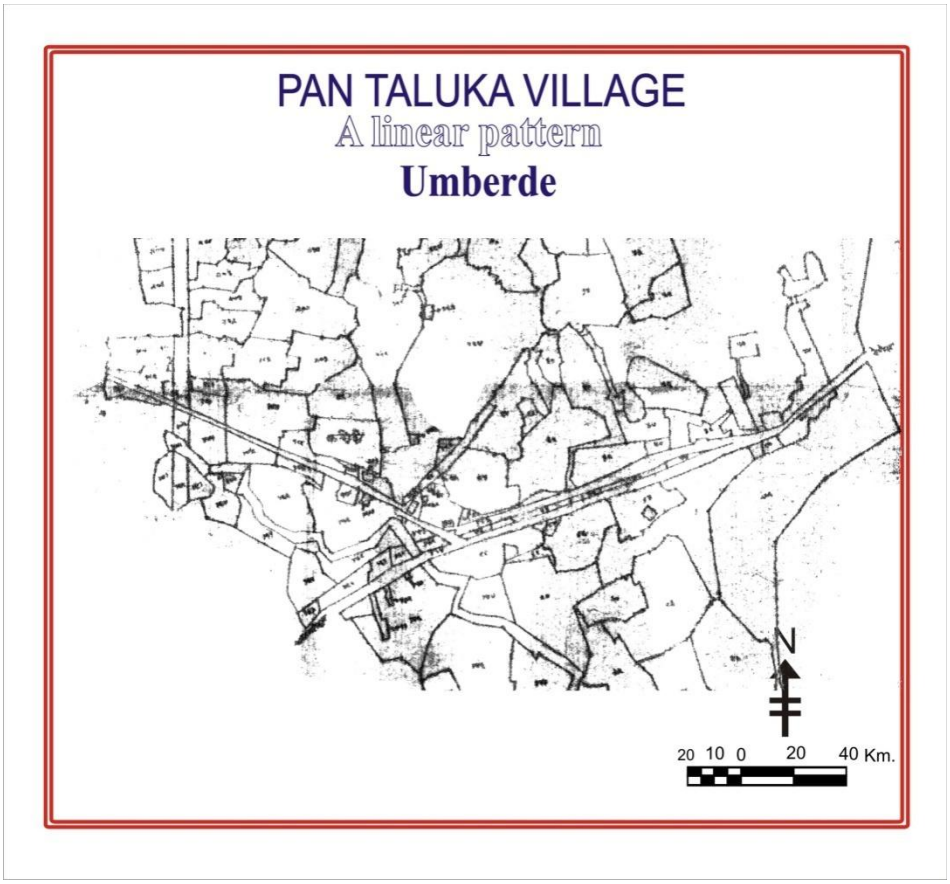
Settlement can also be classified by the design or special structure in some areas larger numbers of farms or homes may be spread over an area to produce a dispread pattern of while at another place people prefer it to you close to one another in compact or nucleated settlement. But in pen Taluka rural settlement are generally based on fishing lumbering and some are based on agriculture. But they are a range of activities is limited and there commercial and industrial

development is not advanced. There may be three size dispersed isolated farms and farmhouses hamlets comprising a few building and villages with several houses.

There are three main types of rural settlements pattern in Pen Taluka.

1) *Linear pattern*

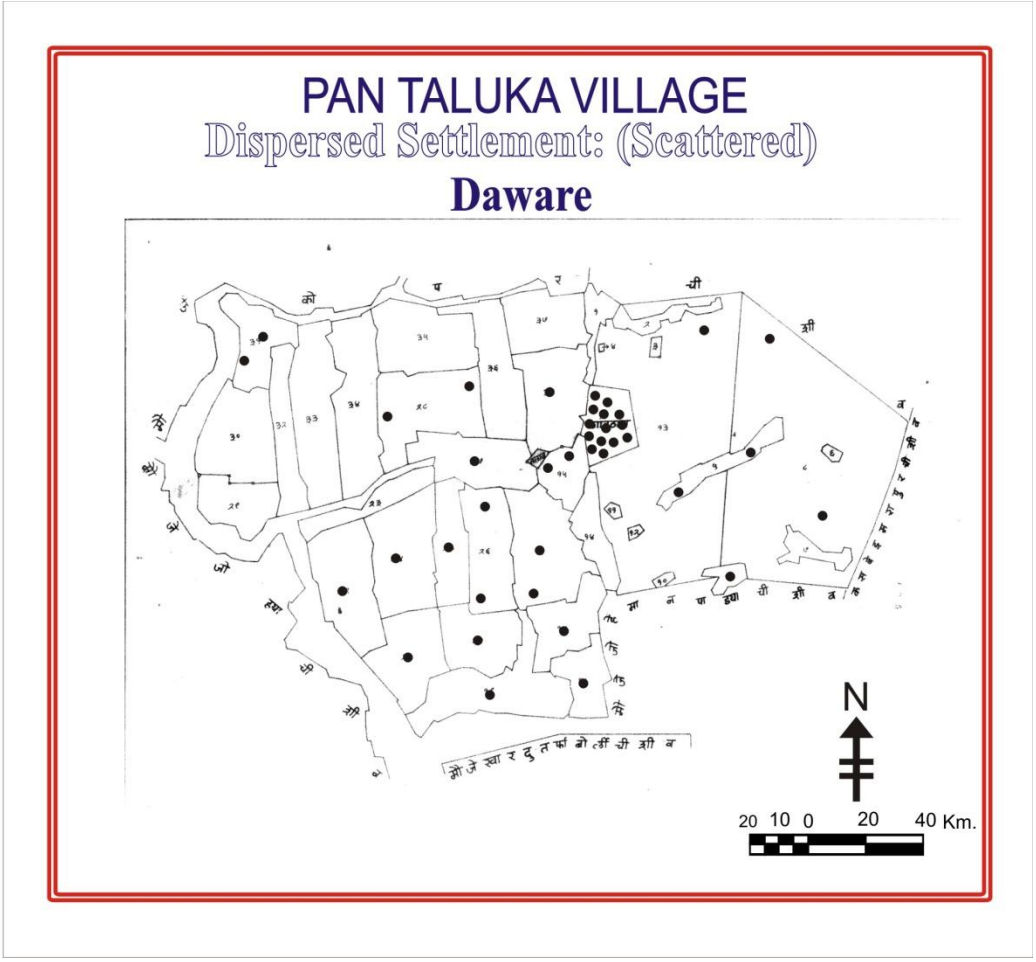
It is common along main roads or along streams. It may a single row of houses arranged along the main artery. It may develop in course of time, into some other type if conditions are favorable. 31 villages come under linear type of settlement.



Map no 3.1 Linear pattern of settlement in Umberde village

2) *Dispersed settlement: (scattered)*

It is also known as isolated settlements, such pattern of our characterized by settlement unit of small size which may consists of a single hamlet (two or seven huts). Hamlets are scattered over a vast area and the settlement follow no specific plan. Such settlement pattern is generally distributed over undulating or hilly and forested area. Those settlement which are situated on hillocks and knells overlooking the field along the slope are generally associated with tribal communities is in western and Northern part of study area.



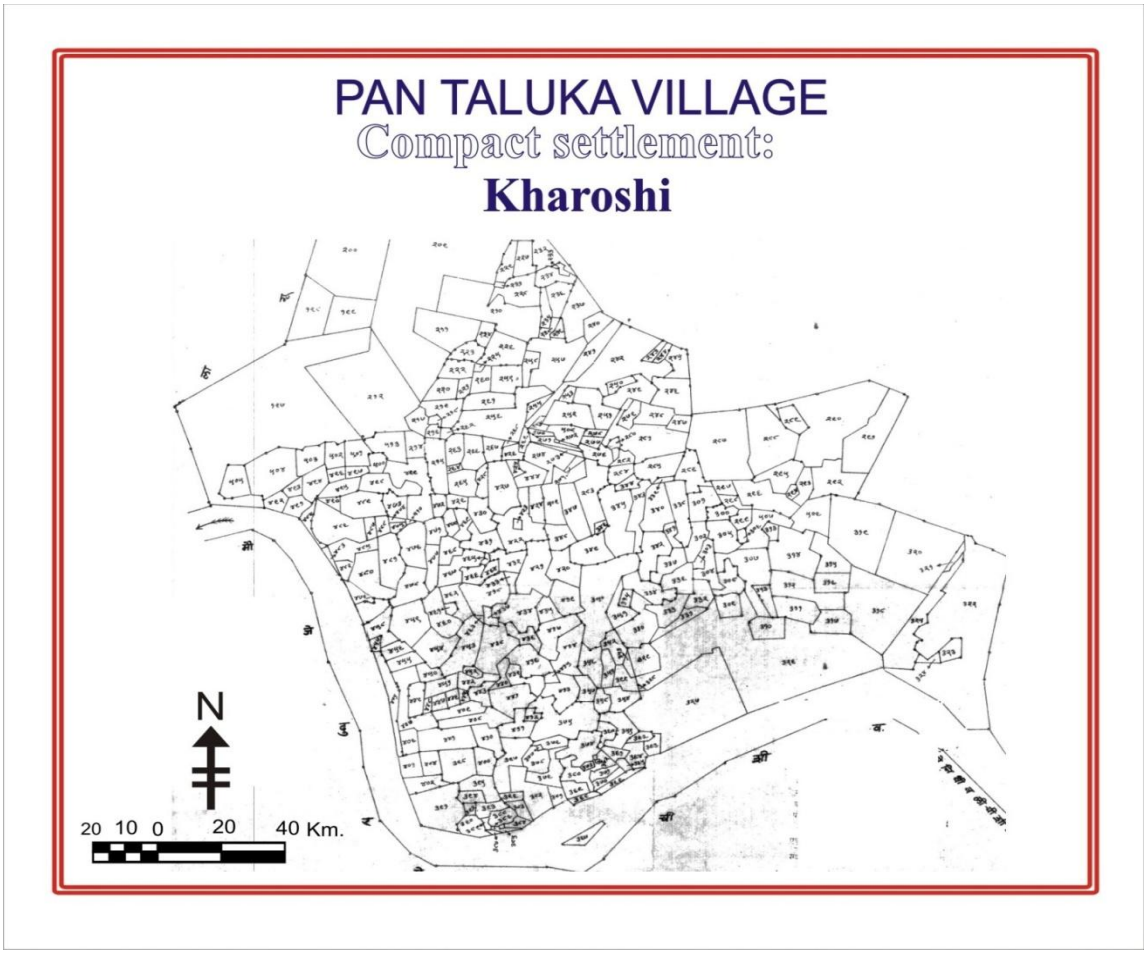
Map no 3.2 Scattered Pattern of Settlement In Daware

This type of settlements is observed in 44 villages in pen Taluka.

3) Compact settlement

Generally speaking a settlement ‘consist of two visible elements 1) the man who is the dynamic one and is wholly responsible for the construction of the second 2) the static forms obviously size, shape, form, layout, types and patterns all are elements of a settlement’

The fertile soil extending through homogeneous and sometimes undulating plans attracted people since early historical times to live in groups and follow primitive type of agriculture. The existing form reflects now aggregation of such agricultural cultivators and other dependents living reciprocally under jajmani system and enjoying the benefits of community life.



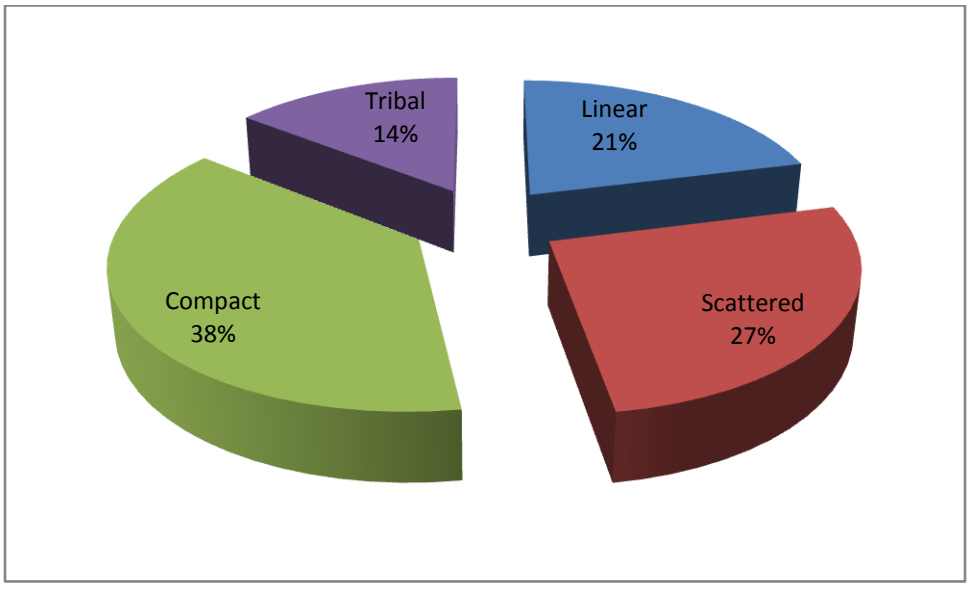
Map no 3.3 Compact Type of Settlements

Total 63 villages are observed compact type of settlements.Compact type of settlements is found in 63 villages in study area.

Table no. 3.2 Pattern of rural settlement

Sr. No.	Type of settlement	Total village covered	Percentage to total
1	Linear	35	21.08
2	Scattered	44	26.50
3	Compact	63	37.98
4	Tribal	24	14.45
	Total	166	100.00

Source: Computed by author.



Graph no. 3.2 Pattern of rural settlement

After the study of rural settlement types 37.98 percent of settlement is observed compact type, whereas 21.08 percent are linear type. It is clearly shows that 26.50% settlements are dispersed and 21.08.

3.4 FACTORS DETERMINING THE TYPE OF RURAL SETTLEMENTS:

The following factors determine the type of rural settlements

1) Physical factors

Physical factors include a relief, altitude soil capacity, climate, drainage, groundwater level etc. And influence the type and the spacing of dwelling for instance in dry regions like Rajasthan water is the crucial factor and houses are situated along a pond or well with guides the compactness of the settlement.

2) Cultural and ethnic factors

These factors include aspect basic on tribe, caste, community and religion. It is commonly seen that the main land owning caste resides in the centre and the lower service providing caste on the periphery. This leads to social segregation end fragmentation of a compact settlement into several units.

3) The role of housing in economic development

Because of population growth and migration, older cities will need many new dwellings, but these, like others, will have to be transformed, expanded and modified over the years to play their part in the development process. Housing transformation must not only be expected and tolerated but should even be fostered as a good way to raise an important type of production, to generate employment, and to improve equity in distribution. For example, employment naturally accompanied small-scale improvements of dwellings; labor intensive, conventional building methods are still more efficient than capital intensive prefabrication in almost all setting.

with the respect to equity, mostly young families in developing countries cannot obtain and any type of newly built two-room dwelling we a kitchen and bathroom if they pay only one fifth of their income for 15 years at an unsubsidized real interest rate of around 12%. Subsidies that bring such housing within reach of the poor are inequitable because they can be given to only a small minority unless investment in all other sectors is wholly neglected. The poor should have access to their share of finance plus a widely dispersed, hence modest, subsidy. With that they can easily acquire a utility services site, and incomplete but expandable core house, or an existing sub standard dwelling that can be upgraded.

The case for an urban strategy that stresses that lending is strong. In recent years this strategy has been recommended by several national housing agencies and by international lenders, such as the World Bank.

Casual observation and studies of specific projects and neighborhoods have shown that many of the poor are already upgrading their dwellings, despite obstacles and institutional constraints. Instruction known technical details might be useful, but massive campaigns search as those for better nutrition or family planning will not be needed. What has been lacking instead is knowledge by urban authorities of how upgrading transforms the use of the entire housing stock by a growing population with changing incomes. Without such knowledge, policies dealing with finance, land and infrastructure will generate and right and inadequate and misdirected volume of construction.

The upgrading or the transformation of housing must be understood in terms of the changing housing market as a whole. The demand for new dwellings or for improvements depends on population growth, household formation, migration, personal income growth, income

distribution access to land and finance the availability of competing goods and services, the characteristics of the old housing stock. And various regulations. Analysis of supply is even more compels because of the diversity of actors that are involved. Workers, builders, utility providers, materials suppliers, financiers and often designers, landlords and others. Some perform multiple functions. It would be misleading, however, to assume that all the financial and entrepreneurial institutions of advanced countries exist in cities in developing countries. When the focus is on housing by hand for the poor, complex theories based on relevant settings are not helpful.

Poor households will save and work to transform dwellings progressively in a variety of ways. They can use current income, the liquidate past savings, borrow from relatives, or take out materials or general construction loans.

Obviously, immediate resale of service sites or core houses, perhaps drawn by poorer families through a lottery, would be an awkward way of giving the poor income instead of better housing. Some say that income is indeed what poor families that, so why not let them allocate it in terms of their own priorities? Urban planners and development economists, however, have a longer perspective than specific poor individuals and are concerned with the functioning of the city and the economy for decades ahead. Policies should not only migrate power lifting within the next few years but also prevent eventual urban breakdowns and raise the productivity of the poor. The best way to raise the productivity each to give them work experience in a sector with an expanding market. Resale should be discouraged for a year and be limited to substantially improved dwellings.

3.5 TYPE OF HOUSES

Variations occur in dwelling according to the building materials are available and using which are mostly determined by natural environment. Similarly, geared vie determines the size, form and function and both the factors combined give a regional characteristics to the dwelling. House type is classified on the following basis.

1. Building material applied
2. size and shape
3. socio-cultural economic status

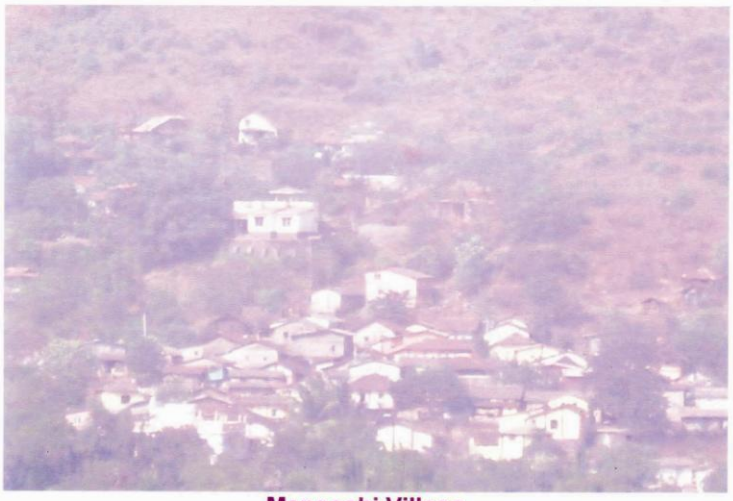
Walls, mud, stone, brick, timber and water etc are used for the construction of building in the study area.

On the other hand the rural house types may be divided into three groups. 1) Rich family houses 2) Average family houses and 3) Poor family houses. According to socio-economic condition the rich family group house is far characterized by some Pacca houses and a few mud walled with tiled roofs having more than five rooms with the neat and clean locality. Although the kitchen is separate but the house is divided of only latrine or bathroom. The houses are well neat and clean.

PHOTO GRAPHS

Girane Village

Kharphada Village



Mangoshi Village

Dhondpada Village

Jawali : Indira Awas Yojana

Karli Village

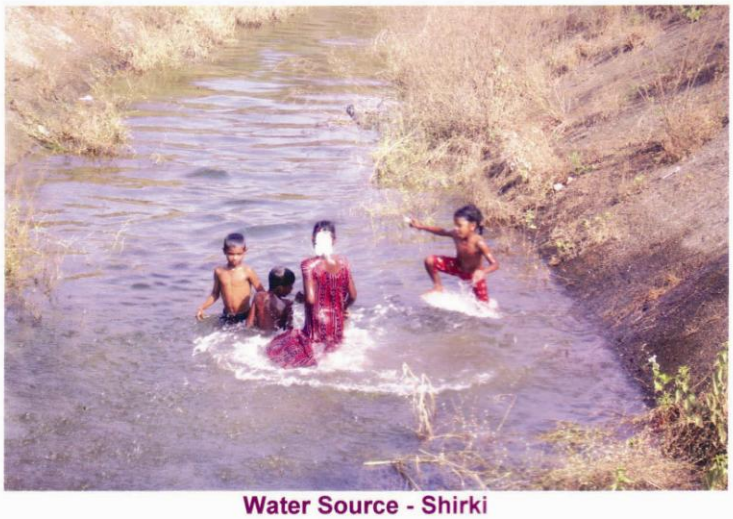
Sonkhar Village

Hetavane Village

Tribal Sattlement

Ambeghar – Business of Building Material

Patalganga River - Dadar



Water Source - Shirki

Middle-class people (average family) comprising the peasants, carpenters potters, business class and a few of higher castes occupy such dwellings. The houses having five or more than five rooms belonged to rich persons. This form only 1.6% of the total dwelling occupied by 2.4% persons with an average household of 7.3. Number of occupants per dwelling has greater pressure in tribal areas, where more than 75% live in one room dwellings.

The average family house a far characterized by mud walled and tiled roofs with a small courtyard inside the house. A separate kitchen is provided only in a few cases the other hand poor family houses are characterized with 2-3 rooms with mud walls and partly tiled roofs and having no courtyard.

Hence, the villages used at the local material for the houses. Soil and natural visitations are the chief building material for Construction. Some people used the bricks instead of mud. Thus, it is clear that houses in the villages of Pen Tahsil are covered by both physical and cultural factors. Building material is derived from the soil and natural vegetation but the shape, size, architecture and degree of improvement in the housing condition are determined by the socio-economic conditions of the people.

3.6 SPATIO-TEMPORAL ANALYSIS OF TRIBAL POPULATION SETTLEMENTS

The growth of tribal settlement can be attributed to a rear of the settlement and its population since the data regarding area of who filed by the settlement is not available. The second variable population has been considered here for measuring the growth of tribal settlement. The areal extent and population of the village are interested as the pressure of population increases the inhabitant try to seek new site, out side’s main settlement for leaving the role of growth population.

The growth of tribal community is found 186802 in 2005-06. Whereas 15255 people living in hilly area Katkari, Thakar and Mahadev Koli these community are under tribal casts. The government of Maharashtra taken the action or programme for the development of tribal community.

Table no. 3.3 According to population of tribal total number of villages

Sr. No.	Area	Below 200	200-499	500-599	1000-1999	2000-1999	5000-9999	Above 10,000	Total Villages
1	Pen	4	8	6	6	0	0	0	24
2	Dist.	11	34	49	36	5	0	0	135

Source: Compiled by author.

Above table reveals that the group of tribal population scattered located in various villages. Out of 24 villages only for the village having below 200 population whereas eight villages having 200-499 tribal population.

3.7 PHYSIOGRAPHIC AND DISTRIBUTION OF SETTLEMENTS

The relay feature of the study region may be drawn on a map prepared with the help of one inch toposheets. Therefore, the study region is broadly divided into four categories according to the height from sea level. The main physiographic division is as follows.

1) The River basin region

Amba and Bhogawati River forms the main drainage system in the Pen Taluka.

In the south-western part of the Taluka is formed at the Narrow river basin in the region extended south-west part of the region, here height is about 600 to 700 m, it means sea level

occupies nearly 9.63 percent of the total area and comprises nearly 28.2% of the rural settlements of the total. This region has got fertile soil litigation facilities but lack of developed technology and modern agricultural techniques. Here, size of settlements is found medium the percentage of area occupied by the river course and a number of rural settlements situated in the region show nearly positive correlation the table III –I and figure number 3.1 gives clear idea of the physiographic divisions and distribution of rural settlements.

2. The Low Land Region 700-900 f.

The Lowland region found along the north-eastern and middle part of the Taluka. The Lowland region covers an area is about 13.84 percent of the total and accounts for 19.1 percent of the total rural settlements of the region. Smaller size of settlements is found in this area.

3. The Foot Hill Region: 900-1100 m.

This region which lies between 900 to 1100 feet altitude from sea level is considered as the foot hill region. North Western boundary of the region lies between 900 to 1100 feet. It covers 34.50 percent of the total and accounts for 40.9 percent of the total rural settlements.

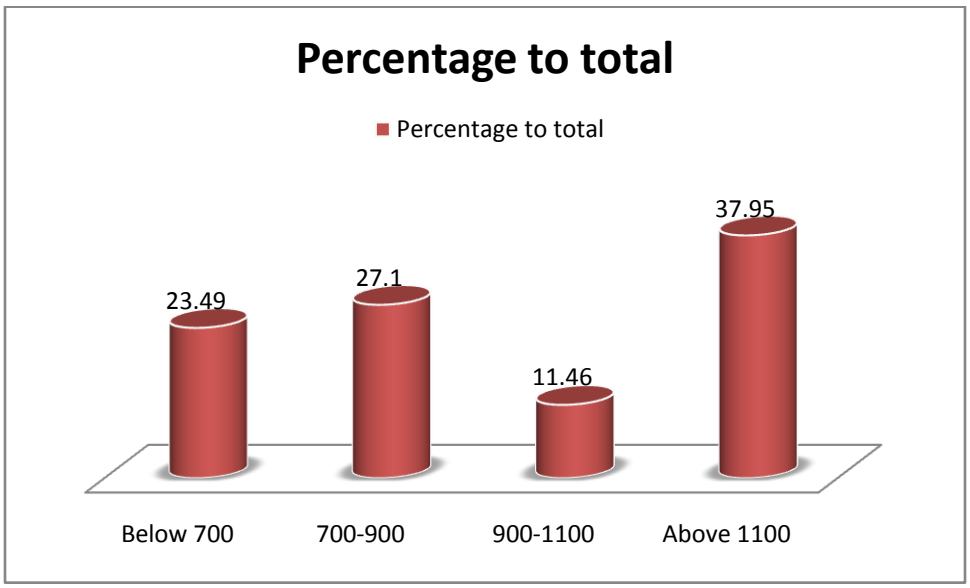
4. The Mountain Spurs: Above 1100 m.

The north-western side of the study region where Mountain Spurs occurred their height is above from the sea level these mountain ranges covers an area about 41.93 percent of the total which comprises mainly 11.8 percent of rural settlements. The rugged topography steep, slope, high rainfall and less land under cultivation affects on the distribution of rural settlements.

Table no. 3.4 Pen Taluka: Physiographic Regions

Sr. No.	Height in feet	Area in sq.m	Percentage of total	Number of settlements	Percentage to total
1	Below 700	48	9.63	39	23.49
2	700-900	69	13.84	45	27.10
3	900-1100	172	34.50	19	11.46
4	Above 1100	209	41.93	63	37.95
	Total	498.50	100.00	166	100.00

Source: GSDA, Raigad



Graph no. 3.3 Pen Taluka: Physiographic Regions

Above table clearly shows that, 63 villages are located above 1100 feet at main sea level whereas 19 villages in 900-1100 height. On the other hand 39 scattered villages are situated below 700 feet.

3.8 DRAINAGE DENSITY AND DISTRIBUTION OF RURAL SETTLEMENTS

Rivers have always attracted if human beings to settle on the banks. In any park, more number of rural settlements is found in the area where the drainage density is high (Kumbhar 1997). The study region has divided in three categories of drainage density.

It is observed that nearly 33% area of the study region has then average less than 0.5 kms. Drainage density and it comprises nearly 16.4 percent total rural settlements.

The second category of the drainage density is 0.5 to 1 km per sq.m. Which has occupied 53.1 percent area of the study region and comprises nearly 69.1 percent of the total rural settlements? The eastern part, Northwestern part and middle part of the study area having density is about 0.5 to 1 km per sq.km. Which has occupied 55.1% area of the study region and comprises nearly 69.1 percent of the total rural settlements?

The Middle Eastern steep of the study region, where the drainage density is found above 1 km per square kilometer and it occupies an area nearly 13.9 percent of the total and comprises nearly 14.5 percent of the total rural settlement.

3.9 LAND UNDER FOREST

Forests are a most important resource than any other resources. In the study region nearly 9.7% of the total land is covered by forest. The study region is divided into four categories

according to percentage of land under Forest and then isopleths map has been prepared and analyzed with the help of rural settlement.

The middle part of the study area, eastern boundary region and north corner of the region, where the land under Forest is found below 10% and it covers an area is about 59.7% of the total and accounts for 74.5% of the total rural settlements. This region has rugged topography, hills and Mountain Spurs are deforested.

The Northern and southern patches of the study region, where land order of forest is found below 10 to 20% and it covers an area is about 18.5% of the total and accounts for 12.7% of the rural settlements. In this region some trees are found.

The Northern patches and some Southern part of the study region, near the river basin, where the land under Forest is found in between 20 to 30% and it covers an area is about 14.9 percent of the total and it accounts for 9.2% of the total rural settlements.

The western boundary and Southern type of the study region where monsoonal tie and it accounts for 3.6% of the total rural settlement.

Most of the study area is covered with small bushes and grass. In the agricultural and some monsoonal trees are found i.e. Banayan, Jamun, Mango, Babul, Pimple, Lemon etc.

The table number 3.5 gives clear idea the land under Forest and its distribution of rural settlement in the Pen Taluka

3.5 Land under Forest of Pen

Area	Land under Forest	Area in Hector	Percentage of total area of forest
Pen	14059	507560	2.76
Raigad	148694	687000	21.64

3.10 DENSITY OF RURAL POPULATION DISTRIBUTION

Physical, social, economical and cultural factors of density of population generally it is observed that in hilly area's population density is low river course region and where transportation the study region is broadly divided into four categories of population density and the help of sizeable grids (4X4 kms) The isopleths map has been prepared than the area between different categories have been calculated.

The table 3.5 indicates the density of rural population and distribution of rural settlements.

3.5 Density of Rural population

	Density of population in sq.km.	Area in Hector	Percentage to total
Pen	250	35208.50	5.12
Raigad	309	487.000	------

In the study region that density of rural population below 200 persons per sq.km is observed in Northern and eastern part of the Taluka which covers an area is about 46.9% of the total and comprises nearly 47.3% of the total rural settlement. So here density of population is

low. There are more number of small size settlements are found. The rural population density between 200-400 persons per sq.km. Is observed in the North patches of study area and near the western boundary of study area which passes away middle to south covers an area is about 36.4% of the total and accounts for 30% of the total rural settlement.

The north eastern patch of the study region and Middle Western part of the region, where density of rural population between 400-600 persons which covers an area is about 9.8% of the total rural settlement. Here density of rural population is high because more land is under cultivation, irrigation and transportation facilities available.

In the core part of the Taluka that density of population is above 600 persons per sq.km. This region covers an area is about 6.9% of the total and in 11.8% total rural settlements. In this region, size of settlement is large agriculture transportation and marked in this region density of rural population is high.

In short, hilly regions having low population density and where the development of agriculture, transportation facilities and marketing facilities are available there is population density is high.

3.11 LAND UNDER AGRICULTURE AND DISTRIBUTION OF RURAL SETTLEMENT

The study region boundary by hills and Mountain Spurs the land under cultivation is found more in the western part of the study region. The region is divided into sizeable grids of 4X4 kms and the percentage of land under agriculture has been calculated.

The table number 3.6 indicates the percentage of area under agriculture and distribution of rural settlement

3.6 Land under agriculture

	Land under agriculture	Area in square kilometers	Percentage to total agricultural area	Number of settlements	Percentage to total
Pen	17842	35208.59	7.69	166	8.69
Raigad	232006	687000	------	1919	------

It is observed from the table that in the eastern part of Taluka except South East and North East patch which covers an area is about 70.6 percent of the total and accounts for 68.2% of rural settlements of the total; here land under cultivation is below 20%.

North corner of the region Southern part of the region and middle narrow strip of the region, where land under agriculture is between 20 to 40% and it covers an area is about 13.9 percent of the total and accounts for 14.5 percent of the total rural settlement.

Western boundary of the study region near the course of the density of agriculture is found between 40 to 60% per sq.km. And it covers an area is about 8.7% and comprises nearly 9.1% of the total rural settlements.

The western part of the region some patches having land under agriculture is above 60 percent and also near the river course region where land under agriculture is high in percentage i.e. covers an area is about 6.8% of the total and comprises nearly 8.2% of the total rural settlements.

In short, it is observed that where the irrigation facilities are developed fertility of soil has occurred of the land and agriculture is more.

3.12 LAND UNDER IRRIGATION

It is a well-known fact that water is an essential element for maintaining life of the surface of the Earth. It is equally needed for a man, animals, and plants. Underground water under drawn wells and tube well's to be utilized for irrigation. The rivers and other water bodies are made available through plans for irrigation.

The irrigation facilities in the area in consent of the distribution of Hatevane Dam and the Bhogavati River course in the study region.

For analyzing land under irrigation and distribution of rural settlements the study region divided into sizeable grades 4X4 kms and the percentage of land under irrigation has been calculated. The percentage of land under irrigation is group into four categories related to the distribution of rural settlement.

3.8 Land under irrigation in Pen Taluka

	Land under irrigation	Area in square km.	Percentage to total irrigation land
Pen	17842	498.50	1.41
Raigad	231857	7148	6.97

Exception of Northern corner of study region total Northern part of the study area where the percentage of land under irrigation is found below 5%, it occupies an area is about 51.2% of the total rural settlements.

In the second category, where the percentage of land under irrigation is 5 to 10% covers an area is about 8.7% and accounts for 9.1% of the total rural settlements. The region lies middle part of the Taluka and Northern narrow strip and Southern toe of the Taluka.

The North corner and Southern part of the region except middle part of the study area included in the third category where land under irrigation is found to be between 10 to 15%, which occupies nearly 22.8% of the total area and comprises nearly 21.8% of the total rural settlements.

In the fourth category south eastern and middle part of the study region and also Northern patch of the steady area, where the land under irrigation is found above 15% and it covers an area is about 17.3 percent of the total and accounts for 18.2% of the total rural settlements.

It is observed that in the Southern part of the Taluka, irrigation facilities are more developed than other because of Bhogavati river course and Hatevane canal irrigation facilities are a developed. In this region wells, tube well and wells with electricity are also developed so

percentage of land under irrigation in this region is found more and more concentration of settlements have been found.

3.13 DENSITY OF ROAD AND DISTRIBUTION OF RURAL SETTLEMENT

The topographical Feature of the region plays an important role in the development of road network in the study region. The road network is fairly developed except at the eastern and north-western part of the region.

For the analyzing purpose the study region is divided into sizeable grids of 4X4 km. and the density of road per sq.km.

3.9 Density of roads 2001

	Length of road	Area in square kilometers	Percentage to total	Number of settlements	Percentage to total
Pen	797	498.50	1.76	166	8.65
Raigad	45255	7148.00	-	1919	-

Source: R.T.O. Office Pen.

It is observed from the table and figure the central patches of the study region and Northern patch of the steady area, where road density is found high i.e. above 1 km. per sq.km. And it covers an area about 5.7% of the total and account for 9.1% of the total rural settlements. These parts are a main road junctions of the Taluka i.e. Koregaon. Satara Road, Rahimatpur and Cuathar station.

The road density between 0.5 to 1 km covers an area is about 29.5% of the total and accounts for 31.8% of the total rural settlements. The region lies middle part of the Taluka and Northern strip of the steady area.

The Western part of the region and middle part of the western boundary, where the density of road is found less i.e. 0.5 km. per sq. km. Which covers an area is about 61.8 percent of the total and accounts for 59.1% of the total rural settlements.

It is observed that National Highway No. 17 Mumbai to Goa has been going in this region. All villages and towns are linked with all towns of the Raigad district and also with important cities of Maharashtra.

1. Water supply:

Water is the most necessary of human needs and examples of settlements which are not located near water are very rare indeed. They are mostly very recent settlements to which water can be supplied by modern means such as pipelines and where other factors such as rich mineral resources make this an economic possibility. Ancient settlements which had, for reasons of defense, to be located on hills or at some distance from water are often characterized by the presence of deep wells, dams and dew-ponds for the collection of water. Usually, however, settlements were founded near rivers, lakes, and springs where water could be easily obtained. Sometimes the need for water drove people to settle in otherwise disadvantageous sites such as islands surrounded by swamps or on low-lying river banks. Such sites are often restricted in area or are liable to flood. Most water-based or wet-point settlements have many advantages. Besides providing water for drinking, cooking and washing, rivers and lakes can be used to irrigate farming land: Water contains fish which can be caught to supplement the diet, navigable rivers

and lakes can be used for transport, and defense is also facilitated if a village is surrounded by water. Springs and wells allow settlements to survive in areas where few rivers flow such as deserts or extensive limestone areas. Water often issues from the base of a limestone layer at a series of springs and villages sited by such springs are known as spring-line settlements.

2. *Land:*

Farmers will not choose to settle at points where the land is unsuitable for their traditions crops, low-lying land and settled first in the areas of rolling country. On the other hand, and began to settle they chose the low-laying river valleys and coastal plains which were suited to wet rice cultivation. Not only must the land suit the crops of settlers but also it must be suited to their tools and equipment. Early farmers in pen could not turn the heavy clayey soil of the valleys with their simple ploughs so they built their villages on the uplands where the soil was lighter and more easily worked. It is also important to remember that most original village settlements were almost self-sufficient though many are no longer so, and thus they would choose a site from which they had access to a variety of types of land including pasture, arable land and woodland. It is common for villages to enclose within their boundaries such a variety of land.

3 Dry land:

If water and land were available, the site chosen for the building of a village was usually one where the land was dry and not subject to frequent flooding. This was an elementary precaution to prevent damage to house and loss of life. Thus wherever settlement has taken place near rivers or in low-lying areas, people has sought out dry-points. These may be on the outside of river bends rather than on the lower inner sides of meanders; on river terraces or on leaves,

e.g. along the levees of the lower river's there is a continuous line of settlements; at the side of valleys above the flood plain or around the foot of prominent hills

4. Shelter:

The availability of building materials, either wood or stone, near a settlement is another great advantage. When most villages were first established they were built in forest clearings and wood was plentiful. But wood and stone are not the only important building materials. In loess areas such as northern Pen, for example, cave dwellings are excavated in the soft earth. In regions with few tresses, another aspect of shelter is the choice of sites favored by Climatic conditions. In mountain areas people often choose sunny south-facing

5. Defence:

Most villages were created in the distant past when political instability, the hostility of neighboring groups and other causes of insecurity made a defensive site a great advantage. For this reason many villages were get natural built on defensible hills,

6. Planned settlements:

Sites for settlements may not be spontaneously chosen by the villagers themselves and this is often the case with planned settlements in hitherto uninhabited areas. Providing that water, food and shelter can be obtained planners can arrange new settlements in a variety of patterns.

New villages have been created and old villages replanted from the earliest times by landlords, conquerors or governments who wished to impose greater order on their possessions or to streamline agricultural production. Planning is mostly associated, however, with recent expansion into unsettled land.

3.14 RURAL SETTLEMENT PATTERNS

The distribution and pattern of rural settlements can be approached in two ways. Firstly we can examine the size of settlements in relation to the environment and secondly we can study the pattern and shape of the settlements.

Rural settlements are of three sizes; the isolated building or group of buildings, housing one family and perhaps a number of farm workers; the hamlet of a few buildings, some of which may be farms or houses; and the village, which may have only a few houses or several hundred depending on the conditions in the area.

On most countries however the village is the typical form of rural settlements. Apart from houses and farms it usually contain public building like a mosque, church or temple, a village hall, perhaps one or two shops and a post office. The size of the village is determined by a number of factors.

1. The absolute size of the population will naturally affect the size of the village. In areas of dense population or areas where families tend to be large the villages may each house several thousand people and will cover a fairly large area. In sparsely or moderately populated areas, however, villages will contain fewer people and fewer houses.

2. The number of people in villages is governed to a great extent by the ability of the land to support population. When the limit is reached part of the population will have to move away to new areas to create new villages and clear new land, or will move to known to obtain work. Thus there is an optimum size for villages in any particular area.

3. The size of the village may be determined by a preconceived plan. For instance new villages created on Federal Land Development Authority Schemes.

4. The size of a village may be affected by its stage of development or by changes in population due to outside influences. If a village is newly-established it may be smaller than the average size of village in the region, but this may only be a temporary phase. Changes in population can cause village to grow or decline. As a result of poverty or due to agriculture changes rural depopulation may take place. On the other hand if a village is near a town it may attract extra non-farming population and thus expand.

So far the size of villages has been considered in terms of the number of building and the size of the population. The areal dimensions of villages containing a similar number of people may however differ according to the traditional shape and distribution of the village buildings. If, for instance, each house is surrounded by its own plot of garden land, the size of the village may also be determined by physical factors of site; a village may be prevented from growing in a given direction by an obstacle such as a hill or swamp.

Dispersed settlements

May usually has an instinctive preference for a close-knit community in which he can find company and safety, but sometimes other demands become stronger and dictate a dispersed settlement pattern. Such a pattern is usually found in areas where it is essential or at least desirable that the farmer should live on his own land rather than in a distant village centre. This is often true in highland areas where live stock rearing is the main occupation, and is common where farm sizes are large and population is rather sparse and scattered, e.g. in under populated areas.

The decline of the common field system and its replacement by enclosed farms had two main effects on rural settlement In the first place many farm workers left the countryside because they no longer had a right to farm common land and rural population decreased Many villages became smaller and some were completely abandoned Secondly, when it was on longer necessary for farmers to be able to reach a number of scattered plots easily, and consolidated farms were formed it often easier for the farmer to build his home on his own land rather than in the village.

Not all villages are based on agriculture. The largest group of non-agricultural villages are fishing villages these of sited on rivers lakes or coasts and the people look to the water rather than the land to provide their livelihood. The main occupation is of course fishing, but this may be combined with some agricultural activity. In some parts of the Pen taluka mining villages exist. But these were more common in the past in areas such as northern Pen taluka and southern Pen taluka, when smell-scale mining for coal or other minerals was economic.

3.15 EVOLUTION OF RURAL SETTLEMENTS

Rural Settlement Change through Time both In Pattern and In Function. It is clearing from the foregoing discussion of dispersed settlements that not only can the shape of villages change but the whole pattern can change from disperse Such changes are still going on in many areas, partly because of new developments in agriculture such as the use of machinery, which often cause changes in the pattern of land tenure and of settlement. For Mid-West has made some of the original half- section or even section-sized farms uneconomic to run and many former farmers are selling their land to neighbors and moving to the towns. This together with the desire for society which is also causing some people to move from isolated settlements, is

gradually changing the settlement pattern in the area from one of even dispersion to a much looser pattern of rural settlement interspersed with small towns .In the Mumbai., too, where large collective or state farms employ large numbers of workers, the people tend to live not in traditional villages but in large villages with many urban characteristics or even in small towns.

In many regions very rapid changes in rural settlement are taking place as a result of large-scale projects such as the damming of lakes for SEZ generation, or for irrigation purposes. Villages are often drowned and have to be re-established elsewhere.

During the course of time it is not only the pattern and size of settlements which changes but also their functions. A good situation can help to develop a village into a small market town, or the discovery of mineral resources can turn it into an industrial town. Similarly a fishing village can grow into a port or can acquire new functions as a seaside resort. Another way in which the functions of villages can be changed is by the influx of urban people either temporarily or permanently.

RURAL SERVICE CENTRE

&

AMENITIES

Chapter IV

RURAL SERVICE CENTRE AND

DISTRIBUTION OF AMENITIES

SITING FACTORS OF RURAL SETTLEMENTS

Introduction

In rural settlements the most basic sitting factors can be seen clearly at work. This is because permanent villages, like the semi-permanent settlements of shifting cultivators or nomads, or the temporary camps of hunters and gatherers, from which they evolved, have the same basic requirements of food, water, shelter and protection. As Man has developed more and more sophisticated techniques of obtaining a living, he has been able to depend more and more on a single place to provide his livelihood, but the basic requirements must be present. If these needs are provided, other factors such as planning can come into play and affect the sitting of settlement.

4.1 RURAL SERVICE CENTERS

The concept, though borrowed from the concept of Central Place Theory, got significance due to emphasis on micro-level planning in India. The three elements of the theory, i.e., (i) urban

centers, (ii) the hexagonal arrangement of their market areas, and (iii) transport network, are sought in non-urban hierarchy, in the form of, firstly, the service centers secondly, their zones of influence, and thirdly, the movement patterns at lower level. It is presumed, that the essential features of the main constructs of the theory, can be easily applied at lower levels, with certain modifications. The theoretical framework, derived from Central Place Theory, helps in identifying growth centers of various orders. The simple definition of the term, growth centre, is that "It is an urban core with a rural hinterland, capable of growth." It is a core, because, it serves its surrounding territory with services available in it, as well as, employs many from its service zone. It is obvious, that the role and nature of growth centre, depends upon the types of development region, to which it may belong. Friedman gives four types of such regions named as frontier, downward transitional, upward transitional and the core regions. According to empirical studies, growth centers, in the first two types of regions, cater to the provisions of services such as education, health, communications, transport, finance, trade, extension and retail services. Some centers may also provide administrative, judiciary and law and order services. In the third type, the growth centre would be the centre having a potentiality to absorb the new investment leading to renewal. In the last type, it serves as a counter magnate and is capable of taking some of the function away from its central core, thus, easing the tension, felt at central core, i.e., decentralization of services.

Thus, a growth centre is a logical extension of a service centre on the continuum of settlements, based on functional characteristics. At one end of it, one comes across a set of dependent settlements and at the other; there is a regional centre, which may be termed as growth centre. In between, one finds an array of central villages and service centers.

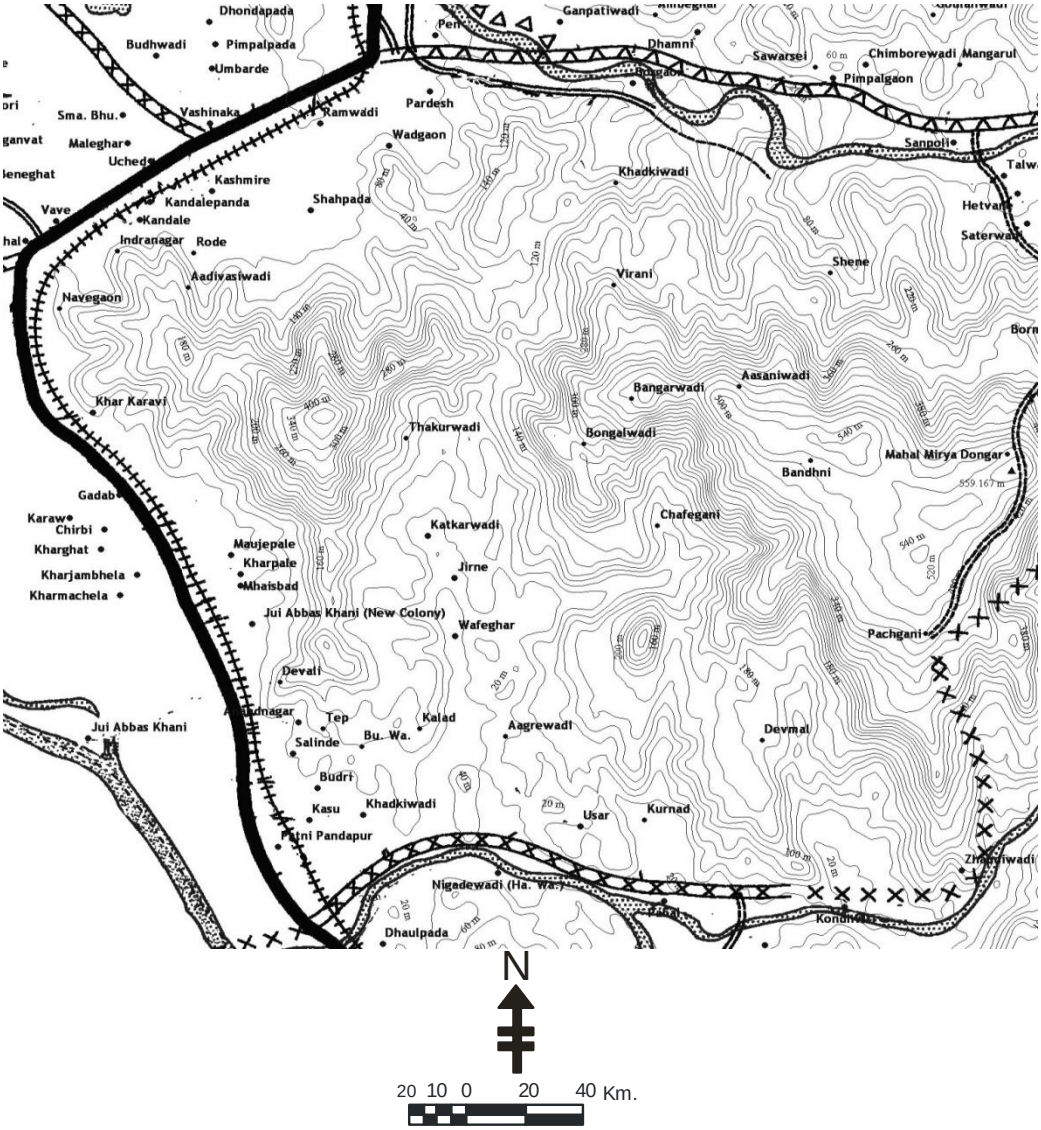
The genesis of growth centre concept, is traced into growth pole theory of Perroux and Boudeville, but in true sense, its merits were argued by, *inter alia*, Green and Taylor, who think that, these centers are supposed to provide, stimulation of economic growth and generation of employment, the diffusion of innovation, especially induced innovation, the provision of adequate services for the hinterland, especially, those related to basic needs, such as, education, health, water, power and housing etc., coordination of government and local development planning and effective interaction of local ideas and initiatives. Misra, rightly states that, growth centers are located at favorable points, where from, inducement of growth can be provided through selective diversified and decentralized provision of infrastructure and over heads these point being closer to the people prove to be more suitable for injecting the dements of growth and welfare at lowest level.

4.2 SITING FACTORS OF RURAL SETTLEMENT

1. Water supply:

Water is the most necessary of human needs and examples of settlement which are not located near water are very rare indeed. They are mostly very recent settlement to which water can be supplied by modern means such as pipelines and where other factors such as rich mineral resources make this an economic possibility. Ancient settlement which had for reasons of defense to be located on hills or at some distance from water are often characterized by the presence of deep wells, dams and dew-ponds for the collection of water. Usually, however, settlements were founded near rivers, lakes and springs where water could be easily obtained. Sometimes the need for water drove people to settle in otherwise disadvantageous sites such as islands surrounded by swamps or on low-laying river banks. Such sites are often restricted in areas or are liable to flood. Most water-based or wet-point settlement has many advantages.

Besides providing water for drinking cooking and washing. Rivers and lakes can be used to irrigate farming land: Water contains fish which can be caught to supplement the diet, navigable rivers and lakes can be used for transport, and defense is also facilitated if villages are surrounded by water different purposes they also differ in their relationship which the environment, and the most important factors of site and situations are rather different for villages and towns. It is therefore most convenient to treat rural and urban settlement separately.



Map no 4.1 Hilly Region of Pen

Springs and wells allow settlements to survive in areas where few rivers flow such as deserts or extensive limestone areas. In Pen taluka Thakurwadi,Katkarewadi, Jirne and Bangalwadi villages have Water often issues from the base of a slope, Hill region and there are no more water arability in Thakurwadi (120m),Virani (280m) Bangarwadi (500m) Bangalwadi (300m) Asanlwadi (360 m), Katkaradi ,Jirne Chafegani, Bandhni (540m) Aadivasiwadi area have 140 to 400 m .

Table no. 4.1 Drinking water facilities in Pen taluka.

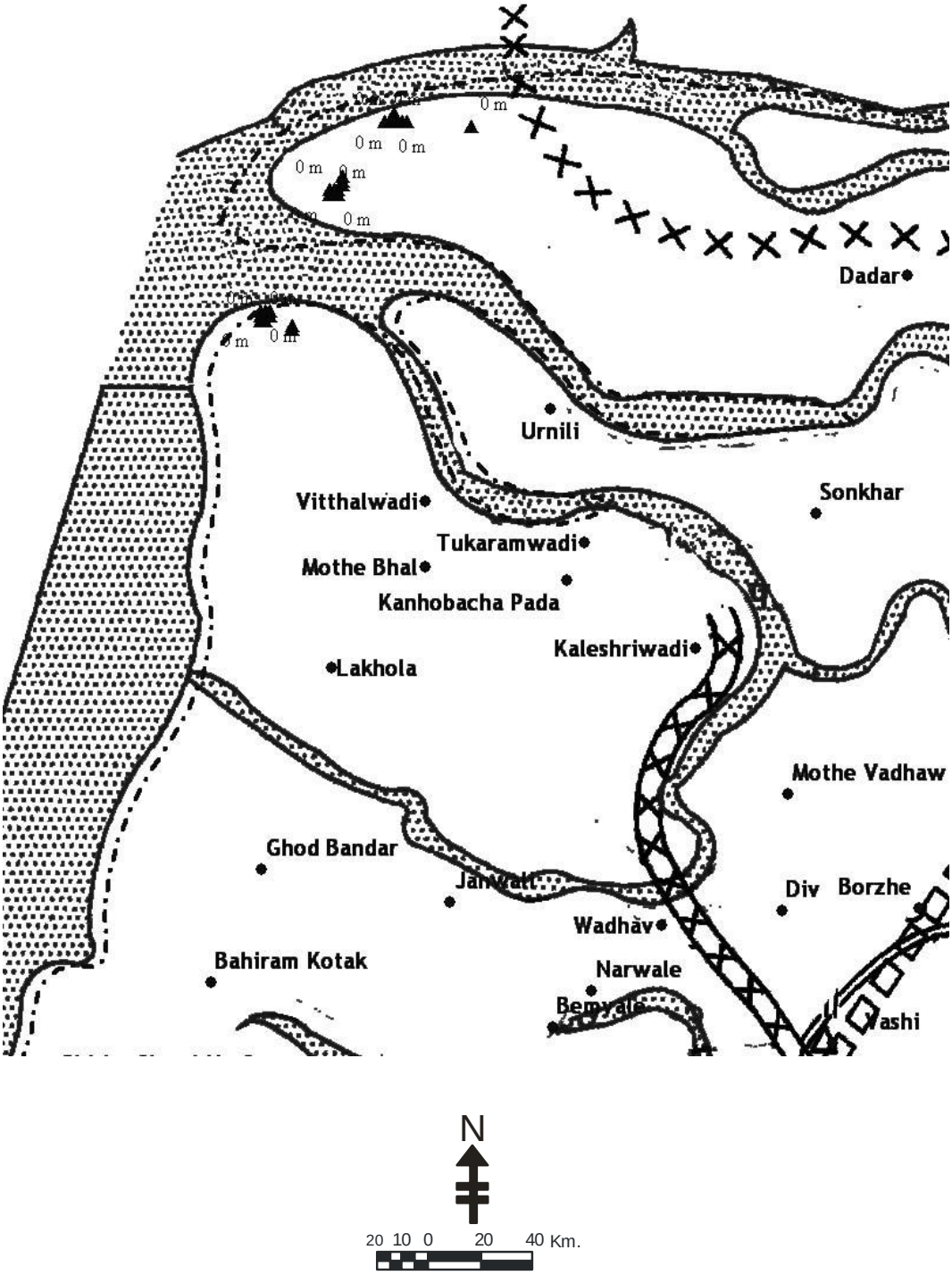
Sr. No.	Blocks	Wells	Tube wells	Hand pumps
1	Pen	31	13	69
2	Raigad Ghats	5222	80	2290

Source: **Directorate** *of Agriculture, Pune.*

2. Land:

Farmers will not choose to settle at points where the land is unsuitable for their traditional crops. Thus the founders of villages Vittalwadi, Kaleshriwadi, Lakhola Urnilli, Jawali, Bemvale these villages from Pen Taluka avoided swampy, low-laying land and settled first in the areas of rolling district. On the other hand, Agri people chose the low-laying river valleys and coastal plains which were suited to wet rice cultivation.

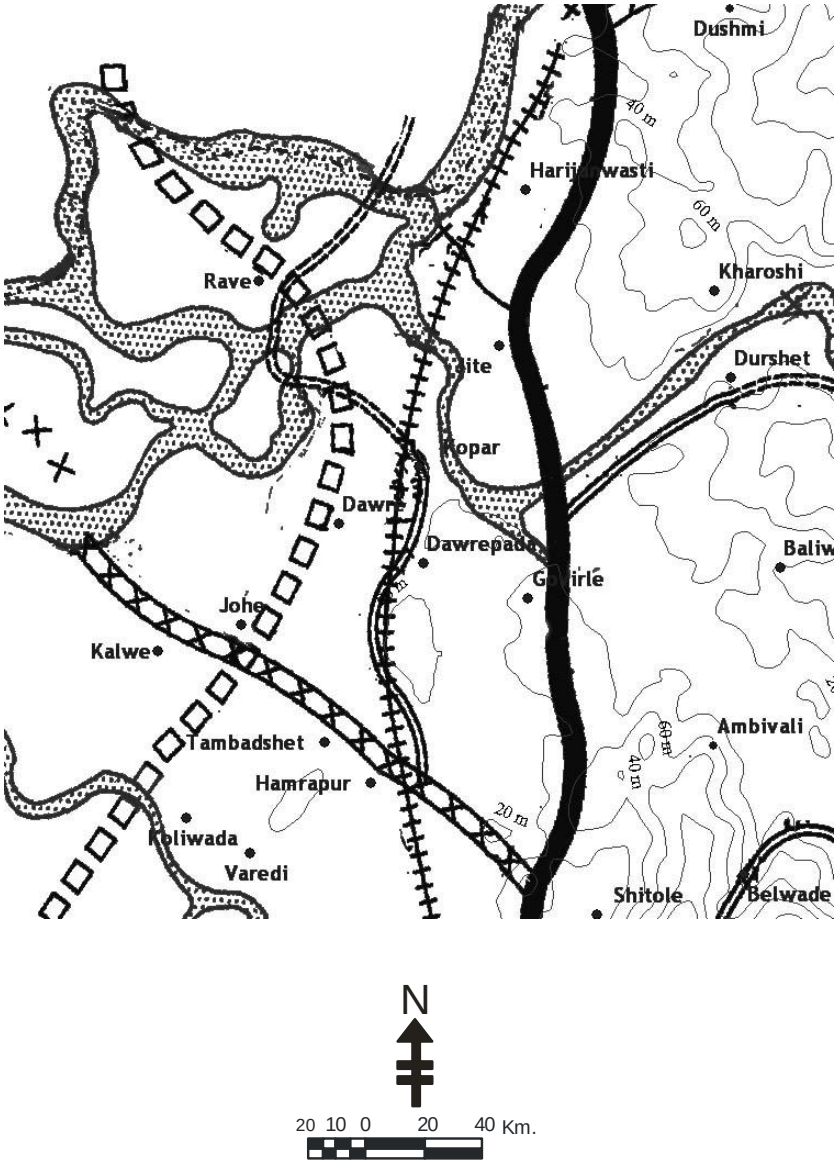
Not only the land suits the crops of settlers but also it must be suited in their tools and equipment. Early farmers in Raigad could not turn the heavy red soil of the valleys which their simply ploughs so they built their villages on the uplands where the soil was lighter and more easily worked. It is also important to remember that most original village settlement were almost self-sufficient though many are no longer so, and thus they would choose a site from which they had access to a variety of types of land including pasture, arable land and woodland. It is common for villages to enclose within their boundaries such a variety of land.



Map no 4.3 Western Part of Pen (Counter Map)

3. Dry land:

If water and land were available, the site chosen for the building of a village was usually one where the land was dry and not subject to frequent flooding.

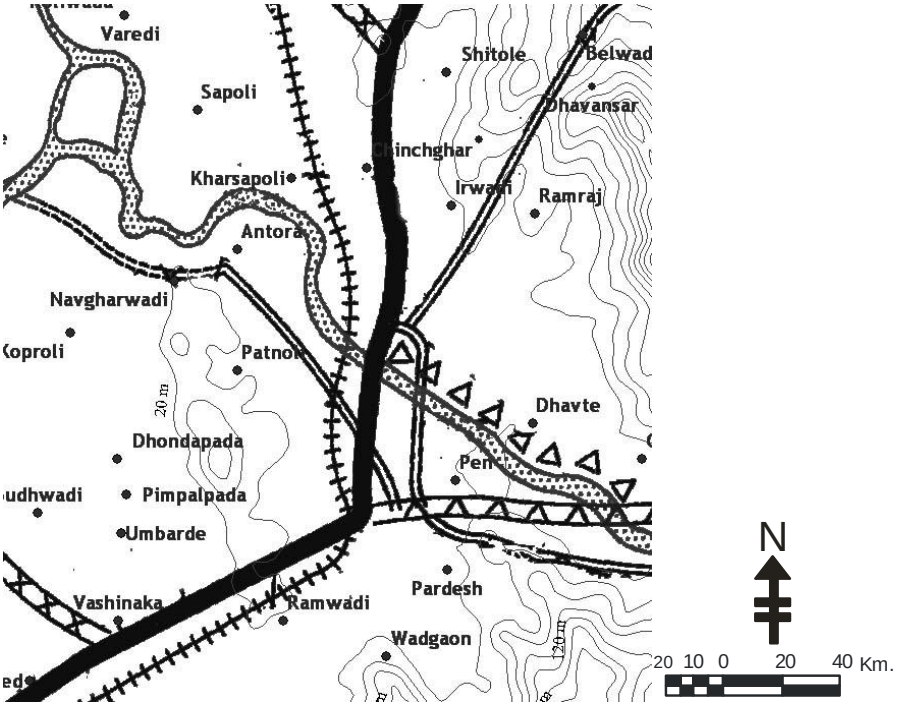


Map no 2.13 North part of pen (Counter Map)

This was an elementary precaution to prevent damage to houses and loss of life. Thus, where settlement has taken place near rivers or in low-laying areas, people have sought out dry-points. These may be one the outside of river bends rather than on the lower inner sides of meanders; on river terraces or on levees, e.g. alone the levees of the lower Bhogeshwari River there is a continuous line of settlement at the side of valley about the flood plain or around the foot of prominent hills on Rave, Kharsoshi, Durshet, Dawrepada Villages. Another way of overcoming problems of flooding is to build houses on piles or stilts, both as a protection against flood and against insect and animal pests. Building houses on stilts in tropical countries has an added advantage in that it helps to keep them cool by allowing the air to circulate beneath them.

4. Shelter:

The availability of building materials, either wood or stone, near a settlement is another great advantage.



Map no 2.14 Center part of pen (Counter Map)

When most villages were first established they were built in forest clearings and wood was plentiful. But wood and stone are not the only important building materials. In loess areas such as Eastern part of Pen taluka, for example, Pimpalpada, Koproli, Navgharwadi, and Umbarde. The chief building material is the earth itself, often made into mud-bricks.

Another aspect of shelter is the choice of sites favored by climatic conditions. In mountain areas people often choose south-facing slopes or north-facing slopes as the site of their villages because this side of the valley will be warmer. People usually avoid wind-swept heights, frost hollows and areas prone to damp unhealthy monsoon. Where winds are strong in open district they often have to protect their houses with windbreaks of trees. Coastal villages are often cited on sheltered.

Another important factor is health. People do not choose to settle in disease-prone areas. For example the low-lying areas of Pen taluka, which were malarial, were not settled until malaria had been brought under control. When this happened a series of new settlements was established. The Dry zone was long avoided by settlers because of the prevalence of mad water or salty water.

5. Defence:

Most villages were created in the distant past when political instability, the hostility of neighboring groups and other causes of insecurity made a defensive site a great advantage. For this reason many villages were built of defensible hills, islands or promontories. In Pen taluka for instance the upstanding various types of shape villages formed good defensive positions and were often used as settlement sites. Many villages, though not actually built on hills were located at their retreat into the fortified heights. In many areas villages were also built near

monasteries or the castles of powerful nobles, which offered some form of protection in times of unrest.

6. Planned settlements:

Sites for settlements may not be spontaneously chosen by the villagers themselves and this is often the case with planned settlements in hitherto uninhabited areas. Providing that water, food and shelter can be obtained planners can arrange new settlements in a variety of patterns.

New villages have been created and old villages replanned from the earliest times by landlords, conquerors or governments who wished to impose greater order on their possessions or to streamline agricultural production. Planning is mostly associated, however, with recent expansion into unsettled land. New villages have been created in newly drained land; such settlements often follow the traditional patterns of settlement in surrounding areas. Sometimes is almost independent of the natural features and does not resemble established villages. The influence of this kind of settlement planning never seen in Raigad district.

7. Weekly markets:

Market facilities are important for the supply of items of daily needs because one does not have to waste much time on movement over a long distance to buy essential commodities. Especially in the rural areas like the present study region, these facilities have a greater role because the road network and transport facilities are also not available to more than 75% of the people. Out of the total 166 inhabited villages only 10 villages have one day market facilities and 122 villages have these facilities within 5 km. in 34 villages, the facility is available at a distance of 5-10 km.

Table no. 3.2 Market Facilities in Pen Taluka

Sr. No.	Blocks	No. of villages with facility				Total
		Available	Up to 5 km.	Within 5-10 km.	Above 10 km.	
1	Hamarapur	03	15	07	--	25
2	vashi	02	29	09	--	40
3	Kashu	02	20	12	--	34
4	Pen	03	58	06	--	67
Total Pen		10	122	34	--	166

Source: Computed by author based on Village Directory, District Census Handbook of Raigad, 2005.

When, we observed above table, 10 villages having availability of market facilities. Wherever, 122 villages having up to 5 km. distance within two market facilities. Whereas, 34 villages within 5-10 km.

8. Road and transportation:

The roads are the veins and arteries of an area. More than 20% of the inhabited villages in the region do not have pacca road. Out of the 166 inhabited villages 140 villages have pacca road and rest of the 16 villages have kaccha road.

The streets within the village are usually unpeeled and not well maintained local roads are used by vehicles and pedestrians and sometime to graze animals dry grains and to display merchants, wares and as children's playgrounds. Street light are rare, but are not perceived as a pressing need partly, because there is not a high incidence of crime. Some of the villages are connected to other settlements by a pared road, but many are connected only by direct roads or

footpaths which are very dusty in the dry seasons and muddy during rainy season. Often, so muddy that they cannot be used. Length of road in Raigad district 567.8 km, where as in Pen 1205 km.

Table no. 3.3 No. of vehicles in Pen Taluka

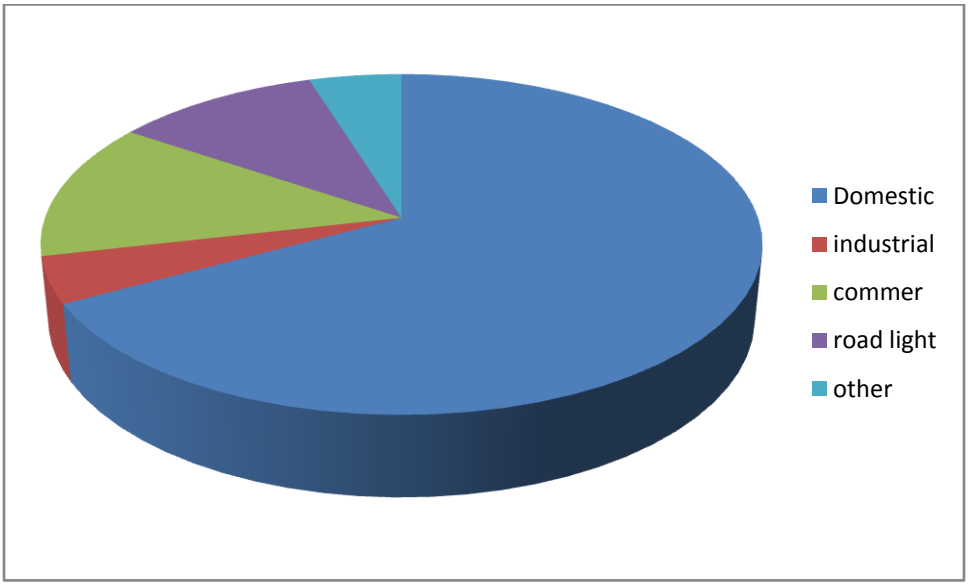
Sr. No.	Types of vehicle	Raigad	Pen
1	Buses	639	105
2	Motors & Vegans	51057	4008
3	Jeep	15084	1280
4	Taxi	9540	579
5	Three wheeler	25505	1962
6	Two wheeler	148792	22343
7	Ambulance	288	65
8	School Buses	215	32
9	Trucks	8320	519
10	Tractors	548	102
11	Other vehicles	17108	992
District Total		280581	

09. Rural electrification:

Power supply is vital for the economy is very poor. There are only 154 villages in the region where, power is available for domestic, commercial, industrial and other purposes.

Table no. 3.4 Electrification in Pen Taluka.

Sr. No.	Domestic	Industrial	Commercial	Road light	other	Total
1	3473	227	677	555	249	5181
%	67.03	4.38	13.06	10.71	4.82	100



Graph no. 4.1 Electrification in Pen Taluka.

Source: District Gazetteer, Raigad, District Census Handbook, Raigad.

Above table clearly shows that 67.03 percent of electrification used in domestic purposes. Whereas, 4.38 percent in industrial sectors. 677 connections (13.06%) in commercial and 555 connections are taken to road light purposes in Pen Taluka. Hence industrial connections are low in this way industrial development is poor position.

4.3 GROWTH CENTRES

In the 1960s, the concept of growth centers was extended to include centers which would specially promote rural development. This extension emerged from (1) the failure of industrial growth centers to help their rural hinterlands, (Dhavte and Kharsapoli) (2) the steadily increasing number of very poor people both in urban and rural areas, (Aaghal and Shene) (3) the need to concentrate the dispersed rural population, and (4) the limited success of the existing rural development programmes, which suffered from lack of spatial co-ordination of the various projects of different sectors and government agencies. Moreover, many planners had failed to recognize that not all rural problems can be resolved at the Aaghal, Dhavte Shene village. Nor had the necessary role of urban centers in rural development been fully understood. Rural development programmes had focused on agricultural development, involving the provision of high-yielding varieties of seeds, fertilizers, etc. through normal trade channels. The resulting "green revolution" benefited the already better off groups in rural areas, but left the poorer groups in as bad a condition, or worse, than before.

The severity of their problems forced planners and policy-makers to look for a more comprehensive approach to rural development; it was in this context that the idea of rural growth centers emerged. In the case of India, "This green revolution, while on the one hand it has led the country towards self-sufficiency in food, has, on the other hand, created social and economic problems, such as rural unemployment and income disparities, and social tensions". To deal with these problems, "the redistribution of land can only be palliative; there is no way of distributing land equally, nor is there enough land to provide everyone with an economic holding. Obviously, then, the solution lies in the creation of new employment opportunities in allied sectors of the economy. The agro-industrial sector appears to be most promising one. Large manufacturing

units are capital rather than labor-intensive and the social and technological background of the rural population does not prepare it for such activities. As the existing urban centers of India with special reference to Raigad in Maharashtra are few and are already overcrowded and cannot absorb the ever-growing number of 'rejects' from the buoyant agriculture there is a need for centers which specialize in agro-industrial activities to function as 'shock-absorbers'.

The dominant concept of rural growth centers has been the need to provide the rural population with convenient, affordable access to market towns where they can sell their produce, obtain an adequate variety of supplies and service, and find opportunities for non-agricultural employment. In a detailed study of the potential role of market centers, based especially on conditions in India in the 1960s, it has been asserted that: "The greater majority of underdeveloped countries are agricultural economies that can only be transformed and modernized if farming can become increasingly commercialized. Every farm locality that hopes to develop will therefore need access to markets where farm produce can be sold for cash without the danger of monopolistic exploitation and where there are enough sellers of farm supplies to prevent monopoly. Such markets and farm supply outlets should be punctiform, so that buyers will not have to go to one place for supplies, to another for credit, and to still a third place to sell their crops. What is essential, therefore, is a unified market town where appropriate facilities are congregated." "Because the country-side (in many developing countries) is inadequately provided with accessible market centers where farm produce can readily be sold and where shops filled with consumer and producer goods can exert their tempting 'demonstration effects', the incentives to produce more for the market and the inducement to invest in better tools, fertilizers, or better livestock in order to generate a larger marketable surplus are weak…. A second handicap that stems from an inadequate number and a faulty

distribution of central places is rural unemployment, under-employment, and a wanton dissipation of ability and talent. Young people have no way of knowing what talents they may actually possess unless they have some opportunities for experimenting. If their lives are confined to a rural economy where the only thing visible on the horizon is a landscape or villages, their latent proficiencies, unperceived aptness, and unsuspected creativity may never be released". These strategies are expected to "solve the following problems or inconsistencies of rural development:

1. Provide more specialized services and commercial goods to more isolated villages, which individually have too small a demand to support the services.
2. Act as a marketing depot for the surrounding agricultural region.
3. Provide basic urban infrastructure and services (water, electricity, bank, market labour, market) necessary for small-scale industries and enterprises.
4. Act as node in the transportation system linking rural areas to other cities and regions.
5. Provide a lower end to a decentralized administrative and political hierarchy, channeling local concerns "bottom-up" and articulating central government objectives "top-down".
6. Act as a node for spatial co-ordination of development inputs, so that interdependent inputs are made available either together or in the proper sequence, as needed.
7. Provide a nearby urban place to which rural residents may commute in order to find off-farm jobs or to market home-produced consumer goods.
8. Provide a small urban alternative for potential migrants from the surrounding area".

Another version of rural growth centers has been the use of new settlements in frontier areas,

Finally, the programmes to resettle scattered rural populations at least into villages, or even into small towns, may be classified as rural growth centre programmes.

Since most of the rural growth centre programmes are quite new, there is little information available on their progress. It appears that no developing country has so far implemented such a programme on a wide scale. The Government of India did select 21 pilot areas in the early 1970s to be developed as rural growth centers, but there has been little or no follow-up at the project level. Nevertheless a number of *de facto* growth centers are emerging in rural India as various privately organized schools, input supply stores, warehouses, rural markets, private clinics, repair shops, etc. have been built at road junctions or in places where government agencies have established one or more of their facilities. As the population of these places has increased, the improvement and addition of transport and communication links have increased accessibility from surrounding villages. A similar phenomenon appears to be occurring in many other developing countries, though there is little information available to document this observation.

Whether the emerging rural growth centers will have any major effect on rural development has yet to be seen. But it is clear that the rural growth centre strategy cannot stand alone. To be successful, it must be accompanied by other strategies, including implementation of complementary social, economic and institutional reforms.

4.4 DEVELOPMENT OF RURAL VILLAGES

In rural settlement, dwellings and structures, community facilities and social and economic activities of the people are closely interrelated. An improvement in any one of these components affects the others. Just as programmes to improve the economic base can result in

improved living conditions programmes that have improved living conditions as their prime aim can also have an economic impact. Because improving conditions in rural settlements and the lives of the people who live there involves investment in and attention to physical, social and economic concerns, usually there is not one but many ministries (or departments) involved in this effort. Coordinating the plans and investments of these various ministries is difficult and time consuming and this sectoral approach sometimes makes rural development haphazard and chaotic.

Since the main economic pursuit in rural settlements is agriculture, many governments in developing countries are attempting to increase rural incomes by directly helping farmers to increase yields and by providing ways for marketing produce at favorable prices. Some governments have concentrated on the provision of a modern infrastructure such as roads, electricity, and a market system while leaving it to individuals to succeed in their economic endeavors. Other governments, in addition to promoting a modern infrastructure, also attempt to reach individuals with technical advice and credit. A number of governments have introduced a variety of programmes which contribute to agricultural development, including land redistribution schemes, irrigation projects, technical assistance through extension personnel and rural training programmes, provision of such services as agricultural credit and marketing facilities, and the formation of local co-operatives. Sometimes several of these elements are combined into an “integrated” or “packaged” programme.

MICRO ANALYSIS STUDY

Chapter V

MICRO ANALYSIS STUDY OF SELECTED VILLAGES

A) DADAR

B) VIRANI

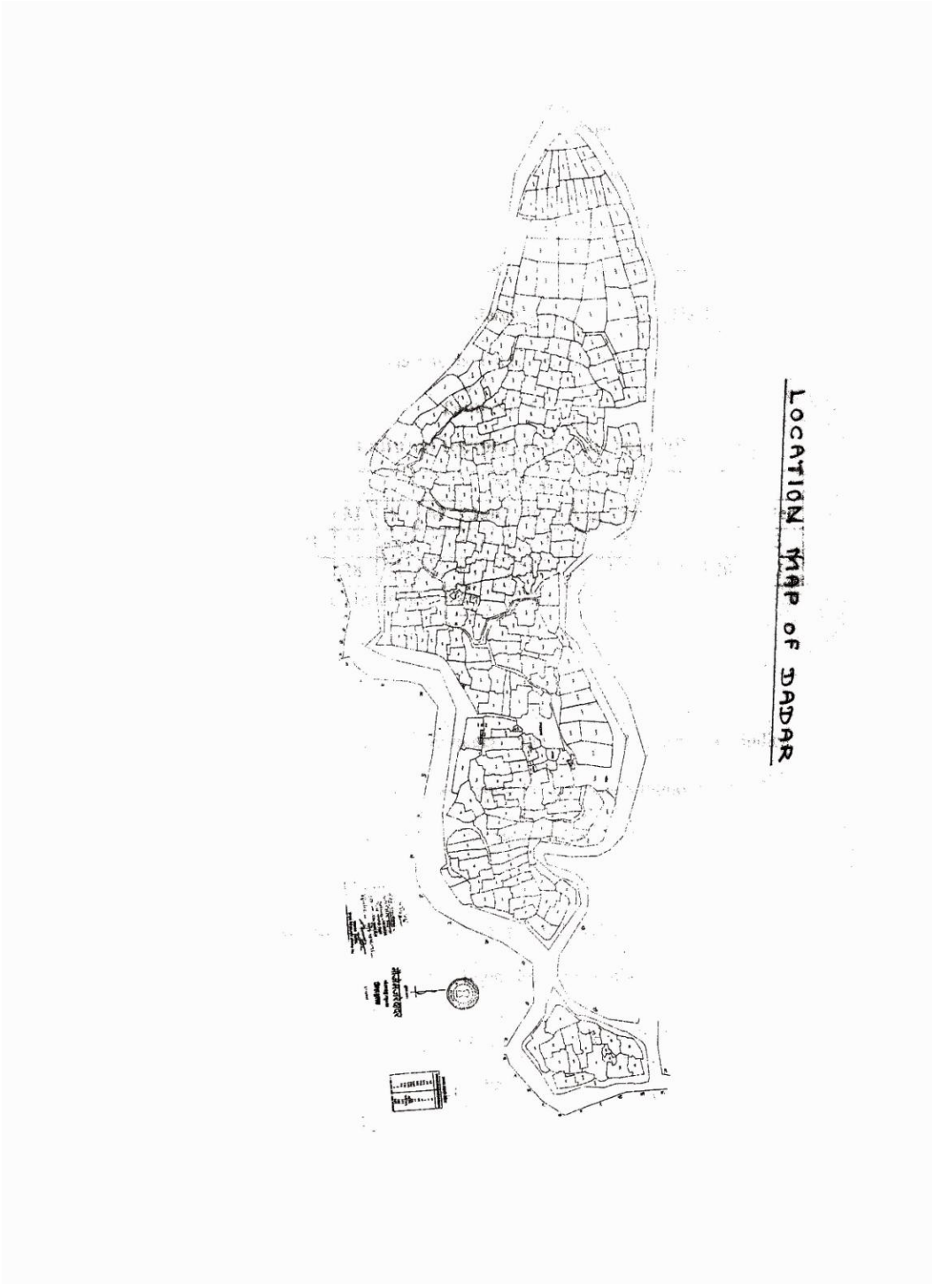
C) ATIWALI

Introduction

The basic purpose of the present study is to examine the pattern of settlement. All collection from field through sampling techniques. Following stage have been involved in the process of collecting data from the field. On the basis of population size of the villages remotevity and their distance from the nearest market centers. Out of total 3 villages has been selected as sample villages are shown. After selecting villages for sample survey the attention has now directed to households for conducting detailed investigations. In selecting household, no statistical technique has been introduced.

A) DADAR

Dadar is situated in Hamarapur division of Pen tahsil. This village famous entire the Raigad district because it is surrounded by water by all directions. Number of forest area in western part of village just like it seen as sand. In ancient period number of small sheep used for transportation; early five years ago the bridge have constructed by government of Maharashtra.



Map No 4.1 Location Map of DADAR

Climate:

The study climate is considered the most important because it affects the human life in various ways and has direct impact on agriculture as well as human Settlements. The change of seasons is regulated by the South West and North East monsoons. The temperature reaches up to 35° to 40°C during March to April months. The humidity is comparatively high. January is the coldest month of the year.

Table No 5.1 Mean annual temperature and rainfall

	Months											
	J	F	M	A	M	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Min	17	21	23	26	27	28	24.4	22	20	19	17	13
Max	20	26	28	31	42	31	21	23	23	21	20	18

Source: Compiled by author.

Forest:

Tectona aradis, Terminatia tomentesa, Mamgrifera indica, Terminatia arjun bridelia retusa, cassia fistula, acacia monosperma, ficus bhengalensis and bambusa aroundinaces plant are found in Dadet the forest.

Department of social forest has planted the number of trees such as Acacia auriculiformis, Delenix regia, Park in Sonia aculeate, grevillea robusta (Silver ok) part had been planted in open space on the corner of road. The biodiversity is developed here.

Agriculture:

Agriculture is the arts of cultivating, the soil including the allied pursuit of gathering in the crops and regarding livestock tillage husbandry and farming. Agriculture is the principal occupation of the majority of working for in any rural areas. But in the study area farming occupation is second. Lack of money and cultivable land it affects the development of agriculture. Only 22.23 hectored area under cultivated.

Soil and slope:

Soil is one of the important major resources in a region. In the present study area which basically depends upon on agriculture. Soil contribution in major role in economic development. Most of the areas are found in laterite alluvial soil. But the development of farming is very poor. The peoples are attracted towards other business. Number of people has migrated to all over India.

Existing infrastructure:

The study of infrastructure is considered the most essential for planning and development of a region. The infrastructure is categorized into physical or basic infrastructure and social economic infrastructure. The availability of basic social amentias and services like education, medical facilities, portable drinking water facilities, approach roads, means of transport, power supply, post and telegraph services and marketing facilities which are considered a must for the social economic development and planning of the region have been in brief.

Educational facilities:

Education is regarded as one of the most important factor for social economic progress of any region. The educational facilities are very poor in Dadar Village. Only 889 students have studying in 1to 12 standards in 2005.

Table No 5.2 Educational facilities number of students (2005)

	1	2	3	4	5	6	7	8	9	10	11	12	Total
B	94	85	67	63	46	33	57	26	22	28	16	25	562
G	40	41	38	29	33	32	21	19	13	23	12	26	327
Total	134	126	105	92	79	65	78	45	35	51	28	51	889

Source: B.E.O. Office, Pen.

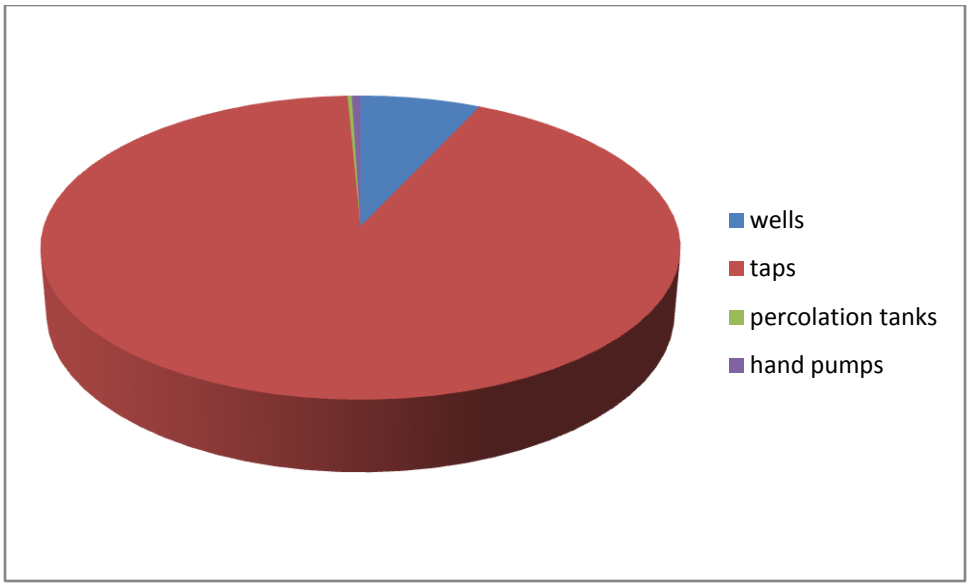
When we observed above table it is clearly indicate that, 889 students are studying in various classes in 2005-06. But in 1995 school was started and the no students in the school. After 10 years educational facilities are in good position. In the first-class 94 boys and 40 girls are studying whereas in the 10^{th} class the number of students are decreased per year. Hence, only 36.78 percent of girls and 63.22 percent of boys studying respectively. In 1995 you only 4 teachers are taught in that school, but in 2005-06 15 teaching staff and one headmaster is surveying there.

Water resource:

Drinking water is one of the most essential commodities of survival of mankind. Out of total 166 inhabitated in rural settlements in the sample area. Only 28 wells, 372 taps, 2 Hand Pumps have potable water.

Table No. 5.3 Sources of Drinking Water

Sr. No.	Source	No.	% of water source
1	Wells	28	6.947
2	Taps	372	92.307
3	Percolation Tanks	01	0.248
4	Hand Pumps	02	0.496
	Total	403	100.00



Graph no. 5.1 Source of Drinking Water

Land use pattern:

Land is one of the most important the basically source to a man and had a profound influence to the nature of civilization and the degree of their social, economic and technological advancement. The value of land changes time to time according to capabilities efficiency and ability of man to use it.

Land pattern of region connects the actual and specific use of land for which its surface area is put in term of use. The aim of the study each to suggest a proper land use for the land which otherwise has been put to some other use for which the same is unsuitable.

The land use of the Sample village studied into following heads.

Table No5.4 Land use pattern of Dadar (H)

Sr. No.	Land use	Area in Hectors
1	The area not available for cultivation	212
2	Cultivable land	122.77
3	Cultivated land	22.23
4	Area under forest	422.80
5	Cultivable Westland	95.00
6	Gaonthan	14.20
	Total area in hectors	889.00

Source: Department of Agriculture Pen

1) Area not available for cultivation:

The area under this category includes the areas which cannot be used for cultivation due to natural factors and cultural factors such as built-up land or settlement, road and cannals. When we observed above table 23.84 % land is not available for cultivation out of total area.

2) Cultivable land:

The cultivable land is the land which is not presently used for cultivation but can be brought under cultivation after making efforts in the future. Out of total area (889 H) 122.77 hectors (13.80 %) land is cultivable.

3) Cultivated land:

The category includes net areas sown and the current fallow it covers 22.23 hector (2.50 %) of the total area under the renewed villages.

4) Area under forest:

The land use statistics indicate that only 47.55 % (422.80 H) of the total land is occupied by the Forest which is falling in southwest part of sample study area.

5) Cultivable land:

Cultivable Westland is the land which can be effectively utilized for cultivation purpose but presently not being utilized for growing crops. The total land under this category is computed as 95 H. (10.68%) of the total Dadar Village.

MEDICINAL FACILITIES:

Probably health is the most crucial characteristics of man have as far as the quality of human resources is concerned. The good health is problem in the Dadar village. Nutritional deficiency affects all age groups. Low income due to low agricultural production causes no provision of basic needs such as food, clothing shelter, health and education. Only one primary health centre is in the Dadar. The patients came to surrounding areas for their treatment and one private dispensary started since eight years.

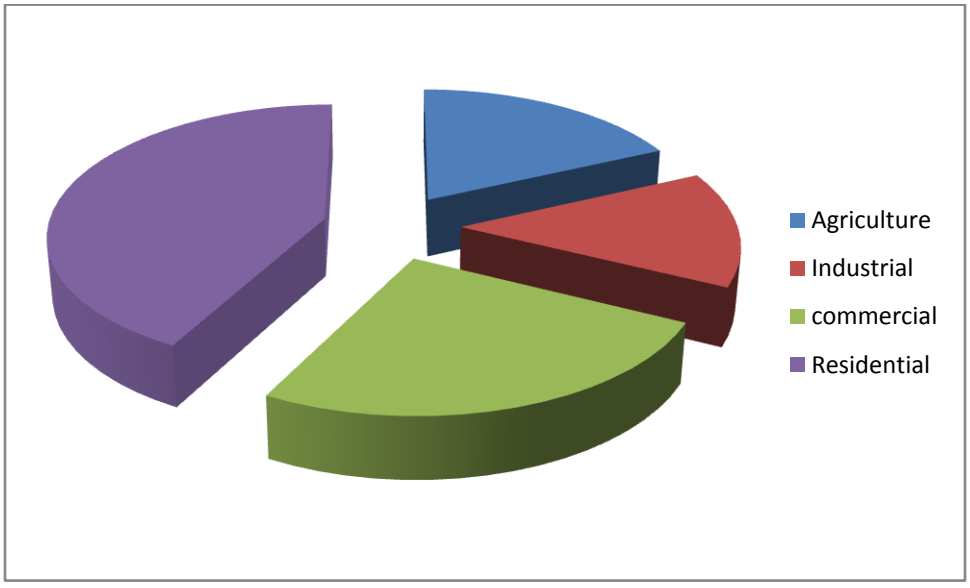
ELECTRIFICATION FACILITIES:

Electricity makes itself one of the important agents of development in term of socio-economic achievements. In rural areas which can be responsible for many of reaching changes in the method of agriculture, industrial growth and commercial activities. The consumption of electricity indicates not only the level of electrification but also the overall development in the

region. The total numbers in Sample village of consumption of electricity is shown in following table

Table No 5.5 Consumption of Electrification in Dadar

Sr. No.	Consumption	Consumption	Percentage
1	Agriculture	1245	18.056
2	Industrial	970	14.068
3	Commercial	1750	25.380
4	Residential	2900	42.066
	Total	6895	100.00



Graph no. 5.2 Consumption of Electrification in Dadar

Source: Computed by author

The lack of infrastructural facilities and poor economic condition are the main factors responsible for the low consumption of electricity in the Dadar Village. 42 % electricity is used for residential purposes. Industrial sector consume 14% share which is very low widening agricultural sector the percentage of consumption is 18%.

OTHER OCCUPATIONS:

Occupation refers to the personal trade or profession or the type of work in which they are engaged. Number of people engaged in fishery industry (35%), only 10% public government and the non-government service, 30% in business, 15% farming and 10% of people are less than 14 years and out of age.

Table No.5.6 Occupational Structure of the Dadar

Sr. No.	Occupation	Percentage
1	Fishery	35
2	Service	10
3	Business	30
4	Farming	15
5	Out of the age	10

Above table shows that, occupational structure of Dadar Village. 35 % engaged in fishery business which is the group for low income, 30% people are doing the various businesses, whereas 10% public depend population which include under 14 years and out of 60 years old. It is clear that the village of Dadar is under developing process.

CURRENT CONDITION IN A RURAL SETTLEMENT:

In order to improve the living conditions of the people in a rural settlement it is important to be familiar with the current condition the constant and improving them and the current and potential resource and a process which can be used them. Most are developing country is characterized by a pattern of settlement that includes one or several large cities but in a rural area thousands or thousands of smaller settlement found in a rural Pen area.Total population of village is 4259 in 2001 census.

Table No.5.7 Number of Houses in Dadar Village

	1991	Percentage	2001	Percentage	Volume of change in percentage
Pacca	472	68.306	739	65.572	- 2.734
Kachhe	219	31.694	388	34.428	+ 2.734
Total	691	100.00	1127	100.00	

Source: Village Directory, District Census Handbook, Raigad

Stone, cement and concrete used for pacca houses whereas bamboo and tin used for Kachha houses. In 1991 pucca houses was 472 and 739 in 2001. On the other hand 219 kachha houses in 1991 and 388 houses was 2001 year. It is clearly that, number of houses and type of houses are increased during the study period in Dadar. Most of settlement types are found in central type and few settlements are linear pattern, which are houses of Koli Caste. The people of Koli caste catch the fishes.

POPULATION:

Table No.5.8 Growth of Population at Dadar

Year	Population	Male	Female
1991	5034	2590	2444
2001	4249	2189	2060

Source: Village Profile, Dadar

Above table clearly shows that, the growth of population is decreased by 785. Where male 401 and female 384 are also decreased. Because number of people had been migrated to Mumbai and Poona for their economic that conditions and get the good job. Nobody SC and ST peoples are living in Dadar Village. Most of people i.e. Katkari, Thakur are living here.

Table No.5.9 Population with Household in Dadar Village

Year	Population	Household	Volume of changing number
1991	3672	911	-
2001	4259	1127	216

Source: Socio-economic abstract Raigad.

Above table reveals that growth of population and total households in 1991 to 2001 are discussed. All households are located in 1991, whereas 1127 households in 2001. It is clearly shows that, the households are increased during the study period.

CONCLUSION:

After the study I have been concluded in following ways.

1. One more school is essential for the learning students.
2. To develop the small-scale industries in villages so the government have facilitate to interested people.
3. To supply the water for drinking and agricultural purposes from Hetwane Dam.
4. To give the new instruments and to apply the technology for fisher men's.
5. Number of people is schedule tribes give them new plans and projects and government facilities by the governments.

B) VIRANI

Virani Sample village is located highest range of mahalmirya hills. The highest of this range 335 above mean sea level number of forest and animal are found here. That's why noonday primary social facilities are here.

LOCATION AND BOUNDARIES:

The Study area has a geographical area of 172 hectare. According to 2001 census the study region has a population of 509 persons which as 258 male and 251 female population. It is surrounded by Borgoan in the north, Shena gram in eastern part, and mahalmirya hill ranges is south and western region is rural pen

CLIMATE:

It is play an important role in affecting characteristics of rural settlement. It can influence the choice of farming system, pattern of settlement. Hence climate not only affected agriculture but also all activities of man.

The Climate of Study area is cold because it is located in hilly ranges of sahydries. The mansoon season starts from June and prevails up to September. The post monsoon season runs in October and November. The cold weather comes to words the end of November when temperature being to decrease rapidly. December is generally coldest month with the mean daily maximum temperature. The period from middle of February to the beginning of the south west monsoon season is one of the continuous rises in temperature. May is the hottest mean daily minimum temperature at 28^0.

Table No.5.10 Annual Temperature of Virani

Months		J	F	M	A	M	J	J	A	S	O	N	D
Temp.^{0}C	Min	18	20	24	28	32	31	30	29	31	29	26	21
	Max	28	30	34	37	42	39	37	34	32	30	29	27

Source:-Meteorological department Raigad.

It is clearly that, highest temperature is recorded in the month of May and minimum temperature in January.

Map No 5.2 Location Map of VIRANI

FOREST:

Forest are natural gifts that every live being is associated within the ancient times Rishimuni used to live in the forest have been the source of inspiration for many poet, artists and writers. In addition, tourists have always been attracted toward forests. Sag, Moha, is found in most of village. 75 % Population depend upon the forest business. Number of chittah, Tigher, Deer, Wild pig is observed in these forests. Most of backward class people are living in this forest.

SOIL & SLOPE:

The study of slope from one it has becomes the most important aspect of geomorphology between hill top and valley bottom.

Soil gains a pride of place as far as human race development is concerned. Amba valley is famous for fertile silt and soil. The soil in the region is found laterite type. It is suitable for agriculture. The most of the soil in the area of Deccan is made up fine grained volcanic rock, basalt which is known as regur in local language.

Soil provides essential material on agriculture is based and therefore comprehensive survey of geography should be fairly through treatment of soil. Even at the beginning of his work on political geography Ratzel made statement of great significance and insight. "Jedar stat zin stuck menschheit" (every nation is bit of soil and humanity. Therefore no student of civilization cans efforts to forget even for an instant the crucial important soil.

EXISTING INFRASTRUCTURE:

The study of existing infrastructure is considered most essential for planning & development of a region. The infrastructure can be categorized into physical or basic infrastructure and the socio-economic infrastructure which help directly or indirectly in shopping the structure and type of economy of the region the availabilities of basic social amenities and services like education, medical facilities, potable drinking worker approach road, means of transport, power supply, post, telephone, market facilities which are considered a must for the soci-economic development and planning of other region have been in brief.

EDUCATION FACILITIES:

Education is regarded as one of the most important socio-economic progress of a region. The education facilities are very poor in this village. Pre primary schools (1-4th class) are available in virani up to 4th class students are going to study to pen. Because this village is situated on bill area nobody approaches road and transport like buses, taxi, and autorikshas

MEDICAL FACILITIES:

Medical facilities are considered as most important for health and happiness of people. It is observed that, this village is very poor regarding availabilities of medical facilities. Peoples are going to pen for their treatment.

POTABLE DRINKING WATER:

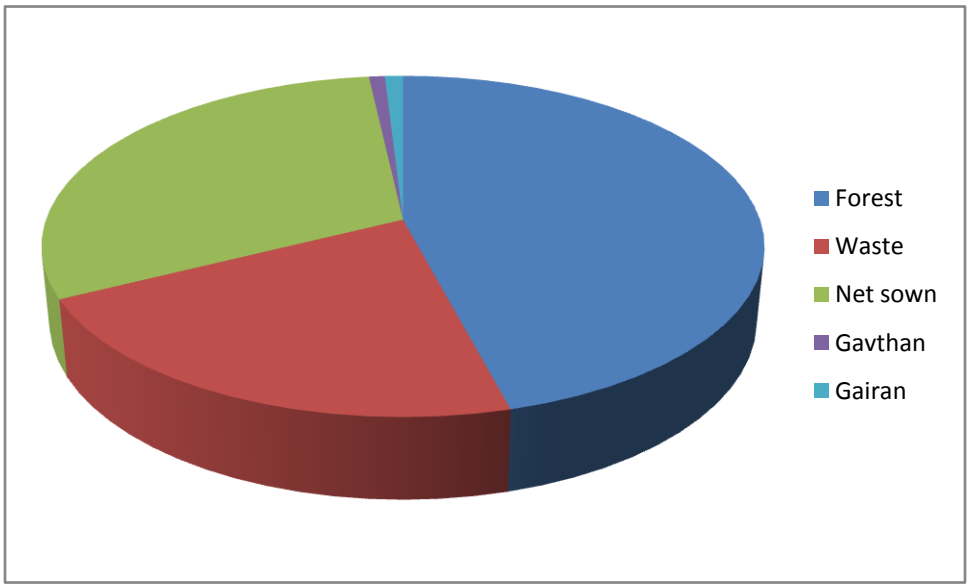
Drinking water is one of the most essential commodities for survival of mankind. Out of 122 inhabited rural settlement in the village virani. There are only 02 wells for their uses, tube well; hand pumps and other tanks are not observed in this village. Amount of rainfall is very high but nobody management of rain water.

LANDUSE PATTERN:

The land use pattern of a region con not the actual and specific use of land for which its surface area is put in term of use. They land use pattern of village Virani are studied.

Table No.5.11 Land use Pattern in virani village

Sr. No.	Land use	Area in hectare	% to total
1	Forest land	78	45.882
2	Waste land	37	21.765
3	Net sown area	52	30.588
4	Gavthan	1.40	0.823
5	Gairan	1.60	0.942
	Total	170	100



Graph no. 5.3 Land use Pattern in virani village

Source; Department of Agriculture, Pen

Above table revels that, more than half (67.64%) of the total geographical area could be put to some use and nearly half (32.36%) of the area is still lying in natural condition

The area under forest (45.88%) is very near to normal distribution. It is recommended that at least one third of the area should be under forest. Another 21.76% area is waste land under mountain and water bodies. Some 30.58% of land area is net sown. It is note that substantial changes have occurred in proportion of different classes of land during last two decade and there are wide regional differences in use of land. Low percent of agricultural land is observed in virani village. Because this village is located on hilly areas. Few farmers are working in agricultural sector. Most of people are going to pen centre place for the purpose of education, agriculture and others.

ELECTRIFICATION FACILITIES:

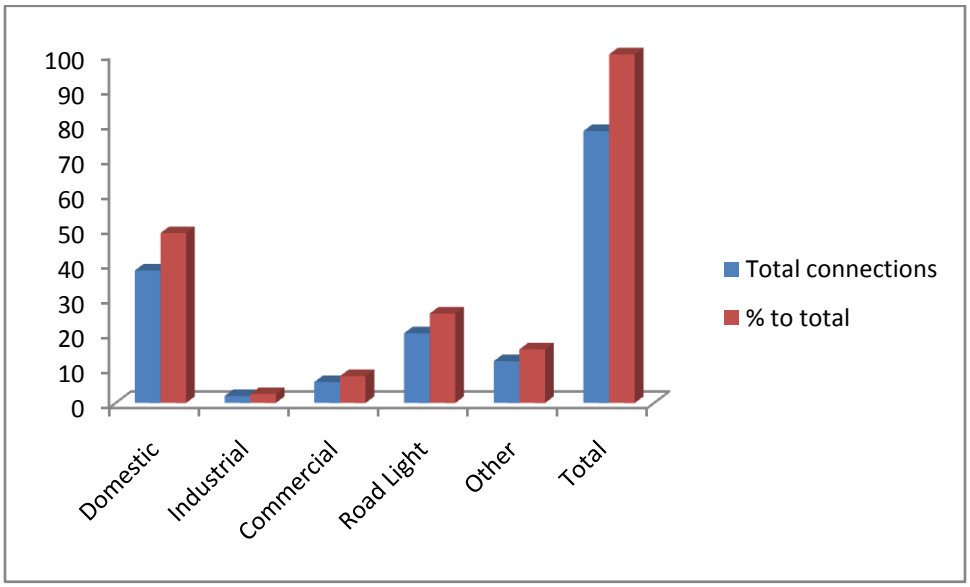
The process of development of the rural areas was slow, limited to only 66 villages that were electrified in first, second and third plan period. After the setup of regional Electricity corporation electrification in rural areas increased and up to the fifth plan period 1999 approximately 90 percent of the villages were electrified. Total no. of consumers in sample village is 78 out of which 48.72 % are domestic consumer and ranked first. Followed by agriculture consumer with 1.86 % in commercial and industrial sector 2.56 % respectively which is very low in the sample villages people are not able to avail.

Electricity facility due to poor economic condition so most of the consumers are beneficiaries of governments of electrification in the region is 18720 unit per month followed by 48.72% in domestic activities commercial sector consume 1.4 % share which is very low while in industrial sector the percentage of consumption is 15%.

Table No.5.12 Electrification in Virani village

	Domestic	Industrial	Commercial	Road Light	Other	Total
Total connections	38	02	06	20	12	78
% to total	48.72	2.56	7.69	25.65	15.38	100

Source: - MSEB Pen



Graph No.5.4 Electrification in Virani village

Above table shows that, total connection in Virani 78. Whereas 48.72% in domestics and 25.65% in road light used. But only 2.56% electricity in industrial sectors. It is clearly shows that electrification of this sample area is satisfied.

CURRENT CONDITION OF RURAL SETTLEMENT:

Total 122 rural settlements are here in which 50 inhabited settlements are constructed by government where as 93 houses are pucca and 29 houses are kachha. It is observed that, all settlements are found in scattered position.

POPULATION

Population growth in an area is the index of its economic development social awakening, cultural back ground, historical event & political ideology. The population of this village has increased from 468 in 1991 to 509 in 2001. This population is included of Khapshi, Khadkachi wadi, Gavthachi wadi and Dharmachi wadi. Because Virani village settlement is scattered.

Table No.5.13 Population status of Virani

Year	Male	Female	Total population
1981	206	212	418
1991	228	240	468
2001	258	251	509

Source: - Village directory, District census handbook of Raigad.

C) ATLWALI

Atiwali is situated in Kasu division of Pen tahsil. This village famous entire the Raigad district because it is surrounded by water by all directions. Number of forest area in northern part of village just like it seen as sand. In ancient period number of small sheep used for transportation;

Map No 4.3 Location Maps of Atlwali

CLIMATE:

The study climate is considered the most important because it affects the human life in various ways and has direct impact on agriculture as well as human Settlements. The change of seasons is regulated by the South West and North East monsoons. The temperature reaches up to 33° to 37°C during March to April months. The humidity is comparatively high. January is the coldest month of the year.

Table No.5.14 Mean annual temperature and rainfall

	Months											
	J	F	M	A	M	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Min	15	20	22	25	26	27	23	21	19	19	16	12
Max	22	24	26	32	45	30	20	24	23	20	20	18

Source: Compiled by author.

FOREST:

In Atiwali village is surrounded by the forest in this forest Tectona aradis, Terminatia tomentesa, Mamgrifera indica, Terminatia arjun bridelia retusa, cassia fistula, acacia monosperma, ficus bhengalensis and bambusa aroundinaces plant are found .

Department of social forest has planted the number of trees such as Acacia auriculiformis, Delenix regia, Park in Sonia aculeate, grevillea robusta (Silver ok) part had been planted in open space on the corner of road. The biodiversity is developed here.

AGRICULTURE:

Agriculture is the arts of cultivating, the soil including the allied pursuit of gathering in the crops and regarding livestock tillage husbandry and farming. Agriculture is the principal occupation of the majority of working for in any rural areas. But in the study area farming occupation is second. Lack of money and cultivable land it affects the development of agriculture. Only 22.23 hectored area under cultivated.

SOIL AND SLOPE:

Soil is one of the important major resources in a region. In the present study area which basically depends upon on agriculture. Soil contribution in major role in economic development. Most of the area is found in laterite alluvial soil. But the development of farming is very poor. The peoples are attracted towards other business. Number of people has migrated to all over India.

WATER RESOURCE:

Drinking water is one of the most essential commodities of survival of mankind. Out of total 150 inhabitated in rural settlements in the sample area. Only 20 wells, 340 taps, 2 Hand Pumps have potable water.

Table No.5.15 Source of Drinking Water

Sr. No.	Source	No.	% of water source
1	Wells	20	5.5
2	Taps	340	93.66
3	Percolation Tanks	01	0.27
4	Hand Pumps	02	0.55
	Total	363	100.00

LANDUSE PATTERN:

Land is one of the most important the basically source to a man and had a profound influence to the nature of civilization and the degree of their social, economic and technological advancement. The value of land changes time to time according to capabilities efficiency and ability of man to use it.

Land pattern of region connects the actual and specific use of land for which its surface area is put in term of use. The aim of the study each to suggest a proper land use for the land which otherwise has been put to some other use for which the same is unsuitable.

The land use of the Sample village studied into following heads.

Table No.5.16 Land use pattern of Atlwali (H)

Sr. No.	Land use	Area in Hectors
1	The area not available for cultivation	200
2	Cultivable land	112
3	Cultivated land	21
4	Area under forest	410
5	Cultivable Westland	96.00
6	Gaonthan	16.20
	Total area in hectors	855.2

Source: Department of Agriculture Pen

1) Area not available for cultivation:

The area under this category includes the areas which cannot be used for cultivation due to natural factors and cultural factors such as built-up land or settlement, road and canals. When we observed above table 23.38 % land is not available for cultivation out of total area.

2) Cultivable land:

The cultivable land is the land which is not presently used for cultivation but can be brought under cultivation after making efforts in the future. Out of total area (889 H) 112 hectors (13.09 %) land is cultivable.

3) Cultivated land

The category includes net areas sown and the current fallow it covers 21 hector (2.4 %) of the total area under the renewed villages.

4) Area under forest

The land use statistics indicate that only 47.9 % (410 H) of the total land is occupied by the Forest which is falling in southwest part of sample study area.

5) Cultivable land

Cultivable Westland is the land which can be effectively utilized for cultivation purpose but presently not being utilized for growing crops. The total land under this category is computed as 96 H. (11.22%) of the total Dadar Village.

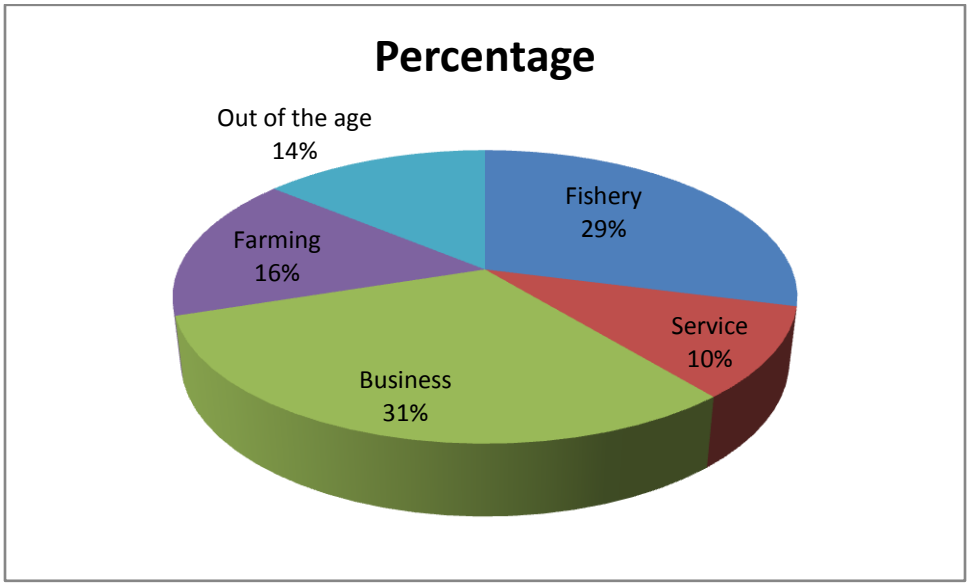
OTHER OCCUPATIONS:

Occupation refers to the personal trade or profession or the type of work in which they are engaged. Number of people engaged in fishery industry (28%), only 08% public government

and the non-government service, 30% in business, 15% farming and 10% of people are less than 14 years and out of age.

Table No.5.17 Occupational Structure of the Atlwali

Sr. No.	Occupation	Percentage
1	Fishery	29
2	Service	10
3	Business	31
4	Farming	16
5	Out of the age	14



Graph No.5.5 Occupational Structure of the Atlwali

CURRENT CONDITION IN A RURAL SETTLEMENT:

In order to improve the living conditions of the people in a rural settlement it is important to be familiar with the current condition the constant and improving them and the current and potential resource and a process which can be used them. Most are developing country is characterized by a pattern of settlement that includes one or several large cities but in a rural area

thousands or thousands of smaller settlement found in a rural Pen area. Total population of village is 4259 in 2001 census.

POPULATION:

Table No.5.18 Growth of Population at Atlwali

Year	Population	Male	Female
1991	4627	2480	2147
2001	4176	2161	2015

Source: Village Profile, Atlwali

Above table clearly shows that, the growth of population is decreased by 780. Where male 400 and female 380 are also decreased. Because number of people had been migrated to Mumbai and Poona for their economic that conditions and get the good job. Nobody SC and ST peoples are living in Atiwali Village.

Table No.5.19 Population with Household in Atiwali Village

Year	Population	Household	Volume of changing number
1991	3672	911	-
2001	4176	1130	219

Source: Socio-economic abstract Raigad.

Above table reveals that growth of population and total households in 1991 to 2001 are discussed. All households are located in 1991, whereas 1130 households in 2001. It is clearly shows that, the households are increased during the study period.

CONCLUSION

After the case study of Atlwali village I had been concluded on following,

1) The inhabited rural settlement of Atlwali is scattered pattern.
2) Existing infrastructure are very poor.
3) Numbers of inhabited tribal communities are located in Atlwali.
4) Most of the peoples are very poor.

CONCLUSION

Chapter VI

CONCLUSION

Settlement geographically is one of the recent branches of human geography in the 20th century. Settlement is the symbol of man's occurrence of land and serves as the link between the man an environment settlement is defined as the place where one person or more dwells regularly or the act of establishing a permanent residence.

India is the country of villages where nearly 75 percent population lives in the rural areas. The rural settlements in India show a dominance of social, cultural and economic factors in the development from and ancient period. After the study I have been concluded the following way the topographic of any region plays an important role in influencing its past history but also the climate, land use, means of transportation, distribution of settlement and distribution of population. It is of the order that out of total study region nearly 13.5 percent area covers mountain spurs and hilly which comprises nearly 11.8 percent of rural settlement the area which is lies between 900 to 1100 m in highest occupies 26.1 percent of the total rural settlements. The height is below 700 m from meanness sea level occupies nearly 36.1% of the total area comprises nearly 28.2 percent of the rural settlement.

Drainage density is observed that nearly 33% area of the study region has an arrange less than 0.5 Km. drainage density and it comprises nearly 16.4% of total rural settlements. The drainage density is found above 1 km per sq.km. Occupies an area nearly 13.9 percent of the total and comprise 14.5 percent of the total rural settlements. It is observed that the drainage density between 0.5 to 1 km. per sq. km. The number of settlements is found more i.e. 69.1 percent.

Forests are most important resource in the study region nearly 9% of the land is covered by forest. Most of the study region is covered with monsoonal type of trees. Many factors which affects on the density of rural population i.e. physical, social, economic and agricultural the study region. It is observed that in the hilly areas population density is low i.e. below 200 persons per sq. km. It occupies 46.9% of the total area and comprises nearly 43.7% of the total rural settlement. The river basin region which is plain and fertile, where a density population is above 600 persons per sq. km. And occupies nearly 6.9% total area and comprises 11.8 percent of the total rural settlement. In short, it is observed that hilly region having low population density, because the development of agriculture, transportation fertilizes and marketing facilities are found less.

Agriculture plays an important role in the development of man and huge economic conditions in the study region. It is observed that, well irrigation facilities developed, fertility of soil has occurred and modern tools and techniques are used agriculture the kind under agriculture is more western side of the study region, where agriculture density is found 40 to 60% and above 60% per sq. km. Occupies area is about 8.7% and 6.8% of the total and comprises nearly 9.1% and 8.2 % of the total rural settlement.

It is a well known fact that water is an essential element for maintaining life on the surface of the earth. It is equally needed for man, animals and plants. It is observed that southern part of study region, where irrigation density is found more developed as compared northern Part of the study region. Northern part of the study region where the percentage of land under irrigation is found 10 to 15% and above is percent occupies an area is about 22.8 percent and 17.3 percent of the total respectively and comprises nearly 21.8 and 18.2 percent of the total rural settlements respectively.

The physiographic of the region plays an important role in the development of roads in the study region. Nearly all settlements of the study region and linked up with one another by crude paths medaled and a medaled roads. Media strip of the study region very density of road is found more i.e. above 1 km per sq. km. It occupies nearly 8.7 percent of the total area and comprises nearly 9.1% of rural settlements. The density between 0.5 to 1 km per sq. km is found in Northern and middle part of the study region where towns are located. It occupies an area about 29.5 percent of the total and comprises nearly 31.8% of the total rural settlements.

There are many factors which influences on the distribution of the rural settlements such as cultural historical and topographical. In order to study the special pattern of rural settlements, the nearest neighbor method has been used to analyze the nature of distribution of rural settlements. The middle and southern part of the study region have been covered 61.8 percent of the total area and accounts for 62.7 percentages of the total settlements have clustered type of pattern. The Northern and some middle patches of the study area covers 27.8 percent of the total and 14.6 per cent of the total settlements have random type.

The dynamic of rural population growth is related to various geography factors and changing economic conditions. It is observed that the growth pattern clearly indicates that the area which is agriculturally developed and economically prosperous indicate more growth rate of rural population. In general it is observed that the size of rural settlement is the large in the central part of the study region. The northern and eastern bond of the region is hilly and rugged so the size of rural settlement is found small as compared to other part of the study area.

In the study region it is of the order that they the changing growth of rural settlements and population in the decade 1981 and 1991. The minimum growth rate 1981 to 1991. Above

60% growth rate of population is observed that the minus growth rate of population. In general it is observed that the size of rural settlement is the large. In the central part of the study region the northern and eastern and eastern boundary of the region is hilly and rugged. So the size of rural settlements found small as compared to other part of the study area.

In the study region, it is observed that there is the changing growth of rural settlements and population in the decade 1991 and 2001. The minus growth rate of population up to -25% is observed in villages for the decade 1991 to 2001. Above 75% growth rate of population is observed in 16 villages. In general, it is observed that minus growth rate of corporation is found in North on a part of the study region and growth rate of 25-50 and 0-75 percent is found western and southern part of the villages.

The growth of rural population in the study region is found 18.3 percent in the decade 1991 while considering this population growth rate, population of Pen Taluka is reached near to 176681 in 2001. Generally, it is observed that in the hilly and mountainous areas population density is low, where the density of population is high area having fertile soil, irrigation facilities and transportation facilities found more western and middle part of the study region. Where population density is high as compared to eastern part of the study region. Agricultural and physiological density is also found high in the Western part of the study region, where population density is also high.

Literacy structure is one of the most important induction of the social development according to 1991 census nearly 52.12 percent of the total population is a literate. In the decade 2001 literacy rates shows increase i.e. 69.43 percent population of the total literate occupation indicates the earners nature of work. It is observed that out of total population 68.8% population

is engaged in agriculture and 2.2% and 20.5 percent workers engaged in trade and commerce and marginal activities respectively.

The distribution of scheduled caste and scheduled tribe population has been studied. It is of the observed that in the decade 1991 10.7 percent population was scheduled caste population while only 1% was scheduled tribe population of the total population in the study region. Rural settlements are affected by many factors, such as physical, social, historical and economic. For basic pattern is for rural settlements have been observed in the study area they are

1) Compact settlements
2) Linear
3) Disperse (Scattered)

Tribal rural settlements are most, they found on the margins of spurs or in the small *nalas*. Disperse settlements include furnished homestead and *wadi* settlements. The composite types of settlements have one main one single village attached with two to five small hamlets. The compact settlements are normally found in the plain, fertile agricultural regions.

In the study region, square pattern, elongated pattern, circular pattern, irregular pattern, linear pattern, amorphous patterns and shapeless agglomeration pattern has been found. It is observed that the compact and composite types of rural settlements show one idea of pattern of villages.

Rural settlement as a cultural bearing unshared made of the region of their civilization originate develop and spread into the whole sphere of human life. The rural service centre is defined as place which supplies the social, economic and restrictive needs of the people of the service area. It is observed that the considering the centrality score the rural service centre is

central part of Pen having highest magnitude of functions and regional importance and serves the entire study area. CASP is second ordered rural service centre in the study area, it provides educational, retail and wholesale trades, health services and important market centre. The third order includes three rural service centers and the last hierarchic order i.e. forth category in which 15 rural service centers are included. They provided a lower order services and functions and serve very few village of the surrounding region. It is necessary be provided rural facilities to the general population by the government like water, light, road, houses.

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सर्वेक्षण प्रश्नपत्रिका

१) गावाचे नांव :- .....

२) गावाचे सापेक्ष स्थान :- .....

३) गावाचे एकूण क्षेत्र :- .....

४) गावाचा आकार :- .....

५) गावाची नैसर्गिक सुंदरता :- .....

६) गावाचे वैशिष्ट्य :- .....

७) भूपृष्ठरचना :- पठारी / मैदानी / डोंगराळ

८) गावाची एकूण लोकसंख्या :- .....

९) एकूण स्त्री व पूरुष :- .....

१०) एकूण घरांची संख्या :- .....

११) कच्ची घरे :- .....

१२) पक्की घरे :- .....

१३) घरे बांधण्यासाठी वापरलेली साधने

१) .....

२) .....

३) .....

१४) घरांचा आकार :- .....

१५) घरांच्या रचनेचे कारण :- .....

१६) शेतीसाठी पाणी पूरवठा कोणत्या प्रकारे :- .....

१७) गावातील लोकांचे व्यवसाय

१) शेती व्यवसाय

२) मासेमारी

३) इतर प्राथमिक व्यवसाय .....

१८) गावातील उद्योगधंदे :- .....

.....

१९) गावात/ गावाच्या शेजारी असणारे कारखाने :- .....

२०) भूमी उपयोजन (क्षेत्रफळ लिहा)

१) जंगलव्याप्त क्षेत्र .....

२) पिकाखालील क्षेत्र .....

३) पडीक जमीन .....

४) गावठाण .....

५) गायरान.....

६) इतर .....

२१) गावातील प्राथमिक सेवा सुविधा :-

१) पाणी पूरवठ्याची साधने .....

२) गावातील शैक्षणिक सुविधा .....

३) गावातील आरोग्य सुविधा .....

४) पोष्ट ऑफीसची सुविधा .....

५) गावातील वित्त पूरवठा (किती तास) .....

६) सार्वजनिक संडास व्यवस्था आहे का? .....

७) सार्वजनिक मुतारी व्यवस्था आहे का? .....

२२) गावातील गटारींची व्यवस्था .....

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२३) गावात घेतले जाणारे विकास कार्यक्रम .....

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२४) गावातील वहातूक व्यवस्था .....

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२५) गावातील रस्त्यांची स्थिती .....

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२६) आपल्या मते गावाची सद्य स्थिती .....

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२७) गावचा विकास होण्यासाठी कोणते उपाय योजले पाहिजे.....

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२८) गावचा विकास होण्यासाठी कोणत्या उद्योगधंद्याचा विकास केला पाहिजे .....

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