CHAPTER I

APPRAISAL OF THE PROBLEM

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CHAPTER – I

APPRAISAL OF THE PROBLEM

1.1 INTRODUCTION :-

Settlements are visual imprints made by man upon the cultural landscape in the process of occupancy. These imprints vary from one culture to another according to the physico – cultural setting and man’s ability to change the natural features. Shelter is one of the most important basic necessities of human beings. For shelter he selects tree branches, caves or rock cut hiding places. These shelter places become the most concrete expressions of human cultural activity and assume various forms as well as names. Houses, dwellings, group of houses or dwellings, abodes, habitations these all form human habitat or more specifically settlements. With the establishment of dwellings the foundation of a civilization is laid to grows, develops and spreads in all directions in the form of habitations. These become the concrete expressions of anthropogenic and later on technogenic adaptations of human beings. The universality of houses and their groupings in the form of settlements exhibit variations in size, shape, pattern and types as well as multi distributional aspects these all being the subject matter of systematic study.

Settlements as an occupancy unit which represents an organized colony of human beings including the houses in which they live or work or store or use them and the tracks or streets over which their movement take place. As it is a culture element, in the initial stage settlement features bear simpler forms and relationship with the environment, but with the growth of knowledge and civilization, the degree of variability in the size and form and of complexity is their interrelationship becomes increasingly greater. This needs, for the perfection of any study, the understanding of the concerned surrounding environment as a whole. The study of a single most settlement with its worn niche in the habitat and
as a subsystem of a system both becomes essential. The unit of settlement, however may range from a slum dwelling in shanty town, a herder’s hut, a farm or a tribal’s homestead up to ecumenopolis. So, any settlement can be studied in either a world or a regional context; but any settlement, if it is to be adequately appreciated, must be correlated with other facets of geography, e.g. relief, climate, geology and social, cultural and economic conditions.

This cultural landscape reflects the mode of living of the people who built them. The character and layout of buildings and roads, field and properties and the arrangement of structures used for business, worship and recreation varies according to place and time as well as to their tradition needs, technical knowledge and change in transport technology.

During man’s adaptation with the environment, man came in close contact with various environmental features and his reaction or adaptation brought forth change in his physical landscape. These changes are identified as cultural landscape and present man’s relation to man and the earth. The author agrees with the American philosopher who philosophizes over geography, that “more than an inventory of man and things, geography, at heart is a concern to depict man’s relation to man upon the earth, although earth were his home”. In a geographer’s words: “It is a way of understanding man in a matrix of human and physical relationship and interrelationship”. These interrelationships are best expressed through the settlements, which are concrete expression of human occupance of the earth surface.

Settlement geography, being an offshoot of social geography or a recent sprout from the venerable trunk of human geography, was mainly concerned with urban settlements before the turn of the twentieth century. But since two third of the world population and about 98 percent of the total settlements occupy rural areas, many historians, sociologists and geographers have studied rural settlements
as well as the problems attached with environmental aspects in rural areas. So, a comprehensive study of settlements requires explanation of site and situation, building materials, forms, functions, types and patterns and characteristics. Of these, site and situation and material need full interpretation of physical, environmental aspects and cultural linkages while morphology requires in depth study ofsequent occupancy involving historical background of the unit of occupancy as well as the man – the occupant. Regional variations and spatial patterns present significant subject matter for analyzing the sequence of change.

1.2 IMPORTANCE OF RURAL SETTLEMENTS :-

Rural settlement geography has gained independent status in the recent years. It deals with the process of human occupancy of land, its arrangement and grouping in the context of physical, social, cultural and economic conditions of the area. The villages and village life of a country are the real and true representatives to the civilization and culture of that country and economic, social and political orders of the country depends on the villages. Village economy is mainly based on agricultural production or primary occupations. The rural life is simpler than the urban life and it has its own importance and it has its own problems. The problems of rural settlements have emerged as one of the most challenging issues particularly in the under-developed countries of the world. About 65 percent of the world’s population still lives in rural areas. India is predominantly a country of villages. Majority of her people live in the countryside. Rural settlements in India accounting for 74 percent population. The study of rural settlement in India should be given prime importance. It was on account of this fact that the thinkers, philosophers, planners, social reformers, administrators began to take interest in villages or rural settlements. Rural settlement means a rural space occupied by the rural community with their economic, social and cultural environment. This
environment influences the entire rural way of life. Geographers look at the rural settlements as agglomeration of man made habitat on the earth, dependent mostly on primary occupations.

1.3 APPROACHES TO THE STUDY OF RURAL SETTLEMENT GEOGRAPHY :-

The themes proposed for international symposium held at Varanasi 1971 outlined comprehensive subject matter and approaches to the study of rural settlement geography as follows.

Subject Matter :-

1. Evolution of rural settlements.
2. Histogenesis of rural settlements and settlement patterns.
3. Basic regional types and patterns of rural settlements.
4. Morphogenesis of rural settlements.
5. Functional pattern of rural settlements.
6. Rural building material and house types.
7. Village studies
8. Planning and rationalization of rural settlements.

Approaches :-

The two popular methods of approaches to geography as explained by Hartshorne are : I. :- Systematic or topical and II :- Regional. Settlements have been studied in various proportions through these approaches. Rural settlements have mostly been studied systematically at micro level – village and hamlets – along with their occupancy, setting, morphology, size, shape and functions, etc. The second approach to study settlement of region as a whole comprising their
histogenesis, morphogenesis, spread, distribution, pattern and types, characteristics and comparative distinctiveness and regional variations.

With a view to having comprehensive understanding of the settlements, various strategies, frameworks and approaches have been provided by geographers. With considering elements co-jointly from the optimization of the quality of man's relationship with the environment, one can apply three basic approaches supplemented by better developed quantitative techniques:

1. Genetic Approach or functional approach :-

As the basic concern of settlement geography is the spatial arrangement and sequent occupancy, the histogenetic approach is most appropriate for studying—

i. the degree of continuity of territorial organization and

ii. problems of interaction between man and environment.

At micro level, i.e. occupancy unit being a homestead, hamlet during initial stage and also while grown up into a full fledged settlement, this approach helps in reaching the comprehensive understanding of individual characteristics in relation to the surrounding subsystem. This also includes three basic methods followed by various geographers:

A. Retrogressive approach advocated by Bloch focuses upon the past on the basis of evidences gathered from the recent past.

B. Retrospective approach advocated by Roger Dion focuses upon the present, the past conditions regarding settlement being considered for better understanding of the existing state.
C. Prospective approach focuses upon the future, past and present cultural landscape being regarded as relict features projecting towards adjustment with future needs.

These approaches are complementary to each other and can be fruitfully applied to understand the spatio – temporal dimension of settlements as well as their prospective planning in the environment concerned.

2. Spatial Approach :-

Spatial organization approach is a form of system approach, which helps in comprehending the settlement as a whole. Considering this method of approach, spatial organization may be analyzed through different concepts, among which very pertinent in rural settlement geography are;

a. Type, pattern and classification.
b. Functional integration and hierarchy.
c. Local identity or village structure.
d. Planning and rationalization.

Spatial organization studies include the varied literature produced on the basis of the central place theory denoting hierarchy and rank size in relation to any environmental space. Damengeon actually developed the concept of spatial organization in context to morphological structure. He presented the classification of French grouped settlements into different types according to shape, principal distributional patterns of rural houses, regional classification or rural settlement types, etc. Modern geographers are following him in the study of settlements through the analysis of patterns and process as they express the spatial organization in environmental space. Through this approach the interrelationship of man, nature and society is better expressed in any cultural landscape.
3. Ecological Approach :-

The ecological – cultural approach finds its strength through the study of plant ecologists. Plant ecology theories are being applied to explain the process of change in human behaviour and settlement over time. A fundamental work was produced by Radha Kamal Mukharjee regarding adaptation of human society and ecology in his "Man and His Habitation : A study in Social Ecology" (Longmans Green and Co., London, 1940). The settling process as described by Hudson includes three phases – colonization, spread and competition. – similar to plant communities in space. How people adapt their available ecological habitat finds explanation in the settlements and life patterns of tribal communities. New studies are coming up regarding impact of dam sites, port sites, resorts and change in ecology in newly settled areas. Such studies at micro level would help in many ways and in proper geographization of ecological forecasts.

Various statistical and mathematical techniques have been applied in all approaches by a geographer, specially after the quantitative revolution. Geography, being an integrating science, a settlement geographer must have understanding of being a historian, cartographer, artist, sociologist, mathematician and an environmentalist. The essence of this work is data collection, field survey, mapping, interpretation, explanation of facts by using qualitative methods as well as quantitative techniques.

1.4 RURAL – URBAN DICOTOY :-

The rural and urban are relative terms having varied meanings in relation to the type of population and mode of life of people of a settlement. Censuses of various countries use these terms according to their own convenience and density pattern. A combination of criteria distinguish rural from urban, be it hamlet, village, town or city. Ambiguity remains in searching out the demarcation line
breaking the rural – urban continuum, particularly in developing countries. Urban settlements are nodal in character having centers of secondary, tertiary activities and production. Moreover they perform functions of a political, educational, social and religious character. Rural settlements on the other hand are chiefly concerned with primary production, be it agriculture, fishery, mining, forestry, etc.

The census of India has more specifically defined the urban and rural settlements on the basis of the following criteria;

For any place to be recognized as an urban area it has to have a municipal corporation or a municipal council or a cantonment board. If it did not have any of these local bodies to administer its affairs, the following empirical tests were applied.

1. A minimum population of 5000.
2. A density of population not less than 400 per km²
3. 75 percent of the male working population, pursuing occupations falling outside agriculture.
4. The place should have, according to the director of census operations of the state, a few pronounced urban characteristics and amenities.

All other settlements, which do not satisfy these conditions are rural settlements.

Rural settlements show the impact of natural environment more directly and clearly. Although urban and rural settlements form two important wings of settlement geography, the problem and the methods of their analysis are distinctly different. Urban geography has received more attention but the study of rural settlements, by systematic and scientific analysis is still in the initial stage.
1.5 GROWTH OF SETTLEMENT STUDIES IN INDIA :-


As referred to earlier, the lion’s share for the growth of rural settlement geography, particularly, goes to R.L. Singh who produced inter alia, famous articles on “Evolution of Settlements in the Middle Ganga Valley” (N.G.J.I., Vol. I, Part II, 1955) and “Typical Rural Dwellings in the Inland of Banaras, India” (N.G.J.I. Vol. III, Part II, 1957). A.N. Bhattacharya, through his *Rural Habitations in the Upper Ganga Plain and Son Valley* (unpublished thesis, Agra University,


M.N. Vasantha Devi (1962) described house types of Edakhad village; and V. Vidyanath (1962) presented the historical background of circular house types in islands of Kolleru lake in Andhra Pradesh. Likewise, T.Singh (1965) described in
detail the house types of Kurali village in the upper Ganga – Yamuna Doab; G. Krishan delimited the umland of Chandigarh (1963); S.N.P. Jaiswal worked on Bindki (1963); and R.D. Dikshit described the classification of rural house types of Dehra Dun Valley in Uttar Pradesh (1965). Contemporary writings were by A. Ahmad on civilization of Indian deserts (1965), S.K. Munshi on Chiria in Singhbhum district of Bihar (1965), and S.S. Pandey (1965) on deserted villages of Vidarbha as well as on terminology and toponymy. A.B. Mukerji (1964) described the pre – Reddi landscape of Telangana. In 1965, S.N. Raifullah wrote a monograph on the geography of transhumance. During the sixties, there were some more contributions published in the National Geographical Journal of India, Varanasi, e.g. “Meaning, Objectives and Scope of Settlement Geography” (1961) by R.L. Singh, “Ancient Bhars and Their Ruined Settlements in Ganga – Ghaghara Doab – West” (1962) by S.M. Singh, also by the same author on “The Stability Theory of Rural Central Place Development” (1965) and on “Turrufa Babhnauti and Raotor in the Ganga – Ghaghara Doab – West : A Study in Land Settlement, Social Geography and Rural Central Places” (1965); “Human Dwellings in Sonpar Region (Uttar Pradesh) : A Geographical Analysis” (1969) by S.N. Mishra; and “Rural Settlement Types and Their Distribution : Examples from Varanasi District, India” (1969) by R.B. Singh.

Besides the pioneer works by Enayat Ahmad and Buschmann, a few more doctoral theses were presented for award of degree in various universities as follows : “Distribution of Population and Settlement in the Ganga Plains of U.P.” (1953) by N.P. Saxena; Ranchi Plateau : Geomorphology and Settlements” (1958) by P. Verma from Allahabad University; “Regional Economy and Settlement Patterns in East Rajasthan” (1960) by Nityanand; “Types of Human Settlements in Vindiya Pradesh” (1960) by L.N. Verma, “Malwa Plateau : A Study in Human Geography” (1965) by R.K. Nigam from Agra University; “Murshidabad : A

G.S. Gosul and A. B. Mukerjee have taken stock of the various aspects of the progress in rural settlement geography through their reviews for a period of seven years from 1969 to 1975. Since then continuous efforts made towards the advancement of this branch added some significant contributions as named below.

1.6 REVIEW OF LITERATURE :-

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 processes, growth, configuration, problems and implications of development of rural settlements in developing countries like India is still very limited. In our country the credit for introducing this branch of geography goes to Prof. E. Ahmad, Prof. A.B. Mukerji, 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 one inch topographical maps. The author has described various physical and cultural factors, which are responsible for various types and patterns of rural settlements in the study area.

A.B. Mukerjee (1953) : Studied Jat Settlements and Habitations and made valuable contribution in this field. He has also worked on Moradabad and Bijnor districts. He has described growth and distribution of rural settlements, and explained the various types and patterns and given suggestions for the development of rural landscape of the region.

M. Anas (1954) : In his study of The Pattern of Rural Settlements in the Sub-Himalayan Region, discussed in detail the various patterns of rural settlements.

R.L. Singh (1961) : Studied “Evolution of Settlements in the Middle Ganga Valley” and provided guidelines to investigators in this field. He has explained the meaning, objectives and scope of rural settlement geography. Author has described origin, growth, distribution and morphology of rural settlements as well as rural house types in the study region. This becomes a significant study of rural settlements, which inspired many students of geography in this branch.

N.D. Bhattacharya (1965) : In his Ph.D. Thesis on “Evolution of Settlements in the district of Murshidabad, West Bengal” and paper on same subject has tried to explain in detail the evolution, 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 evolution, growth and distribution of rural settlements. He further discussed the socio-economic conditions of villagers, population composition, spacing of rural settlements and physical - cultural elements are dominating factors for the development of rural settlements.

A. Prasad (1969): Has made detail study of "Rural Settlements of Chotanagpur" and has explained in detail their evolution, types and spatial distribution. He has also nicely correlated physical landscape with various aspects of settlements.

R.C. Sharma (1969): Studied settlement geography of the Indian desert. The entire study is divided into ten chapters. His approach of study was basically functional and he tried to show how settlement has evolved as an adjustment to the arid environment i.e. in the Indian desert (Rajasthan area), which lies west of the Aravalli ranges of India and covers 6.7 per cent of the total area of the country. His findings are based on observations of landscape and are checked by number of quantitative methods, using census data, unpublished records and fieldwork study. This study is a regional account of the mutual connections between environment and settlement. First two chapters were devoted to describe the nature and appearance of an arid landscape, geology, physiography, climatic condition particularly precipitation, wind velocity and direction and various climatic sub-regions of the study area. Second chapter deals with economic background of the region such as agriculture animal husbandry, minerals, industries and means of transport and communications and how they influence the location, growth, regional distribution, morphology and nature of settlements. Fourth chapter includes the demographic analysis of the population, while fifth chapter shows the evolution, growth, nature of regional dispersal of settlements and correlations are
made with the water table, spread of sand, regional variation of rainfall and economy. Sixth chapter deals with types of human settlements. Types are based on nature of function, location of settlements and size (population) of settlements. Toponomy is described and shows that physical and cultural elements influenced on place names in the region. Seventh and eighth chapter deals with rural and urban settlements of the area respectively. Growth of rural settlements, evolution in different period, regional distribution, population growth morphology, types and patterns, nucleation and dispersion aspects are studied in rural settlement section while in urban settlement section, growth trend, size, functions, morphology, landuse, central services centers are explained. Ninth chapter includes house types in the region. Climate and socio-economic factors assessed while studying the various types of houses. Houses are classified on the basis of building material, nature of wall material and roof material, size and structure of the houses. In the last chapter he has studied the hierarchy of settlement and various growth or service centers of the study area.

The methodology that he has adopted was included various techniques as follows.
2. Spearman’s Rank Order Correlation formula –

\[ r_s = 1 - \frac{\sigma \times \sum d^2}{n^3 - n} \]

For regression line the following equation was used –

\[ a - \bar{a} = r \left( \frac{a}{\bar{b}} \right) - (b - \bar{b}) \]
3. For intervening distance analysis –

\[ = 2 \left( \frac{\cos 30}{3} \right) x \left( \frac{\text{Area}}{\text{No. of villages}} \right)^{1/2} - \text{(constant)} + \frac{\text{Log arebility}}{2} \]

4. For analyzing distribution and settlement pattern:

\[ \text{Chi-square (} \chi^2) = \sum \frac{(O - E)^2}{E} \]

The conclusions of his study was that the physical and cultural factors affects the distribution of settlements particularly he argued that Rajasthan could be described very much in terms of environmental determinism. During the various historical period settlements are greatly influenced and consequently changed their size form and functions. He has observed some problems like water scarcity, industrial backwardness, lack of social amenities and transportation, communication facilities. He suggested some measures such as for the industrial development capital, skills, fuel and power should be provided, transportation network should be expanded. Government aided public utility services should be improved and provided efficiently. Various developmental and improvement programmes should be implemented.

This is an exhaustive research work at regional level and useful to analyse the regional variation in the settlements.

**J.P. Sharma (1975)**: Studied rural dwellings and house types in the Himalayan Ravi – Chenab interfuse. He observed that, the physico – economic and socio – cultural conditions in the region have determined the site, plan, shape, size,
building material, roof type and style of construction of rural houses to a great extent. The arrangement of rooms put to different uses in a house also reflects the influence of geographical factors. He has divided study region into four types namely, the Basohli type, the Bhardwahi type, the Chemibali and the Gaddiala type. Among the physical factor topography or configuration, climate, natural vegetation, water and the socio–cultural factors i.e. caste system, agricultural pattern, religions significance plays and important role and influences the houses resulting in various types. One the basis of the materials of wall, materials of roof, number of storeys, arrangement of rooms and general look of houses, he has classified houses in four types and described in detail the different regions of the area under study. He concluded that influence of above factors on rural dwelling in the Himalyan Ravi–Chenab Interfluve is very clearly seen. The plan, shape, size, building material, style of construction and type of roof of houses all correspond to the physio–economic and socio–cultural conditions of the region. Regional variations in these conditions have resulted in regional variations in house characteristics. This study is a very good example of the house types are the result of various physical and cultural elements of a particular region.

V.N.P. Sinha (1976) : In his study of “Chhota Nagpur Plateau : A Study in Settlement Geography” analyses and interprets the growth, pattern, types of rural settlements. A special emphasis has been placed on the geographical conditions determining evolution, distribution, morphology and functional character of the rural settlements. He also analysed economic and social conditions, which have influenced typology of rural settlements and rural dwellings. He has collected data from census, government publications and field investigation. Systematic approach has been followed for the study. Choropleth method was used for mapping the data. Rural settlement types and patterns are studied in detail by using one inch topographical sheets. He has concluded that effect of topography
and socio-economic factors quite clear in the case of house types, building materials, settlement types and patterns in the study region.

Paul J. Cloke (1983) : Studied the changes in rural settlements in England and Wales. He has assessed the various changes during the 1961 to 1981, with using the census data recorded at the rural district level. He has explained that the constant dynamism taking place in the countryside and the resultant fluctuations both in the nature of settlements and communities in their demands as well as requirements. For the recognition of social, economic and environmental problems of rural areas, the changes in various aspects such as population growth, labour force, working population and mobility he has studied. He has concluded that decadal growth in personal mobility towards the urban areas. He has also observed that decrease in agricultural labour requirements due to establishment of an oil dependent, mechanized and intensive system of farming in rural areas, so the shrinkage of jobs, the life style of agricultural workers was characterized low wages, long working hours, an isolated and basic way of life and a general lack of prospects. He classified rural settlements as rural settlements in remote areas and in dormitory areas and suggested certain planning aspects for the development of rural settlements of the study region.

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 relative location of rural settlement in a spatial context as well as to show the impact of one settlement on other during 1951 – 81 and space, she has been used the nearest neighbour technique with following formula.

\[ R = 2d \cdot \sqrt[3]{\frac{N}{A}} \]

where \( R \) = Nearest Neighbour Index

\( d \) = mean distance of a center from its nearest neighbour
N = Number of settlements
A = Area under consideration

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

\[ P_{ix} = \sum_{j=1}^{N} \frac{M_j}{d_{ij}} \]

where \( P_{ix} \) = Population potential of \( i^{th} \) centre exclusive of the center itself
\( M_j \) = Population of \( j \)
\( D_{ij} \) = Distance between \( i \) and \( j \) in Km.

She found that in Nearest Neighbour Analysis 'R' value of various talukas of study area varied between 1.23 and 1.54. By these values it is clear that since 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 environmental conditions gave rise to pattern towards uniformity, while clustering takes place where these 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 a settlement is surround with large settlements and distance between them is small.

The author concluded that mathematical model of Nearest Neighbour Analysis and population potential surface are helpful techniques in understanding the overall spatial pattern or structure of the settlements. The analysis of population potential and of density residuals indirectly indicate the areas of accessibility, flow of people and commodity and hierarchical systems of settlements of an area.
Haushila Prasad (1986) : Studied physical environment and settlements in Mussorie Region. His basic concept of study was based on that the settlements can be considered as one of the most prominent compromise of all the physical and human factors in the area. Author considered that, environmental factors for the delineation of the region or its parts has to be modified and adjusted in order to coincide with the revenue village units. He collected the data on the basis of revenue villages. He has used correlation technique to show that how settlements are distributed in the association of altitudinal zones, relative relief, dissection index, slope, drainage density of the region. He has concluded that the variation in the morphometric attributes of the Mussorie region has been enormous, which has catered a settlement density ranging from below 1 to about 4 per Km². He further concluded that favourable conditions at a high absolute relief becomes the focus for human settlements, where the slope is gentler, dissection index is moderate, relative relief is moderate to moderate high, drainage density is moderate to moderate fine and drainage frequency is low to medium. This study is helpful in identifying the various physical morphological zones in the region, which can possibly be useful to find out the density and distribution of settlement in the study region.

Ambubai Desai and K.M. Kulkarni (1988) : Studied four tribal villages of North Gujarat as a part of the pilot project sponsored by the Department of Environment, Government of India, reveals the nature of economic status and economic interaction in the villages. Their study area was hilly, forested and tribal tract of Gujarat state adjoining Rajasthan state. They have used secondary data in the initial stage, collected from various sources and conducted sample survey, including field observations, field discussions and a house hold questionnaire schedule. They have explained socio – economic condition, agricultural landuse pattern and demographic characteristics of the villages. Their findings are, such as,
there are distinct patterns of demographic, social and economical characteristics of the sample households by micro - geographical regions. Though these tribal villagers do live to some extent under environmental influence, population growth, economic contacts with the outer world, literacy and planned inputs have and are influencing their life and living pattern. Such types of case studies are important to understand the village life at micro level.

S.C. Singh and S.B. Singh (1988) : Studied settlements distribution and their correlation with morphometric attributes in Simla hills. Their study reveals that there are some stretches which are not suitable for the growth of settlements which corresponds with the areas of steep slopes and high relief (480 – 840 meters). Their fundamental base of analysis was, the process of settlement and its spatial patterns are associated with geomorphological attributes of the region i.e. physical environment and their influence on the distribution of settlements is more than other factors. For the qualitative and quantitative analysis of settlement distribution, they have used correlation technique and values computed on the basis of Karl Pearson’s method. Considering absolute and relative relief attributes, they have calculated density and percentage of the settlements in each group to show the influence of altitude on the distribution of rural settlements. They have concluded that there are some stretches which are not favourable for the growth of settlements in the region. By such studies one should take into account that altitude plays an important role for the growth and development of the rural settlements in the mountainous and hilly region.

Anjana P. Desai and Goutam Bhattacharya (1995) : Studied developmental problems of rural settlements in the coastal area of the Bhal region of Gujarat. The main objectives of this paper was to know (a) Environmental problems for rural development and (b) to suggest a micro level planning for the coastal area of the Bhal region in Gujarat. The region has been studied into three units – coastal, sub-
coastal and interior area, this sub-division has been made on the basis of physical and human variables. Methodologically, cartographic, tabular and statistical techniques have been used to analyse the problems over time and space. Data from topographical maps, remotely sensed data from satellite imagery, census report, Department of Agriculture, Soil Testing Laboratory and Department of Irrigation are the other sources of data, were used for the analysis. The variables such as, distance from the sea, morphology, percentage of flood and water logged area, type of soil, salinity of soil, underground water, degraded land, land use, cultivable land, irrigated land, cropping pattern, yield rate and population density are considered.

The basic developmental problems are identified and which are related to management of land resources, such as land degradation, saline underground water, water logging, soil salinity, depopulation of rural settlements, etc. Micro level planning was suggested in respect to land use, improved irrigation methods, cropping pattern (fruits and vegetables), better agricultural inputs, agricultural associated activities like dairy, poultry, fishing, sericulture, etc.; development of small scale industries and various schemes of the governments particularly integrated rural development programmes should be implemented properly in the region.

This type of study at micro level becomes needful for the rural development and management of land resources. And the suggestions are important to increase employment opportunity in villages.

A.P. Kumbhar (1996) : Studied rural habitat as a regional study of rural settlements in Nira Valley. In this research monograph the entire work is divided in eleven chapters and an attempt has been made to study the rural settlements in various perspectives. In the first chapter brief introduction of the area and its physical, social and economic set up is described. Second chapter deals with
evolution and growth of rural settlements in the study region. In third chapter he has attempted spatial distribution of rural settlements in respect to various physical and cultural factors. Fourth chapter devoted to the study of dynamics of rural growth in relation to various geographical factors and changing economic situation, whereas fifth chapter explains site and location of rural settlements. Sixth chapter is dealt with types of rural settlements. In seventh chapter he throw light on morphogeneses of rural settlement. House types and building material is studied in eighth chapter. In ninth chapter author identified rural service centers and proposed new hierarchic structure of rural services in the Nira Valley. Social structure, organization of fairs and their role in social interaction have been studied in tenth chapter. In the last chapter case studies of a few selected villages are described. Finally author has draw some conclusion and he has suggested some recommendations.

Author has used primary and secondary data for the study. He has used various statistical techniques for the analysis of distribution of rural settlements, spacing, centrality, functional gap such as correlation, nearest neighbour index and centrality index.

Author has described in detail various factors, which influenced on distribution, types, pattern, site and spacing of rural settlements in the study region. He has also explained morphogenesis as well as nucleation and dispersion of rural settlements.

S.B. Sawant (1998) : Studied development and change : a study of village Khadki, Pune District (Maharashtra). In this paper author have reviewed the situation of Khadki village during last 40 years and analysed the socio – economic changes in the village. The author has collected data on socio – economic conditions in the village by house to house interviews, for land use purpose revenue records were used. Since he was interested in comparative look, he has
himself restricted to those aspects, which were included in first study i.e. in 1966 survey. For the analysis of various changes the variables such as agricultural land use, agricultural inputs, agricultural implements and seeds, income of the family, sources of income, size of land holding, changes in quality of houses, population characteristics (growth, age, sex, education) amenities were considered.

His findings are, area under cultivation was increased, more rewarding crops like vegetable becomes important, intensity of irrigation increased, lifts and electric pumps came in widespread use, with the passage of time agricultural holding have become smaller, agricultural inputs have improved, villagers have become more mobile with increased use of bicycles, motorcycles and scooters, quality of housing has improved, joint family system disappearing, both birth and death rates are declined and improvement in water and food supply resulted increasing better of life of villagers. The author also concluded that planned development efforts during the last three decades have resulted in substantial improvement in socio-economic conditions of villagers.

This type of monograph study presents the account of rural transformation in respect to various aspects of rural environments.

1.7 USEFULNESS AND SIGNIFICANCE OF THE STUDY :-

The main aim of human activity is his own welfare while settling somewhere on the earth. Various and multi-dimensional factors involved in attaining, sustaining and improving human well being, different dynamic aspects of settlements need to studied thoroughly. So usefulness and significance of human settlement study refers to the following.

1. To understand and find out where, how and why the rural settlements are established, their nature of growing and forming the new pattern which helps to know their needs and requirements for future planning.
2. It provides better understanding of pattern of land use and pioneer interrelationship between agriculture and rural settlements.

3. Rural economy affects due to fluctuation in agricultural production hence it is urgent need to suggest the proper use of land and planned development.

4. It provides better understanding of inter-regional relationship and arrangement to integrate the spatial structure i.e. size, spacing and their causes.

5. It provides comprehensiveness to evaluate and search out better conditions for optimum quality of life regarding various facilities, i.e. supply of drinking water, ramification of electricity, availability of irrigation, education facilities, better medical facilities, network of transportation and communication, etc.

6. Study of the Physical – Social – Cultural and Economical characteristics and situation in the different parts of the basin will be helpful to develop such areas by providing various development schemes and programmes in the basin.

7. It provides better understanding of socio-cultural values and ethos of the people in the basin.

1.8 SELECTION OF THE AREA FOR THE STUDY :-

River basins bear geographical unique properties and can be treated as planning units. This is an attempt to study Pravara basin a tributary of River Godavari, with respect to rural settlement and their geographical perspectives. Pravara basin has wide variations in altitude, amount of rainfall and soil types. These geographical factors are responsible to create variations in characteristics of rural settlements in the basin. My personal acquaintance with the area is an additional aspect for selection of the study area.
1.9 OBJECTIVES :-

Following are the broad objectives of the study.

1. To assess the role of geographical factors that affect location and distribution of rural settlements in the study area.

2. To know the origin evolution, growth and development of rural settlements as well as declining nature of rural settlements in study area.

3. To know the spatio temporal variations in demographic characteristics of rural settlements in the basin.

4. To understand the distributional pattern of rural settlements and to know the factors, which affect the dispersion and nucleation of the settlements in the area.

5. To find out the size and spacing of rural settlements in the basin.

6. To examine the availability of social amenities and its present requirements in the basin.

7. To suggest the future prospects and rural development planning in the area under study.

1.10 DATABASE AND METHODOLOGY :-

As this work has to be done single handedly, author hopes that the readers will take into consideration its limitations. The data collected and used for the period 1961 to 1998 comes from primary and secondary sources. The primary data is the raw data collected through different sources for which special questionnaires were designed and information collected through various offices and villagers. Questionnaires were used for data collection of sample villages or case studies. It was not possible to select various villages from every tahsil, therefore on the basis of physio – socio – economic region, five villages from each three regions (total fifteen villages) were selected for the study.
The secondary data obtained from socio-economic review, District Census Handbooks, Gazetteers and periodicals.

The data collected through primary and secondary sources were processed and represented by statistical and cartographic techniques. As the study purports to be geographical in spirit the chorographic and chorologic methodologies have been adopted. These involve the description and interpretation of the regional patterns revealed through choropleth method. For studying the pressure of population on agricultural land, various land densities such as crude density, rural density, agricultural density, caloric and nutritional densities are computed. For measuring the actual pressure of population on agricultural land the relative coefficient value of over population are computed by taking into consideration the standard hectares namely 0.4047 hectare and per capita land.

For studying the changes in land use pattern five major land use categories i.e. area under forest, area not available for cultivation, other uncultivable and fallow land and net sown area are considered. In order to smooth but unusual fluctuations ten years average data for years 1960 – 71 and 1998 – 99 are used, percentage of area under each category of land to the geographical area is computed.

For studying the land use efficiency the index of land use efficiency is calculated by dividing gross cropped area by net sown area into hundred. For studying the changes in cropping pattern ten yearly moving averages are considered.

For examining the influence of some of selected physical and cultural variables on distribution of settlements correlation matrix technique was used. And the hypothesis i.e. the distribution of settlements are related to physical and cultural factor was tested.
The indices of agglomeration and dispersion of settlements developed by Bernard, Demongeon and Debouverie was computed as well as Lorenz Curve, which is indicating index of concentration or the compact nature of settlements also computed to explain the various types of rural settlements in the study area.

For the study of distributional pattern of settlements, quantitative expression such as Chi-square Test and Nearest Neighbour Technique were used. With the help of Chi – square formula observed number of settlements in each tahsil were taken into account and expected number of settlements was computed to show the influence of physical factors on distribution of settlements. With the help of ‘Rn’ value nature of distribution was analysed.

For examining and measuring the importance of a settlement in terms of its functional capacity to serve the needs of the people of the surrounding area. Centrality Index was computed. To determine the centrality, score values were worked out by taking into account various functions performed and services provided by various settlements in the study area.

For identifying various patterns of rural settlements, topographical sheets were used.

1.11 CHAPTER FRAMEWORK :-

As it is generally quoted that “India is a country of villages” and since the country is dominated by agrarian economy, so the study of rural settlements in India should be given prime importance. After the independence Indian geographers have diverted their attention to study the rural settlements. The present study is an attempt in this direction. Rural Settlements in “Pravara Basin” are studied in various perspectives.

The first chapter gives the brief introduction of the subject, which includes importance of rural settlements, approaches to the study of rural settlement
geography, rural – urban dichotomy, growth of settlement studies in India, review of literature, significance of the study, selection of the area for the study, objectives and methodology.

Second chapter deals with geographical personality of the study area i.e. site, situation, location, physical (relief, drainage, climate and soil) set up.

Third chapter includes economic, social and demographic characteristics, occupational structure, land use pattern, population composition and growth.

Fourth chapter deals with the historical perspective concerning the evolution of rural settlements in the different periods of time. The origin of settlements and their spatial distribution has been studied in a chronological order pertaining to the regional history. While studying the evolution of rural settlement from ancient period, the account of mythological literature, archaeological excavation, travel account of different travelers and historical and geographical factors have been taken into consideration.

In the fifth chapter an attempt has been made to study the types and spatial pattern of rural settlement. Rural settlements indicate the complex relationship between the human occupancy of the land and the environment. A type of settlement in a system of functionally interrelated settlements. Each village is a part of a total system. The detail analysis of rural settlement types has been attempted through the observation of one inch topographical maps of the study area and field observations. The spatial pattern of rural settlement has been studied quantitatively by using several techniques. Site, situation and locational aspects are considered.

Size and spacing of rural settlements are studied in the sixth chapter. Size includes the dynamics of rural growth in relation to various geographical factors and changing economic situation. Spacing of the settlement is the function of physio-cultural factors, this spatial distribution is analysed by various quantitative
techniques. A number of geographers have recently pointed out that the purely locational relationship of rural settlements is affected by the factors of distance. The locational decisions are generally taken in order to minimize the movements. Haggett (1965) has pointed out that the traditional requirements of any rural settlement are land, water, building material, fuel and accessibility. All these factors exert their influence on the location of rural settlements, particularly accessibility playing a vital role in influencing variations in rural settlement size. Rural house types and building material also discussed in this chapter.

In the seventh chapter an attempt has been made to identify rural service centers in the Pravara Basin. Rural service centers are the central settlements. They provide goods and services to the surrounding areas, such rural service centers have been identified as well as new hierarchic structure or rural service centers have been proposed.

Eighth chapter is devoted to study of morphogeneses of rural settlements and case studies of few selected villages. Villages are selected from the different physio – socio – economic regions.

Last chapter deals with conclusions based on the study and some suggestions made for the development of the study area.

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