CHAPTER - 1

INTRODUCTION
Settlement is the topographic expression of grouping and arrangement of two fundamental elements: houses and highways Brunhes (1951). Houston (1953) rightly stated that the study of the visual imprint made by the man on the country side in the process of occupancy is the primary geographical investigation of rural settlement. Demangeon Albert (1962) observed about the rural habitation stating that of juxtaposed settlements are seen where villages are encircled by confused parcels of arable lands in the plains and hamlets with scattered houses in the highland areas. Peter Hagget (1965) observed that settlement is an organized colony of human beings that represents the essential elements of the cultural landscape being viewed as a concrete expression of human occupation on the earth surface. Stone (1965) accepts that settlement is the place where one person or more dwells regularly or the act of establishing a permanent residence. The rural settlement in specific is the spatial differentiation of grouping of houses and highways in rural areas where social cohesion and cultural ties are strengthened accordingly to the needs of the society and mankind Mandal (1988).

No doubt, the cultural landscape is different from region to region, where characteristics of people and their social and economic relationships in the environment are the determining factors. The basic theme of rural settlement geography is to study the spatial variations and pattern of
settlements and their various functional attributes in the organization of the settlements in the region. The rural environment can be understood by examining the distribution of settlements in terms of location, site, situation, dispersion, form, functions and size resulting from man’s activities.

Rural settlement means the totality of human community in rural areas with all the social material, organizational, spiritual and cultural elements that sustain a community.

SYSTEMS CONCEPT

Systems concept was defined by Chorley (1962) as ‘A set of objects together with relationship between objects and their attributes’. Berry (1967) well defined system as ‘A set of objects that are interrelated with each other and by many attributes’. The Oxford Dictionary defines system as “A set of connected things that form a whole”. The system theory was of remarkable growth in the biological and behavioral sciences. Recently in 1962 Chorley was a pioneer to introduce the concept into geomorphology and physical science and later on it was adopted by human geographers. In geomorphology, an Erosional systems is functional with set of objects like watershed, slopes, streams etc. are related through circulation of water and sediments. In settlement geography various set of objects like farms, houses, highways which are closely related attributes. A settlement system is formed by number of settlements which are linked together through significant interaction (Dziewonski & Jerezynski, 1978).
So as a settlement system constitute set of settlement which are interlinked with each other attributes significantly. The theory of Central place postulated by Walter Christaller (1933) can be closely associated with the study of settlement system where it is notated that there is a hexagonal nested pattern of arrangement of settlements in a region. The idea of hexagonal arrangement may not be true to the practical point of view as the concept of homogeneity landscape is purely theoretical but, this concept can be considered to determine the hierarchy of settlements in the region. The settlement system is the outcome of heterogeneity of physical form and influenced by effective movement and interaction of social, cultural, economical, political factors over a landscape.

REVIEW OF LITERATURE

Rural settlement is the mainstay of human society throughout the world. In any rural settlement houses act as the flesh and highways as the circulatory system for the movement of human beings and hence the study of rural settlements as the place of residence, concentration of resources, nodes of transportation lines on the growth points and growth centers are considered pivotal.

Though the contribution of research work in the urban scenario is comparatively more it is only in the recent years various approaches are applied in rural studies. During last few decades rural settlement geography has attracted many of the scholars interest. The growth of rural settlements, location, size and the relationship with the nature was examined by Schluter
Matui (1932) a Japanese geographer did a valuable pioneering work on qualitative rural settlement geography. In Europe the rural studies drew attention in 1940's. Arrensburg and Kimball (1940) published "Family and community in Ireland", which shows how closely knit a group of small farmers can be in their kinship, political and economical life. Mogey (1947) in his book "Rural life in North-Ireland" studied North-Ireland settlements since 1700. The significance of aerial photographs was first tested by Kohn (1951) in rural settlement studies, both filed observatory and photo interpretation technique was used to study rural settlements in Wisconsin Dairy Area, North-Dakota Spring Area and Washington Irrigated Area. Tator (1951) has written about Indian village sites on the Mississippi Delta. Chisholm (1953) has paid greater attention to show the relationship between land use and rural settlements. Williams (1963) in his book "A west country village" describes a "Truly Rural" Community in the part of South-Devon which has experienced outward migration. Yonekura (1975) made a contribution of about seventy research papers and more than nine books which are directly or indirectly related to the cultural heritage and rural settlements of Japan in particular and Asia and India in general. Lefvre (1976) of Belgium had made notable contribution in the study of pattern of rural settlements. Settlement morphogenesis and spatial functional organization of villages was analyzed by Bisht (1978).

**STATUS OF INDIAN RURAL STUDIES**

Unlike of urban settlement studies, rural settlement studies received due attention from various Indian scholars only in late 1960's by Singh R.L.
Singh N.K. and Singh P.B, the founders of “Varanasi School of Rural Settlements” through various approaches. Singh (1971) made a remarkable attempt to sketch various aspects of large agrarian and fruit growing settlement in Dholri village in the fertile Ganga-Yamuna doab. Ali (1971) discussed rural settlement types, pattern, location, sites and house types in Ghaggar plain in relation to population distribution. Singh L.K.P (1976) identified four types of settlements in Son Valley plain. The relation between man, culture and settlement was identified by Eidt (1977). Singh (1978) made a valuable contribution by analyzing the spatial relationship and morphological structure of rural houses in Patna district. The studies in Himalayan areas observed that the role of relief holds true in the dispersal and distribution of settlements, Inayat Ahmed (1979). Push (1980) considered rural settlement and examined the functional relationship with urban centers in the development of settlement system in the region. The caste factor was also effective in the formation of types of rural settlements in Western Uttar Pradesh, Bhattacharya (1982). The influence of urban centers on nearby rural settlements was reviewed by Dessai (1982) in a study conducted in Ratnagiri district of Maharashtra state. The analytical study of spatial distribution of rural settlements by using Nearest Neighbor technique to identify the pattern of settlements at Tehsil level was made by Srivastava (1983). Noble (1984) studied about the migration and settlement pattern of herding communities of the Niligiri district of Tamilnadu. Meetai (2000) studied 110 villages in Imphal East and Imphal West districts to examine the evolution, hierarchy and spatial organization of rural settlements.
Though some of the effective research is carried in the field of rural settlements but they have not covered many facets of rural settlements, still there are many areas which are to be taken up for further research. The present endeavor aims on the rural settlement system where villages are the centers for economic and social organization. Therefore, attempt has been made by selecting 120 settlements in the study region and to examine the various spatial and organizational aspects of rural settlement systems.

SETTLEMENT: A SERVICE CENTER

The rural settlements especially, in developing countries have undergone tremendous revolutionary changes in the sense; it has experienced a total transformation from mere assemblage of few huts or dwellings to multidimensional arrangement of functional spaces. Settlements can be viewed and analyzed from different angles; each related discipline looks at them from its own angle, in isolation to related aspects. As sociologists understand settlements as regard to social aspects, historians understand them as a historical perspective of view, economist think an economic point of view etc. but no other discipline could do justice to the settlement studies as geographers could do. Rural settlements have not remained as the accumulation of few dwellings over an extensive farm area. There is lot of revolutionary changes in these settlements. There are varied activities other than agriculture which suits to the environment of the physical site with resource base hold much relevance. The settlement provides the service to cater the basic needs of people in general providing facilities like retail
shopping, entertainment, cultural and professional services not only to the own region but also for surrounding areas. Such settlements are referred as "Rural Service Centers". Rural service centers act as the focal centers of human society and culture, the center of manufacturing, trade and service providers along with agricultural dominance. The range of significance of these centers depends upon the total number of inhabitants depending on them. The lesser the services offered more the dependence of inhabitants upon other regional service centers. It is quite interesting to note that the rural settlements in developing countries are dominant with non-agricultural functions or services which led to the rise of concept called rural service center. In India the rural settlements as a service centers are largely traced over the western coast of India where the tourism activities are functional, such rural service centers are also seen all along the foothills of Himalayan Ranges where agricultural activities are of less dominance. Gradually, due to external source of economy by tertiary activities these settlements experience technological and socio-economic advancement. Such settlements provide services like power supply, provision of credit, marketing, etc. Hence, due to the tremendous population growth and the choice of the people providing by the modern means of development in service centre, which supply large and increasing range of new goods to meet demand of modern agriculture reflect to improve the standard of living in rural areas. Thus, the rural settlement though predominant in agriculture it is also inevitable to provide the various services to the people.
SETTLEMENT: A MIRROR OF LIFE AND ECONOMY OF THE PEOPLE

One can not deny the fact that the settlement are the focal points of multi-dimensional activities like social, cultural, religious, political and commercial. Hence the settlement reflects the image and economy of the inhabitants. It is clear that the economic development of the settlements depends upon the association of all the functional activities in the region. The rural settlements spontaneously reflect the economic and social traditions of the people. The organization of settlements in rural lands depends on the availability of the resources in the region, depicting the socio-economic development of the region. Not only the economic development can be observed but also the socio-cultural and religious bondage can also be analyzed with the settlement organization. The market center of the settlement also reflects the economy of rural life. Hodder (1969) states that “Markets reflect the economic and social traditions of the people” whereas Good (1972) believes that marketing calendars are the outcome of social and cultural activities in the region. Since India is the land of rural settlements, the economic organization of society depends on the pattern of market centers and periodic fairs, Kulkarni (1966).

Whatever is the reason, a market resource or the socio-religious activities in the rural lands, all such associations directly reflect the true image of the people and depicts the level of economic development of the settlements.
SIGNIFICANCE OF THE STUDY

India is land of agriculture and rurality, where more than 80% of the people are engaged in primary activities and reside in rural land but, the review of the settlement studies apparently shows that 80% of the studies have already carried on urban settlements and about 20% on rural areas, which is a matter of great concern. Rural settlement planning has been a neglected branch of the subject. With the increasing socio-ecological evils in urban land there is a trend of people attracting towards rural areas. It is a need of the hour to change the socio-economic life of the rural population and also the pattern of land utilization. In such a situation it is essential that the rural land should be modified with proper planning strategies. As the rural studies is very limited compared to urban, the researcher has made an earnest effort to study the rurality of Goa, so as to add a drop of knowledge to the ocean of rural studies.

LIMITATION OF THE STUDY

The present investigation has the following limitations.

1. The published data on various selected parameters was not available in the study region, thus the data collection is based on the primary source through the questionnaire and accordingly, interview has been conducted to collect the information.

2. As the study area was under Portuguese rule till recent 1961, the historical data is not well maintained.
3. It was not possible to select all the 330 rural settlements for study, hence only 120 settlements were selected on the basis of mean rural population as per 2001 census.

4. The present study is only confined to rural settlements and not to the urban settlements.

DATABASE

The present endeavor is based on both primary and secondary source of information. Primary data was collected through the questionnaire and interviewed various people pertaining to each village. The researcher personally visited 120 selected villages which took nearly 2-3 months for survey work. The relevant information related to administration, basic infrastructure, transport, industries, communication, education, medical, etc. was collected by interviewing the local residence of the rural settlements.

Secondary data was collected from the agencies like Department of Census, State Health Offices, Directorate of Industries, Agricultural, Fisheries, Archeological Department and Department of Education.

METHODOLOGY

The present investigation is based on the data collected from both secondary and primary sources. The researcher selected 120 rural settlements from the state which is a mean rural villages having more than 2000 population (as per 2001 census). Based on the selected parameters the data was collected from the various sources. The collected data was compiled, tabulated
and accordingly computed. To analyze and interpret the data both theoretical and empirical methods were adopted. The prevailing cartographic and quantitative techniques were appropriately applied to draw the conclusions. The research techniques like Nearest Neighbor method, centrality index were used in the study. The Effective cartographic tools were employed to design maps and diagrams.

MAIN OBJECTIVES OF THE STUDY

Rural habitation as a point of origin and primary residence of the people are largely manifested by the cultural landscape wherein people dominantly engage in primary activities. The various factors like physical, social, economic and cultural are responsible for the spatial organization and functioning of these settlements and hence these dimensions are in need of critical examination.

The present endeavor aims at investigation of various spatial perspectives of rural settlements which are as follows,

1. To trace out the origin and evolutionary process of rural settlements in historical context.
2. To know the spatial distribution of settlements and types of settlements with respect to physical, social, economic and cultural factors.
3. To understand the functional aspects of settlements in study region.
4. To analyze the functional characteristics and determine the hierarchy of rural settlements based on selected parameters.
5. To suggest a comprehensive planning strategy for further development of settlements in the area under study.
HYPOTHESIS

In the present study it is hypothesized that,

1. The location of settlement is based not only on the physico-climatic and cultural factors but also on the socio-economic needs of the people.

2. The origin and evolution of rural settlements are the outcome of cultural and religious factors.

3. The growth and development of rural settlements largely depends upon socio-economic activities of the people.

4. Functions of rural settlements are directly hindered by the transportation system.

5. Lesser the service offered by the settlement more is the dependence of inhabitants upon other regional service centers.

THE AERIAL UNIT OF ANALYSES

In India the Districts are considered as the planning units by the Planning Commission, each taluka is a sub-unit. The researcher has considered the same as the unit of analysis. There are 330 rural settlements located in 11 Talukas in the study region. The rural mean population of the study area is 1850, for the convenience of research point of view; the investigator has selected the villages having 2000 population in the present study. Accordingly, 120 settlements have been chosen to know the settlement systems in the study region.
The present study was undertaken to analyze the various spatial perspective of rural settlements in the state of Goa. The work is systematically arranged into seven Chapters.

In the Introductory Chapter the researcher has made the modest attempt to discuss the concept, reviewed the literature and focused the status of the rural studies in Indian and Foreign lands.

The geographical exposition of the study area is highlighted in relation to location and extent, physical factors, demographic characters, settlement character and economic characters are dealt in Second Chapter.

The Third Chapter was devoted to discuss about the origin and the evolutionary process of rural settlements in the region.

The Fourth Chapter deals with the various spatial aspects of rural settlement systems in the study area.

The Fifth Chapter focuses at the functional organization of rural settlements in the study region.

The Sixth Chapter is devoted to determine the hierarchical order of rural settlements in the study area.

The Seventh Chapter aims to summarize the whole text and to find out the conclusions and accordingly effective planning strategy is proposed for future development of the study area.