CHAPTER VII

CONCLUSION AND SUGGESTIONS
Rural settlement as man's living and functional space, forms an integral part of human life. A rural settlement, as the point of origin and primary residence of human society, is the linking thread and life blood of all geographical studies. The study of rural settlements embraces the entire landscape. These settlements have a greater role in the transformation of economic space and in changing the sectoral and spatial structure of regional economy. They are the topographic expressions and exhibit the reciprocal relationship of human occupancy features and environment over space. As the cultural landscape is different from region, to region which is characterized by socio-economic conditions of the inhabitants and the environmental determinant it is utmost important to analyse rural settlement in prevailing conditions of the region. The rural habitations cannot be studied individually in isolation with their various set of objects like highway, farms, etc, hence the rural habitations has to be analysed in relation with the set of objects that are interlinked with each other and by many attributes which are functioning in a existing environment. Such a consolidated rural studies is widely termed as rural settlement systems.

In the introductory chapter, the thrust is also given to review the literature pertaining to the subject both in Indian as well as foreign context. The review of the literature apparently confirms that the rural studies is widely confined to few pockets of the world. Various scholars have put their best efforts to study the
rurality in various parts of the world by using quantitative and qualitative approaches. The status of Indian rural studies shows that, quite a large number of scholars have put their efforts to evaluate the rurality of Northern states as compared southern states. The scholars like R.B. Mandal, N.K.Singh, P.B. Singh, L.K.P. Singh etc are highly devoted to the rural studies of Uttar Pradesh and Bihar. As compared to Northern part of the country the southern part lacks the scholars interest and it is an urgent need of the hour to concentrate to study rural settlement system in South India. Hence, the researcher has chosen the State of Goa as one of the study area and accordingly in-depth analysis has been made. This kind of work is not only to raise the content of the rural settlements studies but also it is an effective base for planning strategy for the spatial development point of view. It is interesting to note that the researcher is confident that the present investigation has got prime importance in the content of Indian rural scenario. In western countries the studies have been carried out widely in the rural sector in a different dimension which is not suitable for Indian context due to the divergent approaches.

Settlement is not mere accumulation of few houses and connecting roads. The settlement in the developing countries has undergone tremendous changes and has experienced the total transformation from mere assemblage of few huts to multidimensional arrangement of functional spaces. Depending upon the use and resources of the land the settlements act as a service center for the people in and around its zone of influence. It provides the various services like basic education, infrastructure, market, banking and transportation facilities etc.
Hence the settlement is considered and evaluated as a service center of lower order functions which are supporting higher order centres.

Hodder (1969) stated that a market reflects the economy of rural life. Not only the market but also the entire settlement and its arrangement over a landscape is responsible for reflecting the lifestyle, cultural background and overall prosperity of the region. Thus it is viewed that the rural settlements is like a mirror by which, the life and the economy of the inhabitants can be observed. The processes of humanization on the landscape, the spatial perspectives of rural habitation, the analysis of function and further the classification of these settlements into various hierarchical levels in the study region have been studied in preceding chapters.

The nature of soil found in the study area is of poor fertility and is more of laterite type. Along the coastal belt there are varied types of soils like alluvial, saline, marshy and sandy coastal, distributed in varied pockets.

The population of the region is recorded as 1343998 persons which is about 0.13% of the country's total. The proportion of literate towards total population is recorded as 82.32%, with males 88.88%, and females 75.5%, which apparently reveals that the region is highly dominated with literates. Among all the 11 talukas the highest density of population is found in the taluka of Murmagaon, with 1327 persons per square kilometer and lowest is in Sanguem with just 73 persons per square kilometer.

The economic activities which are dominant in the study region are agriculture, industries, mining, fishing and tourism. The study region has a very good accessibility in the form of roads, railways and airways. Along coastal belt
the region is accessible by water ways too. The study area lies towards western part of the country, constituting of 11 talukas and covers an area of 3702 Sq. Kms with the length of 105 Kms from north to south and 60 Kms in its maximum width from west to east. Topographically it appears sloping towards west and highly elevated towards east. Along its eastern stretch there lies the Sahyadris ranges and towards the west the great Arabian sea. Due to its proximity to sea, the study area experiences salubrious climate. The region is generally humid due to its closeness to the Arabian sea. The study area has many rivers and rivulets draining the entire land and hence, the region is rich in potentialities water resources. The high amount of vegetation cover, which is generally of evergreen and semi evergreen type is found along the eastern part and as one moves from east to west there is a tremendous decrease is the forest cover. The coastal vegetation is of estuarine type consisting of mangroves.

The origin and evolution of settlements is influenced by physical and cultural conditions and functional characteristics with the impact of historical event. The study area has undergone tremendous evolutionary changes throughout the historical period. The earliest settlement was traced during the period of Mahabharata, where villages like Benaulim and Tambde Surla were established, later in due course of time the settlements have origined due to varied reasons. Some settlements have emerged at the haulting places of the trader moving from coastal areas towards interior regions, whereas other have emerged due to culturo-religious reasons.

During the regime of various rulers like Kadambas, Marathas and Portuguese, there were number of forts constructed, later all along such defensive regions, the settlements have evolved. Other reasons for the emergence
of rural settlements can be termed as the availability of water resources, good
plain and fertile land, mineral deposits, transportation nodes etc. The hypothesis
regarding origin and evolutions of settlements is fully accepted as the evolutions
is the outcome of cultural and religious factors, which is proved with evidences
in the concerned chapter.

The most important aspect of any geographical study is, the consideration
of space and spatial aspects. Hence the researcher has made an attempt to review
the spatial aspects of rural settlements in the study area. The spatial attributes
like size and spacing of rural settlements, it nature of dispersion in varied
conditions and the main types of rural settlements found in the study region has
been analysed using the qualitative as well as quantitative approaches. Three
types of spacing between rural settlements namely, areas of low spacing, areas
of medium spacing and the areas having high spacing have been identified in the
various talukas of study region. It was also noted that the areas with low spacing
settlements are more interactive with each others and are dominant in higher
order functions. The villages which have more distance between them are less
interactive and depend largely on nearby cities for higher order functions.

To propose the effective plan for the development of settlements it is
essential to study the nature of distribution of settlements over a landscape. The
researcher has given thrust to evaluate the nature of dispersion of rural
settlements in the study region and found that the settlements can be catogarised
into five dispersed nature namely, clustering, elongated or approaching
clustering, leading towards clustering, random and approaching uniformity. The
nature of dispersion is highly controlled by the topographical and economic
conditions of the region.
International union of geographer have recognized only two types of settlements i.e., compact and dispersed. In the present study which is based on personal observation and personal inquiry it is noted that due to locational advantages and disadvantages and also due to heterogeneity of the study area there is a deviation with that of standard classification recognized by International geographer union. In the present investigation three types of settlements are recognized namely compact, semi compact and hamleted and due reason are mentions for such varied types of settlements in various talukas. The nature of settlements, its growth and development is largely controlled by the socio-economic activities of the people and is partially confirmed in this chapter with the study of size, spacing, dispersion and types of settlements, which was hypothesized earlier.

The functions of rural settlement are usually confined to the primary production and distribution of products from the areas of surplus to the areas of deficiency. In the present study, besides primary production the stress is given to know the various functions prevailing in various villages under investigation. The prominent functions evaluated in the region are administration, education, medical facilities, basic infrastructure, transportation, communication, market, banking and industries. The evaluation of various functions resulted to conclude that most of the functions are more dominant in Salcete taluka and less in number in the taluka of Sattari. More the transportation network, more are the functions in the village and is confirmed in this chapter which was hypothesized earlier.
The study of hierarchical pattern is essential in order to understand a spatial interdependence of the settlement centres, the functional wholeness of the system and for the internal placement of the other. Hugar (1994) states that the hierarchical classification provides the base for regional planning and development.

For the identification of hierarchy, 120 rural settlements were selected and 9 main variables were considered. By employing the centrality index technique, five hierarchical levels were classified, is which one settlement namely Verna in Salcete taluka occupied the top position, three settlements namely Dharbandoda, Colem and Anjuna at the second level. Seven settlements are at the third level, and thirty four and seventy five village at fourth and fifth level respectively. No proper articulations system of settlements exists in the study region and the organization of settlement system deviate from the system of theoretical idea.
THE PLANNING STRATEGY FOR THE FUTURE DEVELOPMENT OF RURAL SETTLEMENTS

Rural settlement planning refers to a science and art of ordering landuse, settlement sitting, building and communication network in rural areas to secure maximum practicable economic growth, convenience and safeguarding the beauty and natural environment (Mandal, 1989).

The ultimate aim of the proposed plan is to minimize the spatio-functional variations. The researches has identified the functional deficiencies in various talukas and made an attempt to suggest a plan for the future development of rural settlements there by to achieve spatial development. Such deficient functions are identified in various settlements at all hierarchical level and similarly the strategy is suggested for the improvement of the region. The spatial gaps are identified on the basis of size and spacings of the settlements, nature of dispersion and the level of hierarchy of the settlements. Besides these there are many specific regional problems which are also equally responsible for widening the spatial gap. The homogeneity has been crept by the heterogeneity by the nature itself in the study area, hence the study area has different physical characteristics such as coastland, midland and highland, which are influencing factors for growth of the settlements in varied sizes and spacing.

As far as the spatial organization of service centres is concerned the forgoing discussion reveals that the rural centers would work as agents of rural change, because the village forms an integral part of the rural environment and it is the product of social, economic, cultural and physical balance. With a view to
consider that the rural centres would develop for functional integration, a schematic hierarchy of settlements is suggested on the basis of the aforesaid analysis.

At present the Anjuna village is found at the second order in the hierarchical classification. This village can be effectively lifted to the level of first order settlement by implementing the proposed functions in the region. (Fig. 6.1)

The village has high scope for the development of settlements as it is under the constant influence of tourist from various parts of the world. Similarly two settlements namely Colva and Cundaim can be graded into second order level. Colva being located in the coastal region in a very important tourist destination and hence, the functions which cater the needs of these tourists are highly found in the village, on the other hand the functions like higher education, insurance services, industries and medical facilities are in lacuna. Hence, by implementing these service functions in the village, the region can be brought to the second order level of settlement in the region (Table-5.1). The village of Cundaim in Ponda taluka holds the significant position as third order settlement in the study area. This is one of the most important industrial estates and hence has a good functions like transportation and communication, banking facilities etc, which are more of industrial in nature. The people inhabited in this village are mostly industrial labours. Around 70% of the industrial workers travel everyday from various places to this village to work in there industries. If the function like good education facilities, medical services and marketing activities are introduced the village has the high scope for development of settlements. (Fig. 6.2) Whereby the region can be lifted to the level of second order settlement.
GOA
PROPOSED FUNCTIONS
(IIrd ORDER SETTLEMENTS)

INDEX
- College
- Childrens Park
- Taluka Hospital
- Courier Service
- Tourism Based Industries

Anjuna

Fig. 6.1
GOA
PROPOSED FUNCTIONS
(IIIrd ORDER SETTLEMENTS)

INDEX
- PUC
- Community Hall
- College
- Technical College
- Hospital
- P & T Office
- ITI
- ATM

Colva
Cundaim

Fig. 6.2
Table-5.1
Proposed Strategy for Functional Co-ordination

<table>
<thead>
<tr>
<th>Settlement Category</th>
<th>No. of Settlements</th>
<th>Name of the Settlement</th>
<th>Proposed Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>01</td>
<td>Anjuna</td>
<td>College, Children's Park, Taluka hospital, Courier Service, Tourism based Industries</td>
</tr>
<tr>
<td>III</td>
<td>02</td>
<td>Colva, Cundiam</td>
<td>Community Hall, PUC, ITI, Technical College, College, Hospital, P &amp; T Office, ATM</td>
</tr>
<tr>
<td>IV</td>
<td>19</td>
<td>Poinguinim, Bali, Calem, Rivona, Betalbatim, Raia, Cortalim, Dabolim, Corlim, Chorao, Tivim, Betora, Shirda, Usgao, Onda, Amone, Arambol, Corgao, Morgim</td>
<td>Hospital, Telegraph Office, Nationalised bank, Medium Scale Industrial Unit, Out Post</td>
</tr>
<tr>
<td>V</td>
<td>09</td>
<td>Loliem, Fatorpa, Arpora, Pilerne, Maem, Surla</td>
<td>Out Post, School, Dispensary, Bank, Small Scale Industry</td>
</tr>
</tbody>
</table>

Source: Personal Computation.

The total of 19 settlements which are presently categorized in fourth order can be effectively lifted to the level of IIIrd order settlements by implementing the suggested functions in the villages. (Fig.6.3) Similarly nine settlements can be graded in the fourth order segment which presently exists as the fifth order settlements in the study region (Fig. 6.4).
Fig. 6.3

GOA
PROPOSED FUNCTIONS
(IVth ORDER SETTLEMENTS)

INDEX
- Hospital
- Telegraph Office
- Medium Scale Industry
- Out Post

Fig. 6.3
A cursory glance towards the taluka of Sanguem and Sattari reveals that, there are hardly any settlements developed in these areas of any hierarchical level. The researcher has selected only those settlements which are having the population of more than 2000 persons. As the study is based on this consideration, many settlements in both the talukas has not come under the investigation of research. In both the talukas there number of settlements which has less than 2000 population. Physiography of the region is one of the biggest hindrances in the development of settlements in these regions. However the researcher has great concern for these settlements as there settlements lack number of functional activities. Further the researcher suggests a thorough evaluation for the development of these settlements. The researcher is unable to propose a planning strategy for these areas as it was not under the consideration for study. Hence a detailed research is necessary for the development of these areas.

The settlements like Surla, Amona, Codli have large number of mineral deposits like iron ore and manganese. The entire ore is transported to various countries for processing. The Industrial units like Iron and Steel Plants, Iron Ore beneficiary plants are strongly suggested in these villages which would utilize local raw materials and could lead to tremendous development of the region.

At the outset, it is very essential to undertake an intensive survey for thorough examinations of land utilization and rural and urban continuum, resources appraisal, Government incentive plan for rural development etc. This comprehensive information will enable to developmental prospects of the rural areas and may facilitate for a better framework of rural transformation process.