CHAPTER IX

SUMMARY AND CONCLUSION

In this study an attempt has been made to bring out salient features of the settlement scenario of the Dhubri district.

The work is based on the conceptual framework of spatial organisation system, considering settlements as dynamic constitutional units. Their growth and distribution are as the product of spatial pattern, interaction and relationships among them, as the specific concern. Precisely, the work is an analysis in the context of settlement system, which has been shaped out by spatial organisation pattern and relationships among them and by the all existing socio-economic situation, considering human interaction over space, as the outcome of several contingent factors and forces of the physical and cultural environment, as well as of socio-economic situation. It pays great importance to these aspects in studying settlement organisation. This work however, is not a study in accordance with any particular conceptual spatial model in human geography intended to examine variations under a different regional framework.
The area in the analysis is Dhubri district, the settlements of which have been basic elements of study, keeping in view the settlement pattern, intersettlement interaction and relation confined to their organisation aspects only. Hence, there has been a definite attempt to identify the central places of various levels among with the amounts of attraction of the higher order central places over demographic mass and to examine their impact on the growth and distribution of settlements in the study region. The demographic mass, its concentration, movement and activities being the most sensitive and dynamic element of a spatial system, as an axial deductive agent in the analysis of inter settlement interactions, pattern and relationships. The interaction as corporated with respect to pattern in the central theme of the work provides clear exposition of spatial organisation system of settlement in the region. Various aspects of spatial distributional characteristics of settlements in the organisational system reflects both the visible and invisible forces of the physical and cultural environment operative in the space-settlement relationship. The non-availability of basic data at desired level, stood as a major handicap for tracing out the spatio-temporal transformation of settlement in a more meaningful way.

The Chapter I of the thesis briefly outlines the Introduction, statement of the Problem, area of study, review
of literature, significance of study, objective and assumption of the study, methodology and organisation of the work after mentioning the type of work done in this line as review of literature by some authors of repute. Besides, a brief note on the system, concept and organisation of human settlement patterns reflecting man-land relationship as an expression of areal interaction and on space settlement pattern and their relationship is given. Some considerations in the form of hypothesis have been introduced to project the depth of the problem, objective and assumption and also the method adopted for achieving the objectives.

In the subsequent chapters, a systematic approach has also been attempted beginning with examination and exposition of the historical perspective and geographical personality of the study district. These proceeding through recognising and locating the spatial interaction regions and settlement pattern on maps deriving and examining the relative service status and pull of the higher order settlements, nature of relationship among important rural centres of the Gaon Panchayats and regional urban centres, various distributional aspects of settlements, identification of rural central places and their nature of distribution and relation to rural communities and finally correlating all these aspects to socio-economic situation. It is clear that such exposition in a typical rural economy with lower level of urbanisational
study, forms a planning infrastructural base for socio-economic growth and development, therefore, the present work on Dhubri district, thus has been a journey in that direction of spatial diagnosis.

Chapter II, deals with the historical perspectives of the region with settlement characteristics. It is observed that in the pre-historic period, the original inhabitants of this region lived mostly in isolated temporary dwellings. There were very few permanent settlements in this region up to the 19th century. In the British period after the introduction of the land settlement Act through the 'Assam Land Regulation' in 1886, the permanent settlements grew in this region. Factors like administrative functions, introduction of railways, better communication systems, educational and medical facilities are also responsible for the growth of permanent settlements of various types in the area.

The spatial emphasis on the growth and distribution of settlement is observed that the history of the permanent settlements of land occupancy to the region dates back to the British period and more particularly to the later part of the 19th century. The rulers prior to the British period could not provide congenial conditions for the steady growth of permanent settlement due to
various socio-political causes. Since, pre-historic times till 12th century A.D. the region was ruled by a number of Tribal kings. During their periods, there were influx of different groups of people from the northern and southern Indian kingdoms including the Tibetan, Chinese and Burmese territories into this region and settled only in the better fertile agricultural land with suitable physical environment of their best choice, which restricted uniform growth of permanent settlement over any part of the region for a considerable period of time.

During the period from 12th to 1826 century A.D., the study area was ruled by four different kings, in different times, as (1) Kamata kings (Mid 13th to 1385 AD), (2) The Bar Bhuyan, (3) The Kachari and (4) The Chutia etc. of which the Kamata kingdom (From the early 13th to 1504 century A.D.), covering the present districts such as, Dhubri, Goalpara, Kokrajhar, Bongaigaon, Barpeta, Kamrup and a part of Nowgong district. The land tenure system during the rule of these kings, were not conducive the growth of permanent settlements with individual ownership. However, the failure of the earlier rulers, type of land revenue and typical local taxes imposed by different rulers, have been the major cause of retarded growth and shifting of settlements at different times.

In 1826 A.D., the region came under the British rule, The British ruller could provide a favourable
condition for a steady growth of settlement in this region and through a liberal form of land revenue administrative land settlement system, fixation of rates of local tax and land revenue, Assam land and Revenue Regulation and this created a state of socio-economic atmosphere. The opening of a number of tea gardens during British rule, played a significant role in the growth of the tea garden settlement and other type of settlements in the region.

During the 19th century, new settlements with immigrant people, started growing in the previously unsettled pastures, chars and flood prone areas too. The present organisational setup of settlements in the study region, is thus, the product of land revenue administration of the British and socio-cultural transformation of the region during the 19th and 20th centuries. After independence in 1947, the former Goalpara district was divided into three sub-divisions, e.g. Dhubri, Goalpara and Kokrajhar, which were then elevated into districts in 1963. Afterwards, Dhubri district was sub-divided into Dhubri, Bilasipara and South Salmara-Mankachar sub-divisions with 8 Land Revenue Circles, 7 Block Developments and 43 Gaon Panchayats (1971 census). However, after independence, rapid development of various types were undertaken, which transformed the settlements of the study area to a greater extent.

Chapter III, deals with the Geographical personality of the district, The study area, which is the western
continuation of the great plain of the mighty river Brahmaputra, forms the only corridor of Assam and is linked with the rest of the country. The area is composed of deep alluvial deposits of recent and sub-recent origin. The only structural variations are to be observed in a few isolated low hills or hillocks, exposing archian gniesses and in occasional outcrops of upper tertiary sandstone scattered to the north-eastern and extreme south of the district. There are also, some isolated tills or mound like raised features in the area. Barring these isolated hillocks or tills, there is no noticeable variation in the relief. The general slope of the district is from east to west (40 m to 30 m) and towards the channel of the mighty river. The district is draining by a number of streams of various orders, all of which ultimately discharge into the mighty river. The streams are the cause of frequent flood in a considerable part of the district particularly in the confluences of the major tributaries to the Brahmaputra. It is observed that the recurrence of flood in some localities and particularly the south bank region has significant impact over the growth of settlement, transport and communication system and economy of the area. The concentration of population and settlement are noticeably high in the flood free areas, leaving the flood prone areas sparsely populated and settled. One of the physiographic characters of some of the tributaries to the Brahmaputra flowing through the area have their gradual westward shift in the north-bank plain and eastward shift in the
south bank plain and it is the most in the case of the river Brahmaputra. This physiographic character of the streams results in gradual shifting of settlements adjacent to the streams in their directions of shift, silting in the bed and the presence of these streams have proved to be the vital cause of flood in the district.

The study area enjoys the 'Humid Mesothermal' climate with high temperature and heavy rainfall. The average annual temperature varies from $16^\circ c$ to $30^\circ c$ and rainfall from 2055 mm to 2618 mm. The number of rainy days with more than 2.5 mm rainfall varies from 82 days to 110 days and relative humidity above 80 per cent for most part of the year. The high humid climate with summer maximum temperature and rainfall creates favourable climatic conditions for paddy cultivation. The mild winter temperature above $12^\circ c$ and with dry or occasional rainfall favours the cultivation of various rabi crops profitably.

The soil of the study area falls into two major types, the highly productive new alluvium in the riparian tract of the valley, occurring at lower levels flanking the other type i.e. older alluvium above flood level, suitable for cultivation of all types of crops. Further, the old alluvium areas are commonly found in highlands, which are highly acidic and less suitable for cultivation and mostly covered by forests and a few tea gardens. Thus, the presence of large flood prone areas, streams, abandoned
channels of rivers, bils, chars, sandy areas, thatches - forest cover areas, a few tea gardens, hillocks, tillas, etc. restrict the growth of the majority of rural settlements in the district. In the extreme south-central and north-west and north-partly because of the availability of agricultural lands and other essential facilities, settlements are more with high density of population.

The socio-economic base of the district is essentially agricultural with 78.05 per cent of the working population in 1991, engaged in agriculture and activities associated with it and with 87.78 per cent of the total population (in 1991) living in the rural areas (only 12.22 per cent in urban areas).

The growth of population in the district has been discussed from pre-British period. During the period of 1901-1991, the area registers a population growth (Decennial) 462.37 per cent. Although, there has been influx of immigrants into the region all throughout the period, the exceptionally high decennial growth of population during the period 1951-1991, indicates greater proportion of birth over death and immigration. The majority of this unabated immigration took place mostly from Bangladesh. In 1991, the average population density of the district was 452 persons per square kilometre of area,
Jhawdanga Gaon Panchayat registered the highest density of population (1209 persons per sq.km), while Rangamati Gaon Panchayat registered the lowest (i.e. only 71 persons per sq.km). Interestingly, both of these Gaon Panchayats are situated in the south and north bank plain of the district.

There were altogether 1340 rural settlements (with 11,63,672 population) in the district in 1991. The growth of rural and urban settlements in the district during the period 1961-1991 are 1.36 per cent and 40 per cent, respectively. Salkocha Gaon Panchayat has the highest (96) number of settlements, while Mankachar Gaon Panchayat has the lowest (6) number of settlements. In the three subdivisions of the district, Dhubri and Bilasipara subdivisions has 3 urban centres each, while South Salmara-Mankachar subdivision, only one urban centre. Among the urban settlement, Dhubri is the only urban settlement registered over 60,000 population, while other six urban settlements with population varies between 6219 and 22,735 persons in 1991. The density of urban population is the highest (7736 persons per sq.km) in Dhubri town and it is the lowest (1578 persons per sq.km) in Chapar town. Moreover, Land Revenue circle-wise Gaon Panchayat area, distribution of population percentage of SC, ST and religionwise increase of population are also shown.

The movements of population and goods in the study area is highly dependent on roads, railways and water ways,
than on any other means of transport system. The physiographic condition and the presence of a number of streams in the area prevented the development of speedy and efficient transport network. Though the initial motorable road network and railways were developed by the Britishers, their remification and modernisation had been taken place during the post-independence period. In 1991, the district had 300 km surfaced, 842 km gravelled, and 15 km earthened road. In the same year, the district had 111 km national highway, 107 km state highway and 939 km other P.W.D. road, including 300 km surfaced road. The total density of road being 41 km per 100 sq.km. The length of metre gauge railway is only 59 km, connecting Dhubri the major regional urban and trade centre with Pakiragram via Golakganj. The length of navigable water ways is 300 km only, of which about 200 km is navigable by steamers and large country boat and the rest by small country boats. The growth and distribution of settlements in the region reflect visible relationship with the existing transport network.

The agriculture is the main occupation of the people of the district. Out of 78.05 per cent of the working population engaged in agriculture in 1991, 64.08 per cent was cultivator and 13.29 per cent was agricultural labour and 0.68 per cent was engaged in allied agricultural activities. Rice is the most important food crop of the
area, covering more than 59 per cent of the total cropped area, followed by wheat, jute, mustard, sugarcane, rape, pulses, potatoes, vegetables, tea etc. Jute and tea are the two major agricultural items of external trade. It is observed that the availability of agriculturally suitable land plays vital role in the concentration of rural population and rural settlements in the district.

The Dhubri district is very poorly industrialised, as compared to the other parts of the state. In 1991, the total number of industrial workers was 14,434 persons, which constituted only 28.21 per cent of the total working population. In 1991, the total number registered industries in the district was over 815, though some unregistered minor factories are also found in the study area. The majority of these industrial establishments are small scale and household industries. Most of the industries are concentrated in and around the six urban centres, namely Dhubri, Gauripur, Bilasipara, Chapar, Sapatgram and Mankachar. The main industries of the area are rice, flour and oil crushing mills, saw mills, tea processing units, plywood manufacturing units, a large number of brick and tile making units and quarrying fields, cane, bamboo, furniture works in numerous small units and various types of household industries. Besides, a match factory is in Dhubri urban centre. The impact of these industries upon the economy and socio-cultural environment of the region is quite insignificant.
Chapter IV, deals with the distribution pattern of rural and urban settlements and their spatial characteristics. The settlements of Dhubri district are arranged in remarkable variety of pattern and form. The villages are related to marked changes in physical and cultural geography within relatively short distance and successive movement of people from the adjoining districts and from different parts of the state or India, since time immemorial. It includes traditional pattern of fields and the villages in their field forms are the characteristics of agricultural landscape, which represent a synthetic complex of its physical and cultural setting.

The character of settlement sites varies from place to place and since the district is almost a plain, the houses are built in large cluster as per allocation of the agricultural land. Generally, the old villages are invariably found on the bank of rivers. In fertile levee areas of the plain the village site becomes more crowded and houses are constructed on raised or artificially raised grounds. Some migrants are found to settle in low lying rice and jute fields in the river valleys of the district. Small villages and isolated hamlets are also found in these areas.

The population of Dhubri district in 1991 was 13,25,653 persons of which 11,63,672 persons live in 1264
villages and 1,61,981 persons in 7 towns. The lowest order of settlements having less than 200 persons are mostly found in marshy tracts, chars and forest areas of the district. The next three higher grades having population 200-499, 500-999 and 1000-1499 are almost uniformly distributed, but the villages with population 1500-1999, 2000-4999 and above are not well distributed. The medium category villages with 200-499 and 500-999 population are large in number and in the alluvial plain region, but the villages with very high population are fewer in number and are found in higher alluvial areas of the district. The Chi-square test indicated that the environmental factors are responsible for the variation in the distribution of settlements in different parts of the area. There are three types or classes of settlements, namely, hamleted, semi-compact and compact according to their spatial arrangement of houses or occupancy units. The rural settlements recognised in the study area are of strassendorf (Linear), Haufendorf (Clustered), Ciflik (Square), Eschdorf (Semi-compact) and Marschufen-dorfer (Marsh) types.

The impact of the physical and cultural landscape on human occupancy is reflected in settlement size, pattern and shape. On the basis of population, area and spacing of settlements. The size, shape and spacing of settlements have given an impression of their geometrical pattern of
arrangement. The presence of considerable proportion of flood affected areas, marshy tracts, chars, rivers, streams, abandoned river beds, bils, hillocks, tillah, forests, growth of transport network, productivity of soil, regional variations in agricultural fields, land size and others attributes effects on the higher concentration of rural settlements with close apacing in certain areas or localities, leaving others sparsely settled.

The Dhubri district registers 3.78 per cent growth of rural settlements during the period 1961-1971, but due to inclusion of some villages in Kokrajhar district and some newly declared towns in Dhubri district, the number of rural settlements reduced to 1340 including 62 chars, 3 tea gardens and 76 uninhabited villages. The highest number of villages of the population size 500-999 persons, covers 23.73 per cent of the total rural settlements and 21.45 per cent of the total area under rural settlements and the greater number of villages of high population sizes are within the flood free areas. Out of 43 Gaon Panchayats of the rural areas of the district, the population of settled area in relation to total area is 100 per cent in 20 Gaon Panchayats, particularly in Agomani, Golakganj, Dhubri and Bilasipara Revenue Circle areas. The district has a total area of 2838 sq. km., including 35.59 sq. km. of 7 urban areas, 90 per cent of which is covered by inhabited rural
settlements or 90.25 per cent of total area under various types of settlements. The analysis of size-spacing relationship of settlements reveals that the growth of rural settlements in various areal units of the study area is mainly a function of population size. The correlation analysis between the Gaon Panchayatwise population and the Gaon Panchayatwise number of rural settlements shows that there are low positive correlation relationships, the value of $r$ being +0.31 at 0.05 probability level. Visibly deviation from the line of best fit is observed that out of 27 negatively deviated Gaon Panchayats, 4 Gaon Panchayats namely, Bisondai, Dainin Salmara, Jhawdanga and Mankachar, showed greater negative deviation, the growth of lower number of villages in relation to population sizes is attributed to greater proportion of flood affected areas, uncultivable marshy tracts, bilas, chars, river areas, etc. which compelled the people to concentrate in villages of larger areal sizes within the flood free areas. The villages of 4 Gaon Panchayats, such as, Parbatjowar, Rangamati, Raniganj and Salkocha show a fairly greater positive deviations, the growth of higher number of villages in relation to population size is attributed to the habitational behaviour of the Tribal people. It is observed that higher mean areal size of the villages and higher concentration of SC, ST, and flood effected people, who prefer to live in small villages, is the major cause for the growth of higher
number of rural settlements in relation to population size of the villages with permanent settlements for a long period without major political disturbance than flood affected villages.

The density of rural settlements, density of rural residential houses and inter-settlement spacing of rural settlements over the actual habitable space and rural settlements in each of the Gaon Panchayat are examined to find out the space settlement relationship. The Gaon Panchayats in the highest density group of rural residential houses are Jhawdanga, Mankachar, Rokakheta, Fakamari, Kukurmara, Bidyapara and Dharmasala Gaon Panchayats. All these Gaon Panchayats are placed either in the moderate or low inter-settlement spacing groups.

The common observations from all these analysis of space settlement relationship are that (i) in the Gaon Panchayats with higher proportion of non-habitable space, have higher rural settlement densities, as well as, relatively close spaced villages leaving lower proportion of arable land in between them and (ii) the density of rural residential houses maintains clear relation between concentration of population and rural settlements. Higher population and lower number of bigger villages lead greater compactness of the villages. It is observed that fifteen
Gaon Panchayats, namely, Jamaderhat, Dakhin Salmara, Sukchar, Fakamari, Kukurmara, Bisondai, Lakhimari, Hasdaha, Geramari, Bidyapara, Madhusoulmari, Parbatjowar, Joruar Bandihana, Lakhiganj and Bahalpur have moderately spaced compact villages with their high concentration over habitable space; Fakirganj, Airkata, Bauskata Ravatari, Monirchar Porarchar, Hajirhat, Kalapani, Jhaudanga, Mankachar, Chapar, Nayer Alga, Kajaikata, Rangamati, Patamari, Alikjhari, Boterhat, Halakura, Agomani and Satrasal Gaon Panchayats, on the contrary, have widely spaced and lowly compact villages with their low concentration over habitable space. The spatial characteristics of rural settlements within the areas of influence of the individual urban centres, namely, Mankachar, Dhubri, Gauripur, Golakganj, Bilasipara and Chapar render services to a maximum number of rural settlements, compared to their areas of influence. Despite of smaller volume of service facilities as compared to the regional urban centres, they emerge as urban places of local predominance. Another one urban centre of the region is identified in low service range to the rural communities.

The shape of the settlements (Gaon Panchayatwise) has been analysed and it is found that majority of the villages lie in triangular, square and hexagonal shapes. Such villages have relatively high population density and
pull generated by attractional forces like physical, cultural and economic. In the areas subjected to annual floods, there are villages with elongated shapes, while circular shapes are seen in the case of certain ancient villages of the study area.

The dispersonal analysis reveals that 23 Gaon Panchayats of the study area, namely Agomani, Alikjhari, Golakganj, Lakhimari, Sahebganj, Geramari, Patamari, Dharmasala, Parbatjowar, Rangamati, Mahamaya, Ambari Sadhubhass, Joruar Bandihana, Dakhin Salmara, Hajirhat Sukchar, Kukurmara, Jhawdanga and Mankachar, the villages dispersed with high uniformity. Most of the 20 villages, which are distributed over fertile tracts of land, where land fragmentation, flood prone low lying areas and forest cover Gaon Panchayats areas viz. Satrasal, Halakura, Boterhat, Bisndai, Hasdaha, Bidyapara, Madhusoulmari, Alomganj, Rangiganj, Barkanda, Salkocha, Chapar, Bahalpur, Nadertari, Jamaderhat, Fakirganj Airkata, Bauskata Ravatari, Monirchar Porarchar, Pakamari and Kalapani, have medium uniformity of settlement dispersion. The concentration of rural settlements is high in 12 Gaon Panchayats, namely, Sahebganj, Parbatjowar, Rangamati, Mahamaya, Ambari Sadhubhass, Joruar Bandihana, Rangiganj, Barkanda, Rokakhata, Salkocha, Nadertari and Jamaderhat, while it is moderate in 9 Gaon Panchayats, such as, Golakganj, Lakhimari, Chapar,

On the basis of dispersional and concentrational analysis 6 dispersional and concentrational regions are identified. Highest number of Gaon Panchayats are included in the region VI, i.e., villages dispersed with high uniformity and concentrated lowly. The 12 Gaon Panchayats of this region are Agomani, Alikjhari, Geramari, Patamari, Dharmasala, Kajaikata, Nayer Alga, Dakhin Salmara, Sukchar, Kukurmara, Jhawdanga and Mankachar. The lowest number of Gaon Panchayats included in region 1, i.e. villages dispersed with uniformity and concentrated moderately are Golakganj, Lakhimagi, Lakhiganj, and Hajirhat. Excepting these, 16 Gaon Panchayats, which identify themselves in similar dispersional and concentrational grading, all other Gaon Panchayats present variations in the trend of dispersion and concentration of rural settlements.

On the basis of centrality scores 106 significant rural service centres are identified in the region, out of...
a list of 195 rural settlements selected for examining their centrality (See Sub-Chapter 4.9 of Chapter IV(A). The number of rural service centres identified in Dhubri district is 106. These rural central places have been classified into 6 hierarchial orders. Only 2 rural service centres are identified in grade 1, which are Dharmasala and Mahamaya tops the list of centrality scores. It is observed that there are hierarchial gaps in the growth of rural service centres of all the Gaon Panchayats. The lowest hierarchial order i.e. grade VI with 52.83 per cent of total number of significant rural service centres, represents the highest proportion of rural central places. All these facts clearly indicate the recent growth of majority of the rural service centres. The number of rural service centres in relation to the total number of rural settlements is highest in two Gaon Panchayats, viz. Mahamaya and Lakhiganj (the ratio being 1:33), while it is the lowest in Agomani Gaon Panchayats (the ratio being 1:3). It is also observed that Alikjhari, Golakganj, Bisondai, Geramari, Mahamaya, Lakhiganj, Chapar, Fakirganj-Airkata, Bauskata Ravetari, Monirchar Porarchar, Hajirhat, and Mankachar Gaon Panchayats are in the lowest level, as regards the growth of rural places.

On the basis of an analysis on the spatial relationship of the central places of different categories as
identical field in the present work to the rural settlements, various Gaon Panchayats of the region are classified into 4 organisational regions of central places. As observed from the analysis, lower growth of central places registered in Halakura, Boterhat, Lakhimari, Patamari, Dharmasala, Bidyanaga, Madhusoulmari, Ambari Sadhubhasa, Nayer Alga, Kajaikata, Jamaderhat, Sukchar, Fakamari, Kalapani and Jhawdanga, while Alikjhari, Golakganj, Bisoradai, Geramari, Mahamaya, Lakhiganj, Chapar, Fakirganj Airkata, Bauskata Ravatari, Monirchar Porarchar and Mankachar Gaon Panchayats exhibit poor organisation of central places. Further, 2 out of 7 urban settlements are identified to have lower growth of central places within their respective areas of urban influence.

The Chapter IV(B) deals with the distribution pattern of urban settlements and their spatial characteristics. An analysis on the spatio-temporal growth of urban growth was very slow during pre-independence period. In 1901, the number of urban centre was only one with population of 3737 persons, which then increased to two in 1921 (Population 11,018 persons), registering a growth of 100 per cent during the period of 20 years. No new urban centre came up during the decades of 1921-1951, but within the period of 40 years (1951-1991) i.e. during the post-independence period 5 new urban centres came up—registering a growth rate of 250 per cent. An examination on the location of urban centres during the British period clearly exhibits that urban growth
was confined to either administrative or trade base points of the British administration. The location and growth of the 5 urban centres that have been grown up during the post-independence period, reflect the decentralisation of administrative, commercial and public utility and welfare services, as well as, the extension and ramification of the transport network. But, the concentration of industrial growth and commercial activities in and around certain selected urban areas, namely, Dhubri, Gauripur, Bilasipara and Mankachar, even at present impose policy control to the functional growth of the majority of the urban centres. As explained by the nearest neighbour analysis, the spatial distribution pattern of urban settlements in the urban system of the study area is uniform throughout the period of 1961-1991, but 1921-1951 period, show low regularity, while 1901-1911, there was a tendency of randomness, despite of the variations in the socio-economic policies of the British administration and the independent government.

In the later part of the chapter growth of urban centres, urban population from 1901-1991, degree of urbanisation, classes of urban centres with respect to population size, growth of towns by size-classes and town by civic status are analysed.

In combinational analysis of towns of the study area shows that towns which do not rank high in any occupation,
is considered as diversified or as not specializing in any service. Mankachar (Aj) and Chapar (CL) towns, respectively show agricultural labourers and cultivators as spatial functional types.

The settlement system has been defined as a man made organisation system of human habitational units, which exhibits its dynamism and growth both functional and spatial with the growing mobilization of resources goods, ideas and technology. For initial identification of the organisational setup of settlements in the region the nature of spatial interaction of the demographic mass has been examined with the help of gravity model. The isopotential based on interaction of overall important settlements level of rural and urban population, respectively, indicate a clear interaction that the population potential of Dhubri town is much higher than all the settlements under consideration, which indicates its predominating impact in all respects, on all the settlements of the region. The potential value decreases to the north, north-west, north-east and south beyond the isopotential line of 5000 persons per km., due to comparatively lesser and lesser development of transport and communication systems, low density of population, topography and agricultural productivity and therefore, the
interaction among the settlements decreases to some extent in these directions.

Chapter V, deals with the rank-size relationship of the urban settlement system in the study area, which shows the size disturbance is distinct in the urban settlement with a population below 10,000 persons and above 19,000 to 29,000 and consequently above 50,000 persons. In the urban settlement with a population less than 10,000 persons, the actual population is noticeably lower than the expected size. In the urban centres with a population above 19,000 to 29,000 persons, the population is less than what is expected. Dhubri town, which is the primary urban centre of the Dhubri district urban system, has a population higher than the expectation. However, in the urban settlements with a population of the order of 10,000 to 19,000 and above 50,000 persons, the deviation of actual population from the expected size is almost negligible. The distortion in the urban size hierarchy in the urban system indicates a real difference in the levels of economic development.

An analysis on inter-urban settlement distances reveals that in the urban system, the urban centres with more than 20,000 population have much higher inter-settlement distances than all other size-classes. Further, there are distinct higher size-class gap in the urban system. To examine the extent of the service areas of the individual
urban centres of the region and their importance to the rural communities, their influence areas have been delineated. It is observed that the majority of the urban centres with smaller population sizes have noticeably bigger influence areas. This indicates their higher service importance to the rural communities, despite of their smaller population sizes and functional growth. It is also observed that the number of urban centre with bigger influence areas in relation to the total number of higher urban centre is lower in the urban system. All these aspects, indicate that higher number of smaller urban centres have grown up in the whole of the district, very recently with close spacing, which maintain relationship to the concentration of population and to their needs for marketing facilities and public utility services rather than to functional growth and diversity. It is also observed that the urban system is poorly organised as compared to the urban system of the state.

Chapter VI, deals with the service status, pull of the service centres and spatial relationship of urban and rurban service centres to rural settlements. Here, the service status of all 53 service (rural and urban)centres, as specified by the Census of India, has been examined on the basis of their functional character by employing the rurban index (RI) for each of them. On the basis of these
analysis, 9 out of the 53 settlements of the region are identified as rural centres. A classification of 9 urban centres included in the urban system, on the basis of their service status excluding specialised urban functional services present a very interesting result. In Dhubri urban system, Dhubri town is identified in the highest status group, i.e., group 1. As substantiated in the chapter, it is in the top position of the hierarchy. Such ordering of the individual rural centres is also done on the basis of their service status for determining their overall service status rank.

In order to examine the amount of pull of the individual urban centres on the demographic mass, as well as, their future growth potentials, the inter-urban pull (IUP) values for each of them irrespective of their classification on the basis of RI values have been computed applying Stewarts concept of 'Demographic Energy'. A classification of the urban centres on the basis of their IUP values is done to identify the urban centres with their growth potentials. It is found that urban centres of Dhubri urban system included in status group 1 and 11, namely, Dhubri and Gauripur respectively, have higher growth potentials. Ranking of all the 7 urban centres, as specified by the Census of India, is done after computing their respective demographic mass, urban population.
potential, IUP values, IUP per unit areal points and IUP per unit demographic mass. Following these ranks, along with the ranks on the basis of RI values, the overall status:rank of the individual urban and rurban settlements are determined. In the Dhubri urban system, Dhubri town acquires the first rank as regards overall status.

It is to be noted that, only 5 urban centres of the district maintain true urban character. Besides, 6 urban centres including 1 regional urban centre and 2 rurban centres of the study area have higher future growth potentialities.

The generalised observations are that during the post-independence period, a good number of urban settlements have grown up with functional limitations following government policy of decentralisation of service facilities and majority of such urban centres render significant services to the rural communities. Although, the urban settlements represent an uniform pattern of the distribution all throughout the district and a considerable proportion of the urban settlements have growth potentialities, the concentration of specialised functional and commercial activities at certain selected urban places impose policy restrictions in their functional growth. The growth of rural settlements in the area is observed to be a function of population size. The villages of larger areal size are
commonly located in the SC, ST majority and flood affected Gaon Panchayats, as well as, in Gaon Panchayats with political stability of the past. The Gaon Panchayats with higher proportion of non-habitable space, represent high rural settlement density, as well as, close-spacing of the villages. The density of rural residential houses maintains clear relation to population size and the number of rural settlements. The two urban centres, viz. Gauripur and Mankachar render services to a maximum number of rural settlements, composed to their service areas. From the dispersional and concentrational analysis, it appears that 12 Gaon Panchayats identify themselves in similar dispersional and concentrational grading, while other Gaon Panchayats have differential trend of dispersion and concentration of rural settlements. In general, the rural settlements settled partly by indigenous and partly by non-indigenous population are located in char lands, flood-prone areas and marshy tract areas. In the greater part of the Dhubri urban system, the growth of central places in relation to the total number of settlements is low. Considering all the analysis incorporated in this chapter regarding spatial distribution of settlements, almost all the Gaon Panchayats of Mankachar, South Salmara and a few in Dhubri and Bilasipara Land Revenue Circles are identified as under developed.
The chapter VII, deals with the impacts of physiography, river, transport network and agricultural fields on settlement pattern. The physiographic condition of the region has noticeable impact on human settlements in the selection of settlement sites, as man is guided by the physical forces, like relief, soil, climate, water and natural vegetation. Thus, physical landscape and topographic variations have definite bearing on the distribution of population, settlements, settlement pattern and other activities of mankind of the district. The land near the river Brahmaputra is subject to floods and is covered by dense grass reeds, swamps, chars and spans of sands. It is a well defined physiographic unit, almost a monotonous leveled alluvial plain, dotted with lowly elevated hillocks. In the hilly areas settlement are gradually decreasing and isolated hamlets and in some localities semi-compact villages are remarkable.

Flood and gradual change of river courses have a great impact on the distribution of settlements and settlement pattern. From times immemorial, the rivers of the Brahmaputra plain have been changing their courses through magnitude and intensity of the change vary from place to place and the worst sufferer in this respect, is the lower Brahmaputra plain of Assam - is the Dhubri district, the southern bank plain of which, becomes a continuous pool of water during every rainy season.
The Brahmaputra receives here five big rivers, namely, Ganga-dhar, Tipkai, Gaurang, Champamati and Jinjiram. The rivers being most notorious for shifting their courses, gain significantly in a great volume of water and load in an area of very gentle slope from east to west. The main river Brahmaputra itself becomes very much liable to change its course, while in this lower plain, the surplus body of water can not bifurcate into channels from its only narrow corridor and thus the frequency and intensity of floods. Silting in the beds and change in the course increases and such changes in the river courses in the study area have often adversely affected most of the rural areas and urban centres on or adjacent to their banks by severe erosion. The miseries caused by the high floods of the river Brahmaputra and its tributaries, beggers description. Villages situated on the river banks or flood plains are submerged, paddy fields are turned into vast sheets of water, standing crops are destroyed, cattle are swept away and hundreds and thousands of cultivators, fisherman and other people living in these areas rendered homeless. All important lines of communication are snapped, even movement of people from one place to the other or even from one house to the other is done either by boat or raft or anything that can float. Life hinges on relief provided by govt. or public, but when floods subside pestilence create havoc among man and cattle alike. In 1974,
five successive waves of floods hit Assam and Dhubri district was one of the worst affected districts. It was estimated that crops area affected by floods in the district was of the order of a lakh hectares and about a lakh of its inhabitants suffered, as a result. So, menacing were the flood that nearly 15 thousand houses were damaged. In 1991, flood alone made about one and half lakh people landless and homeless in this area without any scope of rehabilitation. In addition, a major portion of south Salmara town, Sukchar town including govt. offices, schools, etc. have completely dislocated under the threat of unabated erosion, Dhubri, Gauripur, Bilasipara, Chapar and Solakganj urban areas are partly eroded. The number of settlements eroded partly or fully by the rivers, population and area affected is shown in table 7.1 and Appendix VII.

Now, it is obvious from the above statement that large part of rural areas, as well as, most of the urban centres of Dhubri district are washed away by flood water every year, causes countless troubles in addition to the decline of rural settlements and sharply changes the existing pattern of the settlements. Number of villages and urban areas in the region under study, however, acquired various shapes and forms, such as, elongated, rectangular, triangular, square, crescent, circular, semi-circular, etc. mainly due to the end product of the interplay most of the
rivers and various other physico-cultural factors through different periods of time. Therefore, to protect the settlements from the adverse affects of floods, some measures are suggested to tackle the problems to some extent with a view to protect and develop both the rural and urban areas located along the rivers and flood plain areas.

From the comparison between road density and shape index with the help of correlation and regression (see chapter VII), it is found that there is no relationship between these two variables in the settlement pattern in Dhubri district. The roads and railway lines have significant impact on settlement density of the area. To some extent, the transport network has influenced on settlement pattern in Halakura, Agomani, Satrasal, Lakhimari, Golakganj, Sahebganj, Bisondai, Hasdaha, Dharmasala, Madhusulmari, Bidyapara, Geramari, Atomganj, Mahamaya, Barkanda, Rokakhata, Raniganj, Lakhiganj, Parbatjowar, Salkocho, Chapar and Bahalpur Gaon Panchayats, where mostly triangular, rectangular, hexagonal and elongated shapes of villages developed along the roads, railways and other communication lines, but these have not affected the settlement pattern of the region.

The agricultural field plays an important role in the development of settlement pattern in Dhubri district
The correlation analysis between the Gaon Panchayatwise shape index and the density of sown area reveals that a positive relationship exists between the two variables. It is found that the density of agricultural field significantly controls the shape of the settlements of the study area. In Dhubri and Bilasipara subdivisions, the settlements of the Gaon Panchayats show all the shapes of the villages in presence of forests, agricultural fields, road sides, cross-road sites, low lying flood effected area along the bank of rivers show triangular to elongated shapes, while in the South Salmara -Mankachar sub-division show triangular, square, hexagonal and elongated shapes.

All such shapes of the villages in all the Gaon Panchayats of the study area are due to the cumulative influence of physiography, topography, drainage system, road railways, agricultural fields, trades, commercial and residential places of the area.

The chapter VIII, deals with the areal differences in the levels of man-land relationship, socio-economic development, etc. rural and urban relations, in which it is observed that the villages that lie around 7 urban centres are 1340 in number, and hence given an average relationship of 191 (Settlements) per town. Thus, the
number of villages associated with such towns, not only indicates the meagreness of urbanisation, but also the dominance of the agricultural economy, so much so that the urban centres themselves assume some of the prevailing rural character. The most fundamental relationship between the rural and urban economies is that the urban people do not grow their own food and depend upon the farmer for sustenance, the farmers on the other hand depend on to the towns for selling their produce and for obtaining manufactured goods, technical services, etc. Four out of seven towns, which are really urban in character and contain more than one half of the total urban population, bear closer rural urban relationship, as compared to other three have about one-fifth of the urban population of the region, but do not substantially serve the needs of the rural areas, although, the rural areas provide them food grains, vegetables, milk, fuel and other agricultural products. The urban condition in terms of both relative and absolute are very poor, have little resources to support large number of villages and the number of towns are also inadequate in relation to the large size of population of the study area.

In 1991 census, Dhubri district recorded 27.30 per cent, as active workers and 72.70 per cent, as non-workers and of this active workers about 24 per cent in rural and
3.20 per cent in urban areas. In fact 73.21 per cent of the total active workers are agricultural workers of rural inhabitants, while only 3.96 per cent active workers obtain their livelihood from household industries, 1.91 per cent from constructional, 2.65 per cent from live-stock, forestry, hunting, fishing etc., 0.02 per cent from mining-quaring, 7.08 per cent from trade commerce, 1.62 per cent from transportation, storage, but a highest percentage of these workers were from rural areas.

It was found that over 87 per cent of the total population of the study area lives in rural areas and a very low percentage i.e. 12.22 per cent lives in urban areas. According to 1991 census report, in rural areas 27.46 per cent of the total population were active workers, whereas in urban areas this figure was low i.e. 11.71 per cent only. The fact that urban areas have so little working population, is a matter of concern and indicates the need for broadening the economic base. Table 8.1 shows 9 broad categories of occupation in rural and urban areas.

Amongst the active workers (1991 Census), in rural areas 82.36 per cent were male and only 5.94 per cent were female, as compared to this, in urban areas, 10.80 per cent were male and only 0.90 per cent were female. Male and female participation in the 9 broad occupations in rural
and urban areas are also summerised in the table g.1. A comparative analysis shows that both the male and female population of the rural areas have many more active workers than that of their urban counterparts. It seems natural because, rural areas offer a good deal of employment in the agricultural sectors and by the same measure, female of rural areas represent a high percentage of employment in occupation, as compared to their urban counterparts. It may be noted that in all the services, male has higher percentage than that of female. It is interesting to note that sex ratio of the area is ever increasing and it is clear from the Table g.1, that in near future, the number of female population of the study area will be either equal or exceed the male population both in rural and urban areas along with occupational patterns.

The percentage of literacy in the State of Assam is 43.20 per cent, but in Dhubri district it has only 29.83 per cent of its population in literacy group. The rural areas of the region have a lower percentage of literate population (25.35 per cent), as compared to the figure (i.e. 28.10 per cent) for the State, as a whole, on the contrary the urban areas have slightly higher percentage (58.23 per cent), as compared to the figure (53.60) for the State as a whole. In urban areas the rate
of literacy is higher, because of more facilities for education. The percentage of literacy among males is higher than among the females in both rural and urban population of the study area. It can be concluded that total literacy of the district will increase with the increase of literacy among the females.

An examination on the man-land relationship reveals that there is close relation between the distribution of rural population and rural settlements with arable land size. The correlation between Gaon Panchayat-wise arable land size and number of rural settlements has been tested taking the former as independent variable and the latter as dependent variable. The two variables are found to be positively correlated \( r = +0.50 \) at .01 probability level. From the analysis of the Gaon Panchayat-wise physiological density, it is observed that the pressure of population over arable land is significantly high in 17 Gaon Panchayats, viz. Dharmasala, Rokakhata, Dakhin Salmara, Fakamari, Jhawdanga, Mankachar, Agomani, Golakganj, Binsonail Sahebganj, Geramari, Bidyapara, Madhusoulmari, Mahamaya, Bahalpur, Fakirganj Airkata and Kukurmara. Unless, functional activities other than agriculture are developed to absorb the growing population, land resource is likely to exert restrictive forces in the spatial growth and development of rural settlements in
these Gaon Panchayats. Such population pressure over agricultural land in the above Gaon Panchayats, may lead to migration of marginal farmers to the neighbouring Gaon Panchayats of lower physiological densities.

An examination on various aspects of socio-economic situation of the district along with their spatial variation, as have already been analysed in this work provide certain basic information regarding the organisations of 3 organisational regions of settlements are identified in Dhubri district, which are likely to provide a basis for settlement organisational planning. The 19 Gaon Panchayats identified at the lowest level of socio-economic developments are Lakhiganj, Boterhat, Patamari, Bahalpur, Fakirganj Airkata, Hajirhat, Lakhimari, Mahamaya, Parbatjowar, Halakura, Satrasal, Hasdaha, Ambari Sadhubhasa, Nayer Alga, Nadertari, Jamaderhat, Chapar, Monirchar Porarchar and Rangamati.

The areal difference in the levels of socio-economic development, 3 important socio-economic variables are selected for finding out the areal differences in the levels of socio-economic development in the region through the technique of Principal Component analysis - indicate one major dimension or component of development. On the basis of the method of First Principle Component, 2 Gaon Panchayats, viz. Golakganj and Madhusoulmari, identified as
as highly developed and 4 Gaon Panchayats, namely, Jhawdanga, Agomani, Rokakhata and Mankachar are identified as under developed. 10 Gaon Panchayats, such as, Mahamaya, Satrasal, Boterhat, Bisondai, Sahebganj, Bidyapara, Barkanda, Geramari, Lakhiganj, and Sukchar are observed to be moderately developed, under the existing socio-economic situation in the region. It is clearly noticed that the remaining majority (i.e. 27 Gaon Panchayats) of the Gaon Panchayats show reversed result in the name of development. Further, this principal component and others also indicate that the economic development of the region depends to a great extent on the increasing intensity of cropping or on diversified use of land for agriculture.

All types of settlements in Dhubri district are in primary stage and unplanned. The settlements of a region may be well planned and geometric schemes be drawn for their arrangement. One may study them in the manners, such as, (i) planning in relation to locational efficiency of land use, marketing, living conditions, etc. (ii) in relation to current economic well being and social dynamics and demands of modernisation (iii) the service-villages and rural service centres as agents of rural change and (iv) the infrastructural development for rural uplift including planning of rural houses and buildings.
The Gaon Panchayatwise level of disparities in the pattern of rural development can be analysed in terms of the development in the field of agriculture, industries, education, health and family welfare and transport and communication, etc.

Since the inception of rural development programmes, the planners, policy makers, economists and scholars have proposed a number of planning strategies and only a few of them, such as, Rozeeka (1964) has recommended 'Geo-project approach' for rural planning, R.C. Tewari (1984), in his study of the rural settlements of the lower Ganga-Yamuna Doab, has suggested 6 strategies for rural planning, while Bhadauria and Dua (1986), on the basis of their studies in the Tarai Region of eastern U.P., have made 5 guide lines for formulating balanced development plans.

On the basis of the preceding discussion, the researcher concisely proposed the following three guide lines for rural and settlement planning of the study area:

(i) A details survey of each village should be conducted by the Gaon Panchayat or Block level authorities with the involvement of village people. This survey should examine in details, the human and natural resources of the village for the demonstration of actual inter village disparities in all levels.
(ii) The formulation and implementation of plans for the development of rural settlements and rural areas should be carried out, only in accordance with the imbalance between the distribution of natural and human resources with people's co-operation and active participation, must be encouraged at all stages in the plan formulation and implementation, and

(iii) The rural urban plans should be adopted on trial and error method to meet the basic needs of the rural urban areas and the implemented plans should be evaluated thoroughly by various govt. and non-Govt. agencies should be duly incorporated in the formulation of future plans in the study area.

CONCLUSION

From the above findings, the settlement pattern of Dhubri district exhibit the characteristics of agricultural society. The way - the agricultural activities are carried on with obstructive natural elements, speak for poorly developed socio-economic base of the inhabitants and the process of growth of settlements. But, there are wide variations in the development of settlement pattern, due to topographical, transportational and functional gaps among
various localities of the study area. To remove such regional disparities, the Dhubri district requires a radical planning of the occupation units. From the findings investigated in the present work in the study area present the following generalised facts:

(1) The lack of knowledge of land utilisation is a major handicap for socio-economic, as well as, settlement planning and the higher degree of agricultural dependency, which is reflected in the growth and distribution of rural settlements, indicate that during the post-independence period, the Govt. policy of decentralisation of public utility and welfare services, has resulted only in the growth of a number of service centres, but no effective policy is introduced to divert the growing rural population towards other economic activities for minimising the pressure of the rural masses on agricultural land. The effect of such agricultural dependency result is very high physiological density in the Gaon Panchayats of Jhawdanga, Dakhin Calmara, Madhusoulmari, Mankachar, Dharmasala, Rokakhata, Sahebganj and Salkocha. For lowering population pressure in agricultural land, these Gaon Panchayats require speedy functional diversification.

(2) The growth and distribution of rural settlements, as well as, the distribution of population are highly influenced by the location of greater proportion of flood
affected areas in the Gaon Panchayats of Fakirganj Airkata, Bauskata Ravatari, Monirchar Porarchar, Dakhin Salmara, Hajirhat, Sukchar, Pakamari, Kalapani, Nayer Alga, Kajai-kata, Joruar Bandihana, Ambari Sadhubhasa, Alomganj, Geramari, Bidyapara, Patamari, Lakhimari and Alikjhari. These Gaon Panchayats deserve prompt attention for effective flood control and stabilisation of the shifting courses of the streams, which will also ascertain agricultural productivity for the agrarian rural population.

(3) The growth of rural places in relation to both the number of rural settlements and total rural population is very low and distribution is quite uneven in the Gaon Panchayats of Alikjhari, Golakganj, Bisondai, Geramari, Mahamaya, Lukhiganj, Chapar, Fakirganj Airkata, Bauskata Ravatari, Monirchar Porarchar, Hajirhat and Mankachar. This has been resulted by the disproportionate distribution and extension of service facilities among various Gaon Panchayats. These Gaon Panchayats therefore require special attention for speedy extension of public utility and community welfare services.

(4) Based on spatial interaction of the demographic mass, functional association, pattern, relation and movement of traffic, goods, and people, the settlements of the area organised into only one settlement system the Dhubri settlement system. The economic uplift of rural communities
are basically tied up to the functional growth of the regional centre - Dhubri town. A second settlement system is likely to emerge in future, covering the whole southern part of the valley, with Mankachar, Singimari, Sukchar and South Salmara, as its functional basis, considering the gradual growth, distribution of central places and isolation of the region from the comparatively more developed northern part of the district in the study area, though the existing urban system is in its very initial stage of growth and organisation for want of needful potentialities and dynamic functional base.

(5) For the lack of industrialisation of major importance and expansion of specialised functional activities based on industrial and commercial growth, the majority of the urban centres preserve greater proportion of rural functions and character. Due to stagnancy in the functional growth, such urban settlement have services to offer the rural settlements, within their service area (influence area). This limitation of the smaller urban centres stands as an obstacle in the functional growth and development of both rural central places and the rural settlements.

(6) The movement of traffic, people and goods indicate that there is a relationship or linkage gap between the peripheral areas of the existing only urban system with
its functional core. This gap of the peripheral areas results in its lower level of socio-economic growth, which is justified by the identification of 19 Gaon Panchayats, such as, Lakhiganj, Boterhat, Patamari, Pahalpur, Fakirganj Airkata, Hajirhat, Lakhiganj, Mahamaya, Farbatjowar, Halakura, Satrasal, Hasdaha, Ambari Sadhubhasa, Nayer Alga, Naderturi, Jamaderhat, Chapur, Monirchar Porarchar and Rangamati, through the analysis related to chapter VII. This gap also results in the concentration of the majority of the rural service centres within a radius 50 km from Dhubri town.

(7) As observed from rural-urban, man-land relationship, socio-economic situation and the first principal component analysis of the major dimension for the socio-economic uplift of the rural masses to use agricultural land intensively. At present, increased intensity of cropping is observed in the Gaon Panchayats with higher concentration of immigrant population in the flood prone lowlying areas mostly of the river Brahmaputra plain. Diversification of agricultural activities through intensive use of land may also absorb a considerable proportion of the growing rural workforce of the region.

(8) Finally, a vast tract of the region covered by Fakirganj Airkata, Bauskata Ravatari, Monirchar Porarchar, Lakhin Salmara, Hajirhat, Sukchar, Pakamari, Kalapuri, in south bank plain and Fatamari, Bidyapara, Alomganj,
Parbatjowar, Rangamati, Mahamaya, Bidyapara, Geramari, Kajaikata, Ambari Sadhubhasa and Nayer Alga in north bank plain of Brahmaputra is under developed from the socio-economic point of view. These Gaon Panchayats require immediate developmental plan priority for removal of areal disparity. Rangamati and Parbatjowar (almost) being Tribal majority Gaon Panchayats necessitates spatial consideration in this regard taking into account the heterogeneous population composition of the region, where communal sentiment of deprivation may lead to socio-cultural disintegration.

For the overall socio-economic growth and organisation of settlements in all respects, the Dhubri district necessitates the following planning and administrative considerations:

(1) Introduction of Government policy for the growth of some kind of major industrial units nearer to the regional urban centre of Dhubri town and decentralisation of subsidiary and small scale industrial units to the urban places and rural central places serving higher number of rural settlements. This will impart functional diversity of the smaller urban and rural central places and will improve their relation/linkage, etc. with the functional core through trading and transportational activities. This will also help in the diversion of the
rural work force into the non-agricultural activities and in the removal of the functional gap between the core and the periphery.

(2) Instead of concentrating the regional distribution of the major consumer and industrial commodities at the regional urban centre, such distributional activities should be decentralised on spatial considerations. As, at present the major portion of such activities are vested on private distributors, Govt. policy control over trade licensing is essential in this regard. The establishment of a number of regional distribution base points on spatial consideration will enhance the functional activities of the smaller urban centres.

(3) For immediate economic uplift to the rural masses under the existing socio-economic setup, spatial agricultural programmes for increasing the intensity of cropping, as well as for diversification of agricultural activities with minimum use of land, such as, dairy farming, poultry farming, fish farming, raising of meat producing animals, planting trees for ecological balance and financial benefits, etc. are to be introduced with liberal plan incentives. Phasewise programme should also be implemented for reclamation of the non-cultivable waste lands. Like other parts of the state, a bridge should be constructed across the river Brahmaputra, on top priority basis to have an easy passage between the
north and south bank plains of the district, in order to have socio-economic and cultural balance between them.

(4) For the removal of areal disparities in the levels of socio-economic development, the whole of the Dhubri district is to be divided into three broad planning regions, such as:

(a) Developed region: Jhawdanga, Dakhin Salmara, Mankachar, Rokakhata, Sahebganj, Madhusoulmari and Salkocha Gaon Panchayat.

(b) Moderately developed region: Golakganj, Agomari, Alikjhari, Bisor, Bidyapara, Geramari, Alomganj, Barkanda, Raniganj, Kajaikata, Joruar Bandihana, Sukchar, Bauskata Ravatari, Kukurmara, Sukchar and Pakamari Gaon Panchayats and

(c) Under developed region: Lakhiganj, Boterhat, Patemari, Bahalpur, Fakirganj Airkata, Hajirhat, Lakhimari, Mahamaya, Parbatjowar, Halakura, Satrasal, Hasdaha, Ambori Sadhubhassa, Nayer Alga, Nadertari, Jamaderhat, Chapar, Monirchar Porarchar and Rangamati Gaon Panchayats.

The plan priority should be fixed as per identification grades of these planning regions.

These are some of the simple and practical suggestions, which the author has been able to make out in
favour of spatial organisation and socio-economic development of the settlements of Dhubri district, on the basis of his investigation.

The work as summarised and concluded, has been, as a whole, an observation on the spatial organisation of settlement patterns, examined in the perspective of spatial interaction and relationship among them, growth and distribution of central places and in the context of the existing socio-economic situation of Dhubri district. The basic questions raised in chapter 1, on the basis of certain local assumptions and hypothesis have been dealt with and assumed to a reasonable extent, whereby there has been a meaningful drive to understand the organisational system of settlements of the region in relation to the spatial and functional characteristics of their constituent habitational units. The work presents clear exposition of only one organisational system of settlements, with the growth of central places of various hierarchial orders to which rural communities have direct or indirect functional and service association. But, the functional and service status of the central places, as well as, higher agricultural dependency of the vast majority of the rural population indicate that the settlement systems of the rural population indicate that the settlement systems of the region are in primary to developing stage and as such, it appears to be un-reasonable to compare them with any pre-tested method of human geography.
The organisational analysis of settlements presented in this work, however, opens a wide field of research in two important directions, viz. (a) an investigation on the impact of land productivity, intensity of cropping and amount of diversification of agricultural activities, on the growth and distribution of rural settlements, settlement pattern and rural central places within the urban system of the region may provide a strong socio-economic and organisational planning base of settlements and (b) an analysis on the nature and amount of functional changes needed within the service areas of the individual urban settlements, considering them as micro-regional units in the urban system of the region can provide a micro-level planning strategy. The present work being a regional study, exhibits the general organisational characteristics of settlements under the conceptual frame work of settlement system with its application in the agrarian economy of Dhubri district.

This study may be considered to be very vital to the planners of rural development for the introduction of more public services, so that the area concerned may be benefited with a sizeable growth of service centres. The present work also exhibits the general characteristics of settlement pattern, based on physico-cultural basis. It is
hoped that the study of this type would stimulate the interest of the settlement geographers, particularly of the north-east India, where the study on settlements is in a preliminary stage.