CHAPTER - 7
SUMMARY AND CONCLUSIONS

This chapter sums up the research findings of all the aspects of Human Settlements in South 24 Parganas as presented in the foregoing chapters.

In this region of marginal littorals, where land formation is still continuing, coastal hazards and other vagaries of nature continue to hamper the development process; Human Settlements reflect a man's constant battle for survival as part of the man-environment interaction.

The physical and ecological factors (Chapter 2) have given this tract a regional distinction. The delatic estuaries, mangrove vegetation, coupled with the tidal complications further divide the region into distinct subregions. A marked distinction is observed between the Stable Delta in the North and the immediate littoral of the Active Delta where the land is still in the process of formation. This is exemplified through new evolution of mud flats, shifting sand banks and shoals; complex dune ridges and mangrove swamps. The Stable Delta is further divided into the Western Hugli Side Flats, The Middle Mature Delta of the Hugli and the Piyali Bidyadhari Plains in the East. The storehouse of the Sundarbans, the Active Delta, can be further
divided into the largely deforested Western Sundarbans, in comparison to the largely forested Middle and the Eastern Interior Sundarbans. The settlement types, forms and patterns are distinct in all the subregions.

Before a detailed settlement analysis, a study of the population resources of the area (Chapter 3) in addition to the physical and natural resources was considered essential to understand the nature of the Human Settlements. The findings reveal that the hypothesis regarding population size, density, as well as changes in density have a tendency to increase from the littoral margin towards the interior. Besides, there is a marked contrast between the Active and the Stable Delta.

Again, within the micro regions, the highest density in the Stable Delta were found to be in the Western Hugli Side Flats and in the Active Delta the same was true in case of the Western Sundarbans. Again it was observed that strikingly high population densities occur in the 42 urban centres of the Stable Delta accompanied by a high rate of change during 1981 and 1991 (urban centres being conspicuously absent in the Active Delta). The other observations made regarding the population characteristics include a balanced and improving sex-ratio in the area, a higher male literacy and a much higher urban literacy. Again the sched-
uled caste population is much higher than the scheduled tribe population; the work participation rates being clearly in favour of males and highly unfavourable in case of females. The dependency rate is much higher in the urban areas as compared to the rural areas. The population growth rates are higher in the Stable Delta compared to the littoral area. As such, greater pressure of population is experienced on the resources of the interior land specially marked by the urban areas.

The analysis of settlement characteristics (Chapter 4) reveals that the cultural landscape of the district began changing rapidly only in recent times. A history of origin of settlements in this area reveals that the early settlements in this region date back to the Pre-Aryan age. The Sundarbans reclamation, however, dates back to the British regime, when large scale land survey and reclamation work started. Today, the littoral portion also is by and large settled. Initially, majority of the settlers came from landless families, apart from the tribal migrants (Chapters 5 and 6). Later, refugees from the erstwhile East Pakistan (Bangladesh) settled in the Northern part of the district as well as in the Eastern Sundarbans.

The settlements of Deltaic South 24 Parganas are associated closely with the regional personality of the area (Chapter 4) and vary in types from nucleated and agglomerat-
ed through semi-nucleated to dispersed and highly dispersed varieties. Nucleation reaches its fullest form towards the North (near Calcutta District), and within the Stable Delta as one proceeds towards the East; the nucleated type is replaced by the semi-nucleated ones. The transition is not only a West to East feature but also a North to South one. Thus in the Active Delta, semi-nucleated villages in the North and West are replaced by dispersed and highly dispersed villages towards the South and South East. The external forms too undergo changes from nucleated through semi-nucleated to loose-knit villages; apart from a wide variety of shapes and forms discernable in various parts of the delta.

In the next section of the chapter, dispersion analysis of rural settlements indicates that the inter settlement distances fall as one moves from the littoral towards the interior. Again, the nearest neighbour analysis reveals that the trend in spatial distribution of settlements is more regular than random and shows a tendency to move towards uniformity in the Active Delta.

The urban settlements all located in the Stable Delta, reveal large spacings and point towards a near clustering phenomena quite different from that of the rural settlements. Their numbers also reveal a slow growth since 1901.
Since 1951, however, the pace of growth has been faster, with a sudden spurt in growth in the decade 1981 and 91, when the urban settlements rose to 42 in number. But still Class I towns are conspicuously absent in the area due to the overshadowing influence of Calcutta Metropolis. The Rank-Size Rule reveals that Budge Budge is the first ranking town followed by Panchur, having nearly almost double the population of Panchur.

A reconnaissance survey of 200 villages, brings out further contrasts in the patterns of Human Settlements in the Active and Stable Delta. The settlements in the Stable Delta are much older than those in the Active Delta. The proportion of migrant population is higher in the Active Delta. Here the settlements show a dispersed pattern and than that of a clustered one of the Stable Delta. The proportion of pucca houses is higher in the settlements of the Stable Delta indicating a better quality of housing here than in the Active Delta. The economic activities of the villages also show a transition from a primary base (agriculture, forestry, fishing) in the southern littoral to a more specialized agriculture and market gardening in the Stable Delta, towards Calcutta metropolis. In amenities and transport, the stable Delta exhibits better infrastructure and connectivity.

The quality of Human Settlements has been represented
by a cumulative index of seven developmental indicators. They are:

(i) Proportion of pucca houses,
(ii) Proportion of villages having tubewells for safe drinking water,
(iii) Proportion of total irrigated agricultural land per village,
(iv) Proportion of villages having access to a metalled road,
(v) Proportion of villages having schools,
(vi) Proportion of villages having health institutions and lastly
(vii) Proportion of villages having the facility of credit institutions.

This exercise reveals that 48 villages out of 100 in the Active Delta and are at the lowest level of development. 23 villages out of 100 villages selected from the Stable Delta are also at the same developmental level.

Finally, Chapter 6 provides an insight into the population and settlement characteristics of 400 surveyed households. On population, the observations speak of bigger family sizes in the study area, a high fertility rate, with
high percentages of child population, lower female age at marriage and high proportions of migration in the Active Delta. Marked contrasts are seen not only between the Active and the Stable Deltas but also between the 6 subregions. Though 57% of the reported population is literate, proportions attaining higher education levels are few.

Insight into morbidity and mortality indicate that stomach related gastro entrities followed by asthma are serious diseases of the region even claiming human lives. Mortality is further aggravated due to the lower hygiene level of the families. Family planning manifests itself through only female sterilization for those few who have adopted it. Midwifery exists in a large number of delivery cases.

The next section highlights the environmental disasters and their consequences. It is observed that 88% of the families were affected by recent calamities (during survey in 1992).

The following section highlights the findings of an in-depth study of the pattern of interaction, commutation, frequency and purpose of movements by families. For specialized functions, urban centres specially Calcutta have exerted a dominating influence across distance barriers. In certain pockets of the Stable Delta, straight local train
connectivity with Calcutta has sprung up the 'Commuters Zone'; surprisingly even extending as far as Diamond Harbour, Mathurapur, MandirBazar; besides the nearby block of Sonarpur.

The distance range of commutation is observed to be high in case of employment, specialised medical facilities, and special shopping, whereas higher frequency of purchases is noticeable for daily necessities and provisions purchased by the families, rather than for medicines and special shopping.

The physical quality of housing is derived from a composite index of five indicators (Viz percentage of pucca houses, households having electricity connection, safe drinking water supply, toilet and at least 3 rooms to a family). The physical quality of housing appeared to be the highest in the Middle Mature Delta, followed by the Western Hugli Side Flats, Piyali Bidyadhari Plains and the Western, Middle and Eastern Sundarbans in descending order.

CONCLUSION

Today, when mankind is really concerned about sustainable Human Settlements and the World Summit has just been hosted at Instanbul (Habitat II), the area under concern still dwells in the realm of backwardness and a poor quality of housing and settlements. Thus certain improvements can
be suggested in this region based on field-work experience in this area:

1. Strengthening the lengthy stretches of the earthen embankments along the meanderous waterways in the Southern part of the district. This can be done by using more resistant material like brick and mortar to stand the onslaught of cyclones and tidal bores.

2. Installation of cyclone warning system equipped by efficient staff and creation of cyclone shelters.

3. Provision of better, low cost housing facilities. Mud walls can be replaced by bricks that can be locally manufactured at the same time generating local employment.

4. Extension of safe drinking water through more tubewell installations.

5. Electric connections should be extended to both the Stable and the Active Deltas, specially in the remote Sundarbans which is virtually non-electrified as noticed during the period of survey.

6. The village roads of the Eastern Interior Sundarbans that gets transformed into knee deep mud with each rain, should be paved by creating local village self employment schemes.
7. Provision of better education, health for all, and popularisation of family planning measures, so that dependency burden on workers can be lessened.

8. In areas of water transport, better facilities as well as mechanisation of boats should be done, in order to bring in a speedy communication system.

9. In order to eradicate poverty, farmers should have easy access to farming inputs, salt tolerating crops should be introduced; along with an extension of mechanisation to fishermen.

10. In the villages next to the tiger reserve, protection measure should be taken against encroachment of the wild life that often proves a threat to the villagers. Many of them die through tiger attacks while illegally gathering forest produce. Moreover dearth of medical facilities in these parts together with slow, irregular and ineffective water transport are the causes resulting in deaths of tiger attacked and emergency case victims. Such facts should not only be the Government's concern but also should invite a peoples participation, so that the government is made cautious of initiating development at these grassroots.

11. The illegal gathering of forest produce should be regulated by introducing social forestry, small scale industries or handicrafts; generating rural employment
and income.

12. Tourism can be encouraged in this area, at the same time, efforts should be made to exercise control so that the environment, ecology and life-style of the coastal people are not adversely affected.

13. The district specially the Sundarbans that does not lack in resources, should therefore be converted into a resource base. This can be achieved by backing up the centres that are already existing here, to serve as growth points and hence to serve the surrounding settlements and in turn usher in growth resulting in a system of sustaining Human Settlements. Centres such as Gosaba, Basanti, Canning, Kakdwip, Mathurapur can perform this duty if properly geared.

14. Last but not the least, it can be strongly recommended that an in-depth survey of this maritime country is necessary to fill in the wide gap of knowledge that still exists in reality about the people, their settlements and human activities; and the results of such a survey may be utilized for any plan of action to be undertaken regarding the area. A proper historical link between the past and the present is necessary to implement any measures required for proper growth and development of the area.