INTRODUCTION

0.0 STATEMENT OF THE PROBLEM:

The alteration of physical condition of a region through natural processes forces men to give up their age-old occupations and to take up new ones. This is followed by a corresponding redistribution of population. The latter phenomenon is also motivated by a change in the economy of the region.

It is needless to say that rivers are of vital importance in a deltaic country, which they create. The rivers of the Bengal delta have been largely responsible for the economy of her people who concentrated along the banks of the rivers. But deterioration of the river channels coupled with human interference brought in their wake a number of problems - agricultural decline, beginning of malarial fever, periodic growth and decay of population and the tendency of clusters of population to move away from river banks to sites along railways and roads.

The moribund Ganga delta was selected for study due to its very special settlement problems. It is a fact that when land building activity of the rivers ceased, a portion of the delta grew moribund, herein defined as the 'study area'. Moreover, the salubrious climate of this area worsened, with the consequent downward trend in population density and decline in agriculture in comparison to earlier periods (pre - 1850s). After the lapse of a
century, the study area suddenly experienced a very rapid increase of population which was not due to any improvement in ecological conditions, but owing to immigration from the then East Pakistan (Bangladesh), followed by a larger cropped area and other manifestations of economic development. The changes in the physical environment and their impact on the socio-economic landscape are well known facts.

The object of the present work is to study the changes in the settlement pattern of the moribund Ganga delta of West Bengal during the last sixty years (1921-81), focusing attention on the nature and degree of changes in the internal physical structure, social morphology and economic base of the settlements, factors responsible for such changes and the specific role played by each factor, the exact process of change and its effects on the ecology of the micro region. The study aims to delve at the complex interaction in which all the factors of physical and economic environment worked on each other and acted together on the landscape. The combined effect sometimes led to a diminution in density of population or to an increasing effort on the part of men to establish their hegemony over nature. The study will show how growth of population and economy of the region was thwarted by nature in the pre-independence days and how in the later period men have been largely able to adjust himself fairly well to the environmental changes. The study thus aims
at a correlation between growth or decay of settlement and physico-economic conditions at different periods.

0.1 THE DATA:

The basic materials of this project have been collected from primary and secondary sources.

0.1.1 Primary sources - These include, (i) unpublished maps, (ii) unpublished records, (iii) Government correspondence made from time to time and (iv) other unpublished data and records.

Village-wise data on population and land-use were collected from (i) unpublished Revenue Survey Map of 1850 and (ii) Khatian records of the Settlement Survey. The Cadastral Survey Maps have been helpful in comparing settlement growth and land use between the Settlement Survey of 1920s, and the Revisional Survey of 1950s. Khatian records of the Settlement Survey, the Revisional Survey and the Land Revenue Survey provided the raw data for preparing maps of caste pattern and land use over a time period of about 60 years. Some of the present day maps, for which Land Revenue Survey data are not available, have been prepared by the author herself on the basis of extensive field surveys. (iii) Some of the Government correspondence regarding health and monetary help were helpful in interpreting the then condition of the study area. (iv) The raw data

of the Block Development Offices have also been used for studying the present-day land-use at P.S. level.

0.1.2 Secondary sources They include published books as well as unpublished doctoral dissertations, Census Reports and topographical maps of the Survey of India.


present. 'The Ganges Delta' by Bagchi is a valuable addition to the study of population changes in this part of the then Bengal Province. In 'A geographical study of Murshidabad district' Banerjee outlined the geography of part of the present study area, with particular reference to population. Banerjee and Bowers dealt with the 'Changing cultural landscape of Nadia, a border district in West Bengal, India'. 'A Study in settlement geography in the District of Murshidabad' is also a significant contribution to the geography of part of the present study area, with particular reference to settlement geography. Chakraborty focussed her study on the 'Land-use in the Bhagirathi-Jalangi interfluve in Nadia District' while Basu dealt with the 'Decay and Associated Problems of the River Dynamics of the Bhagirathi Valley'. Ghosal's main concern was the cottage industries of a part of the

study area. The present additions on this subject are 'Itihase Banogram'\(^{13}\) and 'Land utilisation and population distribution in the Jalangi basin'\(^{14}\). The first one deals with the history of settlement of Bangaon subdivision and the second one with changes in the land use and population in a part of the study area. In addition to these, Geographical and Statistical Report, the Statistical Accounts, the District Gazetteers, Report on the Survey and Settlement Operations have been used as secondary sources of informations.

(ii) Census data (1981) gave basic informations on population and area at mauza level. Anchal-wise maps of rural density and density of villages have been prepared with the help of raw data.

(iii) In addition to these, the three editions of the Survey of India's topographical sheets based on surveys in the periods between 1916-17, 1950-51, 1968-69 have been extremely helpful for showing changes in the morphology of settlements.


0.2 PROBLEM OF USING THE DATA:

The data were classified under several heads. Moreover, some difficulties had to be faced in the arrangement and analysis of data.

For instance, (i) there have been some changes in boundaries, both at P.S. level, viz., Jalangi, Karimpur, Chapra and Krishnagar and at village level, i.e., Paraspur, Phulia. In the latter case, it was observed that portions of some mauzas adjoining the river Bhagirathi in the police stations of Santipur and Chakdah had been diluviated, while more land had been added by alluviation. In this case, the river had receded from its previous position. So, it was thought to be unwise to compare any sort of data at both the levels over a time span. This difficulty has been overcome by considering percentage variation of data available at two different periods. In this connection it should be mentioned that some marginal adjustments of the natural boundary to conform to the administrative boundary are made in order to make the past and the present data comparable. However, it has not been possible to follow strictly the natural boundary of the region in respect of some police stations.

(ii) Village-level population data of Revenue Survey (1850s) are available, but the same are not obtained from 1921 Census to compare population growth or decay.

(iii) Sometimes, identification of castes from
their titles is a difficult task. For instance, the title 'Dey' is known as Kayastha (writer caste), Benia (business caste) or Scheduled Castes in different mauzas. The same holds true for the title 'Khan' who is identified as 'Teli' (oil presser) in Phulia and as Tanti (weaver) in Sibmibas. The adoption of Bengali titles like 'Sen', 'Mondal', 'Biswa' by the Scheduled Tribes of Phulia is common. The difficult problem of identifying castes has been solved and rectified by the field surveys. Since the Settlement Survey, about fifty years have lapsed and the persons, who would be of help in this identification, had expired. So the author had to take the help of aged persons of adjacent villages who were familiar with the families of the deceased persons.

(iv) Another limitation in the study of caste is the problem of identifying their traditional occupations. During the last fifty years, with the advancement of education and disintegration of traditional occupations, castes have lost much of their significance in terms of occupations. So, instead of vainly comparing the caste system solely in terms of their occupations, attempt has been made to study the changes in occupational pattern with the march of time.

(v) The survey of economic condition of the people is a difficult. In order to avoid the difficulty, the author selected only the small villages, on the ground that economic condition of the agricultural
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population of both the small and large villages were more or less the same.

(vi) It has not been possible to present a comparative picture of crop pattern of the Revisional Survey and Land Revenue Survey for all the mauzas, because in some mauzas the standing crop was recorded during Settlement operations. The problem has been solved by considering only those mauzas which contain full crop records. It has been seen that more or less some changes have taken place in all the mauzas during this period.

0.3 METHODOLOGY :

The study analyses processes of spatio-temporal changes in rural settlements and relate them to socio-economic changes. In order to do this the whole study has been divided into three parts: (i) population growth and decay; (ii) settlement changes; (iii) the interaction between these and rural land use as well as economy of the region. It is needless to say that population and settlement are intimately connected, for the growth or decline of one affects the other. In the present work, population data and mauza maps of Settlement Survey and Revisional Survey have been largely considered to analyse settlement changes.

A vast change in settlement morphology including its dimension of size and agricultural land use had taken place due to depopulation in the pre-1947 period and immigration in the post-1947 period. Study of Cadastral
maps of two different periods, viz., the Settlement Survey and the Revisional Survey, gives an idea of the above changes. Some police stations have been selected for this purpose and each mauza of a P.S. has been studied. These give a sufficiently clear police station-wise picture. The changes in settlement pattern have also been studied by a comparative study of Survey of India's topographical maps surveyed in 1915-16, 1950-51 and in 1968-69.

The study of settlement morphology and land use of individual mauzas, has been, in the first instance, based on unpublished Revenue Survey Maps of 1850s. The successive maps have been drawn based on records of khatian (records of rights) and khasra (crop statistics) of the Settlement Survey, the Revisional Survey, the Land Revenue Survey and field studies. The raw data of surveys, particularly on sections of castes, have been verified through field observations and finally transferred on maps.

It is thought that caste system of India is based on traditional occupations. In this study special enquiry was made to study the applicability of the above system in the present economic set-up. House to house survey of the occupational pattern has been carried

15. Published by the Directorate of Land Records and Surveys, Government of West Bengal.
out with the help of Cadastral Maps. In this respect, the khatian records of Land Revenue Survey provide the primary data regarding the residents of the mauza and their land holding (if any).

In addition, the author has carried out several exercises on a) growth rate of mauzas (1951-71), b) rural density (1971) and c) density of villages (1974). Growth rate of mauzas during the decades 1951-71 has been unequal. This has been measured by standard deviation method and then shown in maps. Rural density (1971) has been worked out by dividing rural population with the rural area. Similarly, density of villages has been obtained by dividing the number of villages with the area of the villages.

0.4 ARRANGEMENT OF CHAPTERS:

The present work is divided into six chapters. The physical background including geology, geomorphology, rivers, climate, soil and vegetation has been dealt with in part one of Chapter I, while part two of this Chapter deals with economy of the area, such as agriculture, occupational pattern and industrial landscape. Chapter II deals with the origin and growth of settlements. The settlements have been divided into several periods, viz., pre-historic, Hindu, Mughal, British and Modern according to the date of the origin of settlements. Chapter III
deals with the factors affecting settlement growth from 1860 to 1947. Chapter IV deals with post 1947 period and is an attempt to study the effects of depopulation and mass immigration on the cultural landscape of the area. A detailed study of settlement morphology and economy have been done in Chapter V. Here case study of settlement of each mauza has been covered. Chapter VI is a summary of the whole work.

0.5 INDIAN LITERATURE ON RURAL SETTLEMENTS:

Study of villages received particular attention after the First World War. Poverty and disorganisation in rural societies in the post-war world underscored the need for all social science disciplines to investigate and understand the rural scene. "The rumblings of rural discontent began to reach the ears of the government and the educated public in towns and cities." It was in this context that Royal Commission on Agriculture was appointed in 1926 and a number of scholars undertook village surveys. Government institutions like the Punjab Board of Economic Enquiry, the Bengal Board of Economic Enquiry, Indian Statistical Institute, Calcutta, also undertook such surveys. Individual villages were selected for this purpose and the economic life of the rural people was

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16 Mukherjee, Ramkrishna, 1971: Six Villages of Bengal, Popular Prakasan, Bombay, p. IX.
thoroughly investigated.

A difference from the existing trend of village surveys was seen in Mukherjee's work in which he undertook the analysis of economic and social life of a cluster of villages in Bogra district, now in Bangladesh. 'Twenty villages of West Bengal, A Socio-Economic Study on Intercommunity Differences' presents a systematic profile relating to the nature and extent of educational and economic achievements. Intercommunity difference in the attainment of literacy and educational level of the population concerned, their tenure status, land holding position, activity status, possession of agricultural implements, involvement in debts was studied in detail in a monograph by Basu and Raha.

However, these studies did not aim at "the orderly description and interpretation of processes, patterning, functions and the spatial organisation of human occupancy

17. op. cit., 291 p.
within rural environment over the earth's surface, which is the area of settlement geography.

In our country, the branch of rural settlement geography is still in its infancy. The credit for introducing this branch of geography largely goes to Prof. E. Ahmed, Dr. Buschmann and Prof. R.L. Singh. Prof. Ahmad's work is a detailed study of settlements, both rural and urban, in the long-settled fertile country of Uttar Pradesh. The rural settlement types in Uttar Pradesh are analysed in another important paper. Buschmann has studied in detail village patterns including tribal villages, house types, material used for building houses in different regions of India. Singh's "Evolution of Rural Settlements" is an analysis of the detail sequence of land occupancy in this part of India since Aryanisation.


Dr. L.R. Singh focuses his attention on the terai and provides a detailed study of the evolution, growth and distribution of rural settlements of the Terai. Dr. N.D. Bhattacharya has explained in detail the evolution, growth, house types and morphology of settlements in relation to physical setting of two distinct regions of Murshidabad district, West Bengal, which also covers part of our study area. In the Settlement Geography of the Indian desert, Dr. R.C. Sharma has studied growth and types of human settlements, nature and distribution of rural and urban settlements in the desert regions of India. Dr. A. Prasad has dealt with rural settlements of Chotanagpur in detail and explains their evolution, types and spatial distribution. He has correlated physical landscape with various aspects of settlements. The Rajput Clan Settlements of Varanasi district, U.P., was studied by Dr. R.B. Singh. Diffusion of clan settlements is a new

angle of research in his study. In 'Villages d' Inde Centrale, Andhra Pradesh', Gallais and Golbery have studied caste pattern, evolution of land properties of the castes from 1873 to 1967, crop pattern and evolution of crop patterns (kharif and rabi) from 1967-68 to 1969-70, land use, sources of irrigation of the six villages, viz., Gudi Hatmoor, Latchanagudipudi, Togari, Pocharam, Kerada and Mantsala. In 'Settlement Geography of Chotanagpur', Dr. V.N.P. Sinha has examined the settlements of Chotanagpur, both rural and urban and has correlated their characteristics with physical landscape. In the 'Clan Settlements of the Saran Plain', Dr. Rana P.B. Singh has studied rural settlements of Saran in detail. He has also dealt with spatio-temporal diffusion of the clan settlements and distribution of castes in some selected villages. Dr. S.B. Singh has studied rural settlements of Sultanpur district, U.P. In


'Introduction to Rural Settlements', Dr. R.B. Mondal has selected Bihar plain (north) as a case study. 'Models in Settlement Geography' and 'Applied Quantitative Methods in Rural Settlement Geography' are two new additions in his work.

Many sociologists believe that Indian village pattern is largely influenced by caste system. It has moulded the economic structure and village morphology. One of the prime movers in the caste system was the design of building up of a non-competitive productive organisation in our country. Caste provided some sort of a guarantee of occupation to every individual member of the society and that is why it managed to survive the political upheavals of countries. However, the past one hundred years saw a radical change in the occupational pattern of many of the trading and artisan castes.

The present work is an attempt to analyse the effects of such changes in the occupational pattern of selected mauzas and consequently in the patterns of the settlements themselves.


Map 1.1 Detailed administrative map of the study area uoto Gram