ROLE OF MAJOR MARKET CENTRES IN THE DEVELOPMENT OF POLICE STATIONS IN BAGERHAT DISTRICT OF BANGLADESH

THESIS
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By
Md. Hasanuz Zaman, *M.Sc.*
Lecturer, Sarankhola Degree College
Bagerhat, Bangladesh

Guided by :
Dr. M.M. Jana

DEPARTMENT OF GEOGRAPHY AND APPLIED GEOGRAPHY
UNIVERSITY OF NORTH BENGAL
MAY,1998

Department of Geography and Applied Geography
UNIVERSITY OF NORTH BENGAL
P.O. NORTH BENGAL UNIVERSITY, Dist. DARJEELING
PIN : 734430, INDIA

Dr. M. M. Jana,
M Sc Ph D (Cal) P G Dip in
R S Application in Geomorphology
Geology & Hydro-Geology
F G S I (Cal) F C A F A A G (Washington)
HEAD OF THE DEPARTMENT

W-295 N B U Compus (Wn Sector)
P O NORTH BENGAL UNIVERSITY
DIST DARJEELING W B
PIN - 734430, INDIA
Phone 91- 0353-450 430 (D)
91-0353-450 245 (R)
Fax 91-0353-450 546 (O)

Date May 27, 1998

TO WHOM IT MAY CONCERN

I am pleased to certify that Md. Hasanuz Zaman, Lecturer, Sarankhola Degree College, Bangladesh worked under me on 'Role of major market centres in the development of Police Stations in Bagedrhat Disdtrict of Bangladesh' for his Ph.D. Thesis of this Univedrsity. He prepared the Thesis based on field work in the Study area and with the help of secondary data collected from different offices and organisations at the time of field survey. He is sincere and methodical in his work. He consulted various Libraries and with many local inhabitants for arriving at the result. So far my knowledge goes no one worked on this topic and this is an original work from the field study in Bangladesh. Researchers, Planners and others those are interested to work of this type will be benifited in future.

I am sure that the findings from the research may help to develop the region as a whole and the Bagerhat district in particular.

I wish him success in future carreer and life.

mmjana

Dr. M. M. Jana
(Supervisor)

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Md. Hasanuz Zaman

Department of Geography &
Applied Geography
North Bengal University
Darjeeling.

PREFACE

Markets have played important role in the rural areas of Bangladesh. Villagers have usually sold their surplus and purchased their necessity at such markets. Many sorts of traders have been engaged in trading there, under the modernization and industrialization of the country, the situation of such markets are changing rapidly, For better understanding of rural life in district, it is very important to investigate the contemporary states of these markets.

The present study concerns with the characteristics and role of market centres of Bagerhat district. The main theme of this study is that the peasant way of life of the study area is closely interlinked with the rural markets. In addition to exchange mechanism the market centres also perform a wide range of other functions such as economical, cultures and social etc. the study has examined the rudiment of the above mentioned these of rural markets as they may be applied to the rural periodic markets in nine police stations in 156 markets. Detailed data were obtained for 45 selected markets in the district. In analysing these characteristics both the primary & secondary sources of data have been used. Information was also gathered from respondents representing each category of the traders & buyers of different levels. Besiders this interviews were made by pre-arranged informers at entry joint in order to determine each of their command area & comand population. The approach of the study is mostly geographical and empirical one.

The basic idea of this study, the role of major market centres in the district. An investigation towards its backwardness of rural market has been undertaken for formulating a strategy of hinterland. Before such an attempt is made it, on certain point. Some studies on microlevel planning in Bangladesh government were made. It is

expected that this study will not only improve or useful for present occasion but would also provide a guidline for subsequent Scholars, who may introduce such modification as local situation would demand.

The present research work is composed of nine chapters and an appendix chapter 1 to 7 are related to the study area data of Bagerhat. Physical background has been sketched in the first chapter and chapter two describe the landuse pattern of the area. Chapter three and four are devoted for discussing the population character and socio-economic condition of the district repectively. Chapter five & six focusses the character & indentify the functin of markets. Chapter seven analysed the condition of selected market centres. The final chapter describe the suggestion & conclusion of the thesis. The appendix is added for detailed information of the market centres in the district.

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GLOSSARY

Aman	:	Main rice grown in winter season.
Aus	:	A variety of rice crop, harvest in mid August to September.
Baperish	:	A petty dealer and commission agent.
Bazar	:	Market centre.
Boro	:	A variety of rice grown in robi crop season.
Beel & Baor	:	Marshy area.
Entle	:	A types of loamy soil (high percentage of loam).
Faries	:	A Petty dealer and also commission agent, who purchases commodities from the primary producers and sells them to whole sellers.
Gur	:	Molasses (Un-refined brown sugar).
Hawkers	:	Peddler.
Hat	:	Rural market centre.
Hat day or Hatbar	:	Market day.
Jubi	:	Marshy land.
Kalbaishaki	:	Strong wind with rains in the month of April to May.
Kacha road	:	Non-metalled dried road.
Khal	:	Canel
Karib	:	Crops harvest in Autumn.
Madrasha	:	Educational Institutions, Mainly religious education.
Maktob	:	Nursery school in village.
Mauza	:	A surveyed land revenue unit, more than one village consist a mauza.
Mati	:	Soil.
Monsoon	:	Seasonal weather
N.G.O.	:	Non-Government organization.
Nor'-Western-Monsoon	:	Seasonal wind, the origin of North Western is attributed to the weding into an intensive local depression by a cool air mass from North-West hence the name Nor' Wester.
Pardha	:	Secularism, a traditinal custom for muslim women.
Pucca Road	:	Metalled Road
Rupali, Sonali, Janata Krishi, Agrani & Gramin Bank	:	Regional Bank of Bangladesh

Rabi	:	Winter sown and spring harvested crop.
Sadar	:	Central Place or headquater of region.
Thana	:	Police station administrative unit.
Taka	:	Bangladesh Money note currency.
Tols	:	Local donation money for continue village nursery schools.
Union	:	A political boundary under the police station, comprising a number of villages
Union parisad	:	Union public office.
Upazila	:	Administrative upgraded police station.
Izarader	:	A lease holder of market centre.

INTRODUCTION

I. PURPOSE OF THE STUDY

The main purpose of this study is to find out the distinctive & genetic character of the rural market centres of the region and at the same time to identify the service capacity of the markets forming the very base of the society today.

Bagerhat district, which has been chosen for this study is situated in the southern part of Bangladesh and represents the other districts of the country. In Bangladesh, the work of geographical researches is meagre and specially research on marketing geography is very scanty. As a geographical point of view, the region has varied of physical, cultural and economical of other portions of the country. Bagerhat district is very recently settled of the region and the level of urbanization is very poor in the country. The economy is predominantly agricultural based. The low degree urbanization has given rise to only two urban centres of the district, majority of people depends on rural market centres.

The present study focusses on rural markets and market consumers of the region. The basic occupation of rural people of the study area is agriculture and the basic problems are deeply rooted in the latter. Due to the demographic cultural and socio-economic problems, systematic growth & development faced a great challenge, accompanied by hapazard growth of market centres, lack of proper planning and defective implementation of earlier plans, all problems become acute and accentuate. so, it is necessary to study all those problems for developing the market centres. The remoteness of communication network and the non-homogeneous character of the people also cause of poor development of the command area of the market.

The region is economically backward and the rural market centres are poorly developed. The rural people are economically unhealthy but the region is rich in various natural resources. The depressed economic condition of the region has imposed severe influence on the pattern, morphology and functional character of the markets and also the size, types and distributional pattern of the region.

II. OBJECTIVES OF THE STUDY

The over all objective of the present study is to analyse various functions of the market centres and its surrounding areas of Bagerhat district. The specific objectives are :

i) To study the population character of the market centres.

ii) To assess the agricultural potentialities of the study area.

iii) To study the growth and development of market centres and their classifications on the basis of the certain parameters.

iv) To determine the spatial distributional pattern and the service areas of the market centres.

v) To assess the existing socio-economic functions of the market centres and their influence on the spatial or regional development.

vi) To study the major problems, specially the problems of marketing of the local products in the area.

vii) To study one of the influences of market centres and their interactions with the local inhabitants.

viii) To find the role of market centres in the regional development as well as national development.

ix) To suggest and recommend, steps and programmes for the economic development of the region in general and the people of the district in particular.

III. SELECTION OF THE STUDY AREA

Reasons for the selection of Bagerhat district in particular for this study are as follows :

(i) The district adjoins the Bay of Bengal and is a tidal delta region, where flood is a regular phenomena & water is the only cheapest means of transport. The socio-economic conditions are mostly aggrarian.

(ii) Easy accessibility to different police station has made the field work easier and prompt.

(iii) Advantage of the researcher in term of personal knowledge and familiarity as a local inhabitant of the district.

(iv) Some markets enjoy modern facilities but most of them are remained backward with poor communication & infrastructure.

The study area has 156 market centres. But only 45 market centres are selected for detailed study of different police stations of the district.

IV. METHODOLOGY

This work is largely based on field investigation. Field survey was started in the middle of 1994 and it was continued till 1997. In this connection wide ranging enquires have been made in different offices of the police station.

The primary data are obtained through personel enquires of different parts of the region under study. The survey was made on the basis of selected samplings. The information of field investigation was available from different sources, depending on the nature of data necessary for particular purpose. For instance in the case of finding out the functional character of the market centres, the character of buyers & sellers, level of markets etc, man to man survey was made with the questionnaire. Moreover questionnaire had been sent to various organization like education office, Hospitals and statistical office etc. From collected data, the nature of attendances, standard of education, functional character of 'hats', income size of traders and attendance of male & female buyers have been worked out. Different market centres of nine police stations were surveyed for this purpose.

Analyses of the activities of the market places of different police stations widely distributed over the region were surveyed by field work. Besides, the nature of the marketing activity and information were gathered. Origins of the markets, growth trend, command area and specialisation of commodities have been studied.

Apart from primary data collected through personal investigations, secondary data have also been used for writing of different chapters. Among the government offices

and different organizations visited for the collection of secondary data, the most notable are the agricultural offices, the settlement offices, the 'thana' land offices the D.C. Offices and L.G.E.D. offices. The base map for the landuse survey was collected from the settlement office and other maps were available in the 'thana' land offices. A number of maps have, however, been prepared on the basis of collected data. All the collected data have been compiled in the thesis. The photographs have been taken by the author personally for representing some noted features of the area. Data processing and compilation have been performed with scientific calculator. The results have been mapped for analytical description and visual presentation.

The history of markets in the district is mainly based on old records available in public library in Khulna Division and Rajshali University Seminar Library in Bangladesh. Census data have been adopted vigorously for writing up different chapters but have been tactically avoided in the preparation of the maps.

Some of the data & results which cannot be tabulated in the chapters concerned have been appended at the end. It may be mentioned that some of the materials of this thesis have been published in various levels and journal in Bangladesh & India and abroad in different times.

I.V DESIGN OF THE THESIS

This research work commences with the identification of the location of Bagerhat district of Bangladesh, giving the purpose, objectives and methodology adopted for the study. Then the work has been divided into chapters dealing with different aspects as follows.

The first chapter discusses physical background of the area. The second chapter deals with the details discussion of agriculture & landuse pattern. In chapter three the distribution of population and their characteristics have been discussed. The fourth chapter deals with level of socio-economic functions of the area. In chapter five, the distribution and characteristics of market centres of each police station has been analysed. The sixth chapter is entrusted with detailed discussion of funcitons and strategy for development of market centres in the district. The seventh chapter focuses of the identification & application of strategy of development of selected market centres. The chapter eight evokes the summary of result of market centre of the area. And finaly, the

CHAPTER ONE

GEOGRAPHICAL BACKGROUND OF BAGERHAT DISTRICT

INTRODUCTION

The present chapter gives an overall background of the Bagerhat district and helps to identify the role of market centres in the development of police stations. The chapter has been divided into five sections : The location of the study area has been discussed in the first section. The physical character i.e., relief has been discussed in the second section. The major drainage and climate of the district have been discussed in the third and fourth section of the chapter respectively and the last section of the chapter deals with soil character of the district.

1.1 STUDY AREA

The study area, the sanctuary of Hazrat Khanjahan Ali was formerly a part of Khalifastabad Pargona, during the Mugal period. It is situated at plentiful bounties of Sunderbans. In pre-historic times, the area now forming the district was part of the deltaic tract known as Bongaon. Ptolemy's map of the second century A.D. showed the region as the southern portion of the delta formed by the two great branches of the Ganges, the Bhagirathi and the Padma. The early history of the district is surrounded in obscurity. It is however, most probable that in the fourth century A.D. the district of Bagerhat, as part of the kingdom of Hangaon, come under the authority of Samudragupta (C340 - 380 A.D.), the Imperial Gupta monach of Northern India. This is evident from the Allahabad Pillar's Inscription of the monarch. His successors like Chandra Gupta II (C 380 - 421 A.D.), Kumara Gupta (C 413 - 455 A.D.), Skandra Gupta (C 455 - 468 A.D.) and others probably exercised their authority over this district till the first quarter of the sixth century A.D. At the early stage, Bagerhat district became a Police Station under Khulna Sub-Division of Jessore district in 1842. Bagerhat was upgraded to Sub-Division under the same district in 1863 with the recommendation of the Deputy Magistrate, Poet Bangkim Chandra Chattapadhyay. Bagerhat Sub-Division was upgraded to district in 1985. It is bounded by Pirojpur district on the east, Barguna district on the south-east, Bay of Bengal on the south and on the west by the Khulna district. It lies between 21°.49' and 22°.59' North latitudes and between 89°.32' and 89°.98' East longitude (Fig-1.1). The total area of the district is 3959.11 km^2. Of which 404.6 Km^2 are riverine and 1868.91 km^2 are under forests. The percentage share of

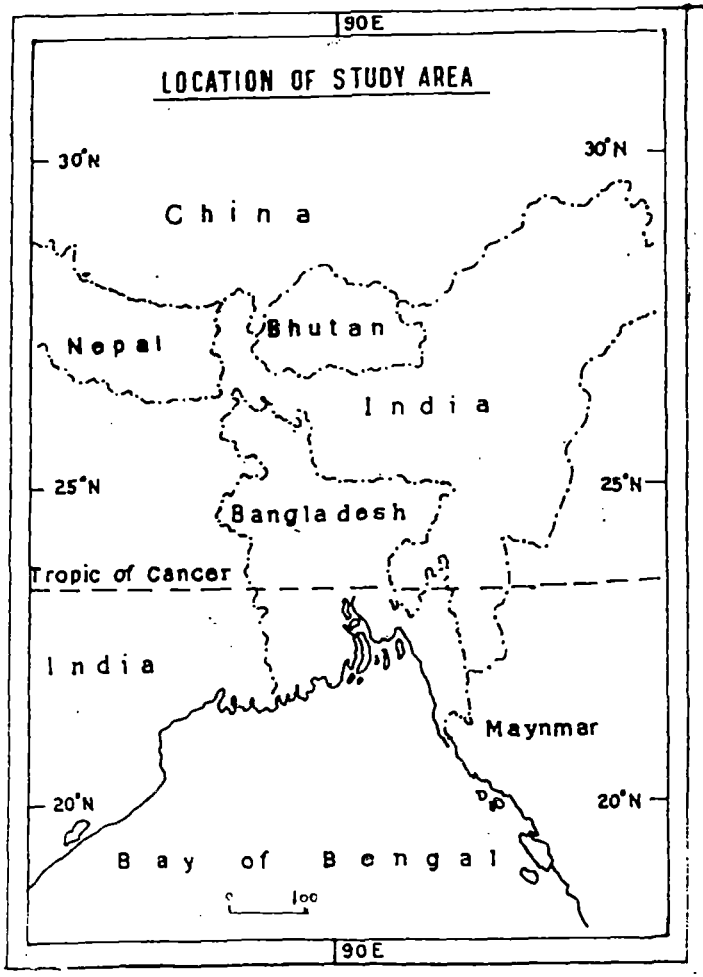
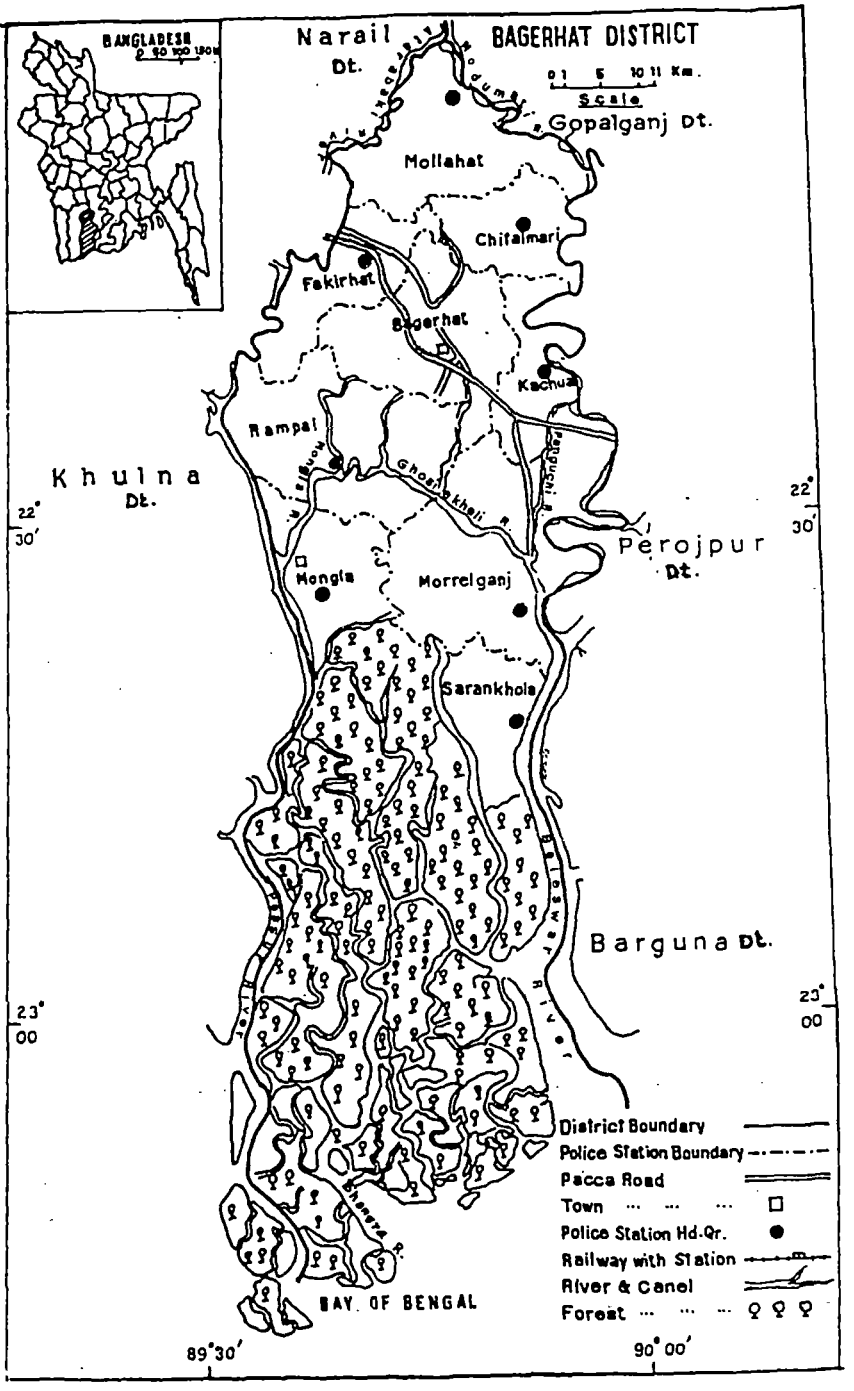

LOCATION OF STUDY AREA
90E
30°N
China
Nepal
Bhutan
India
25°N
Bangladesh
Tropic of Cancer
India
Maynmar
20°N
Bay of Bengal
100
90E

Fig –1·1


BANGLADESH
BAGERHAT DISTRICT
Narail Dt.
Gopalganj Dt.
Mollahat
Chitalmari
Fakirhat
Bagerhat
Kachua
Rampal
Khulna Dt.
Ghoshakhali
Perojpur Dt.
Mongla
Morrelganj
Sarankhola
Barguna Dt.
BAY OF BENGAL
22° 30'
23° 00'
89°30'
90° 00'
District Boundary
Police Station Boundary
Pacca Road
Town
Police Station Hd.Qr.
Railway with Station
River & Canal
Forest

the district is 2.7% of the total area of the country. In area, its ranks 2nd among the districts of Khulna Divisionin and 6th among the districts of the country.

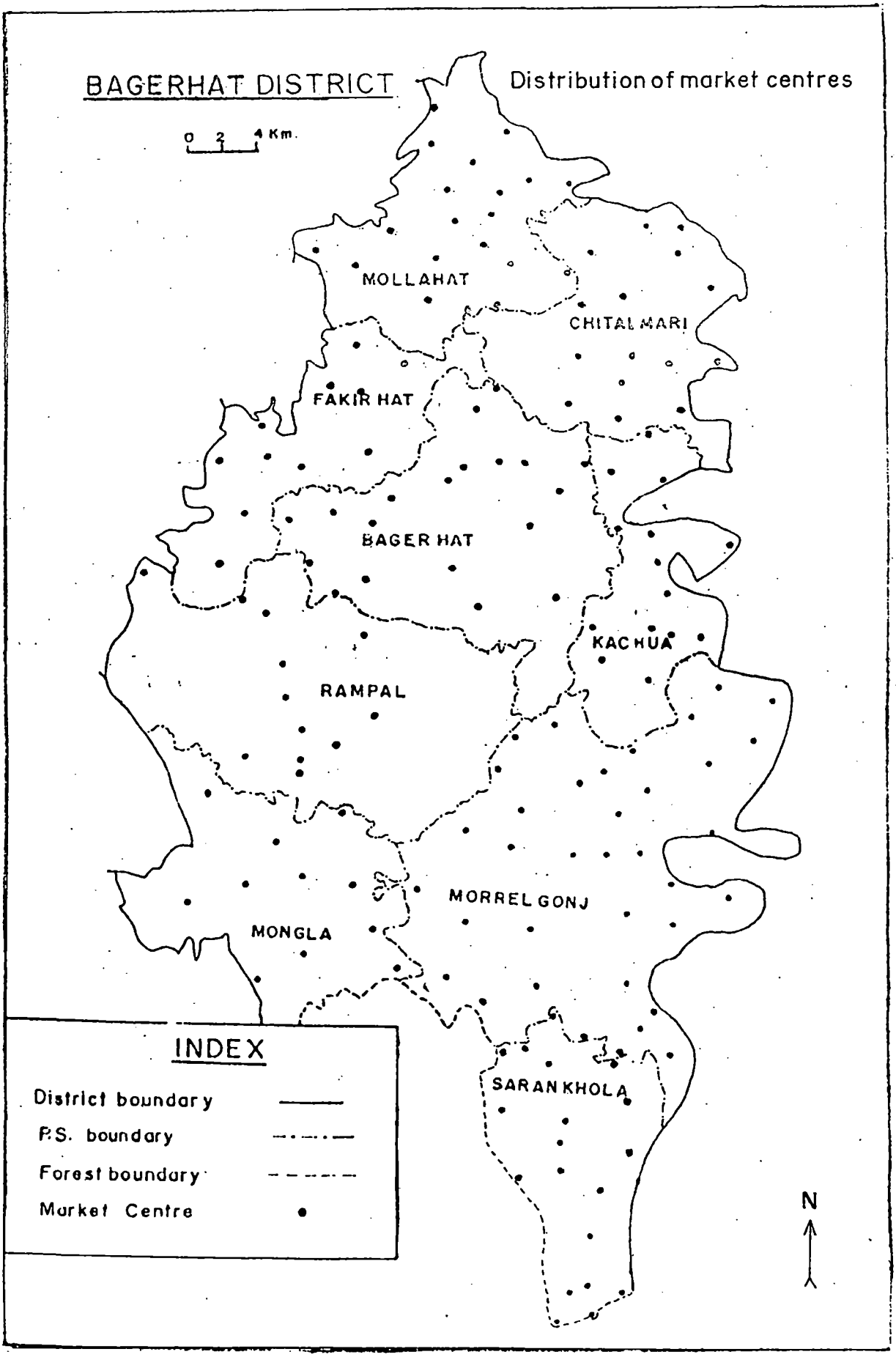
The district consists of nine police stations, Rampal P.S. is the largest covering an area of 1734 km^2 which is 44.5% of the total area of the district. Kachua P.S has lowest area of 123.3 km^2 sharing about 3.2% of the total area of the district. All the police stations are similar in character. Only three police stations namely, Mongla, Sharankhola and Morrelgonj are located in Sunderbans covering an area of 1637.5 km^2 together.

The study area is traversed by a number of rivers, revulsion and streams. Of which Shalla, Bhola, Modumoti, and Beleshowar are to be mentioned. A scrutiny of drainage system shown that the pattern is mostly rectangular which are evidenced by the tributary channels, which meet the main streams perpendicularly and this is pronounced in the northern to southern part of the district. The rivers are tiddal and navigable throughout the year. Topographical and climatological, conditions together given the district proneness to severe cyclonic risks. These cyclonic storms occure in early part of summer and later part of monsoon. But the district is protected sometimes by the forest of Sunderbons, which is located in the south (Fig. 1.1)

The study area, Bagerhat district is producing a large varieties of agricultural produces, due to its flat topography and fertile soils.Among the crops, paddy, potatoes, chillies, mustard, onions, vegetables and spices are to be mentioned. All the commodities have been sold in the local markets. The district has 156 markets, distributed unevenly in different police stations . Out of 156 market centres, 45 markets have been selected for the study because 80% villagers depend on their necessary goods on these local markets. The highest number of markets is found at Morrelganj P.S., which has 37 markets. Bagerhat and Sarankhola P. S. have 19 markets, Mollahat P. S have 20 markets. Kachua P.S. have 7 unions, with 14 markets and Fakirhat have eight unions with 11 markets Prrmaing Mongla, Chitalmari & Rampal Police Stations have 11,14 & 12 markets respectively. Each police station headquarter has a market (Fig - 1.2). All these markets have played an important role in the selling of agriculture goods in rural areas.

1.2 RELIEF :

The Bagerhat district is a part of Khulna Division, which forms extreme south-western portion of the country. Its average height is 25 m. above mean sea level. As a


BAGERHAT DISTRICT
Distribution of market centres
0 2 4 Km.
MOLLAHAT
CHITALMARI
FAKIR HAT
BAGER HAT
KACHUA
RAMPAL
MORRELGONJ
MONGLA
SARANKHOLA
INDEX
District boundary
P.S. boundary
Forest boundary
Market Centre
N

Fig—1:2

whole, Bagerhat district is a low-laying fen region and part of southern delta of the country between Hugly and the Meghna estuary (Bari 1978). The large tracts are swampy in the rainy season. It is intersected any a large number of rivers and estuaries, which again are connected by innumerable inter-lacing cross channels. Its physical feathures are much the same as those of other deltaic districts. The region is flat. The surface being only slightly raised above flood level. The banks of the rivers are higher than the adjacent area. So the land is sloping away from them on either side. The villages are clustered along the bank of rivers.

Though the general appearance of the district is that of a low alluvial plain. It may for practical purposes, the district is divided into two parts north and south. The northern part is high and the bank of the rivers is suitable for human dwelling. The southern part is covered by thick forests of mangroves. This forests is known as Sunderbons. The eastern boundary of the Sunderbons is formed, by Baleshwer river and the western boundary is formed by the river Pashur, the boundary of Khulna district. No definite line can be drawn for the southern boundary because delta formation goes on. So the distance of sea from the coast running inland varies to a distance from 100 to 130 km. The total area of the forests of the Sunderbons in Bagerhat district is 1847.26 km^2 (Census 1991).

The Sunderbons constitutes the largest single block of forests in Bangladesh. The forest occupys a flat deltaic swamp. Most of which goes under water during the high tides. It is intersected by a network of channels and creeks. The ebb and flow tides control, the formation of the Island. The tidal water sweeps over the area twice a day. The Sundarbon forms the lower part of the Ganges delta. The most important rivers in Sunderbons is being the Raimahgal, the Malancha, the Haringhata, the Baleshwar and the Buriswar. The tract through, which they flow is alluvial plain where the process of land making has not yet ceased and where morasses and swamps are now gradually filling abound. The rivers are connected with each other by an intrinsic series of branches and the latter in their turn by innumerable small channels. So that the whole tract is a tangled network of streams, rivers and water courses, enclosing a large number of islands of various slopes and sizes.

In the extreme south of district between the forests and the sea lie the open grassy tracts with rows of sandunes. The vast area of the forest is undoubtedly protection against the destruction of the cyclone or storms and storms waves which from time to time sweep in the equinocted periods with devastating force.

The average elevation of the district varies from 4m to 20m and the general slope is from north to south with some minor variations. Due to this topographical characteristics, the district suffers from floods and tides in the rainy season. So the area is always liable saline water inundation. The district is sparsely populated compared to other districts of the country and the places, suitable for dwelling are the high land along the bank of rivers.

There are no important and remarkable beels and marshes in any police station of the district. Only the largest 'beel' in Fakirhat and Mollahat police stations is situated on the western part of the district. It's local name is ' "Jeel' and 'Baors'. Mainly this 'beel' is a deserted channel of a river. On the characteristics of landform there are physiographic homogenity in the district. Micro feature in the physical landscape is found in the area. The level of landforms can be divided into three types. There are : (i) Area rarely flooded (ii) Area occasionally flooded (iii) Area frequently flooded. (Table -1.1).

TABLE -1.1 Percentage of area occupied by microphysiographic divisions in the P.S.

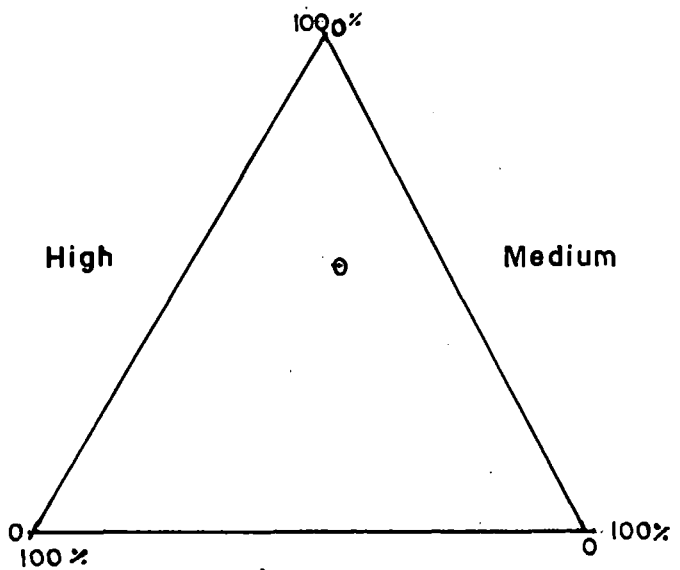
	(Percentage to total area of each P.S.)			
Name of the Police Station	Never flooded	Occational flooded	Frequently flooded	Total
Bagerhat	10	80	10	100
Chitalmari	20	30	50	100
Fakirhat	30	20	50	100
Kachua	13	81	6	100
Mollahat	20	30	50	100
Mongla	na	na	na	na
Morrelgonj	20	75	5	100
Rampal	11	79	10	100
Samakhola	20	30	50	100
Average	18	53	29	100

Source : *District Statistical Buletine, Khulna. 1983.*

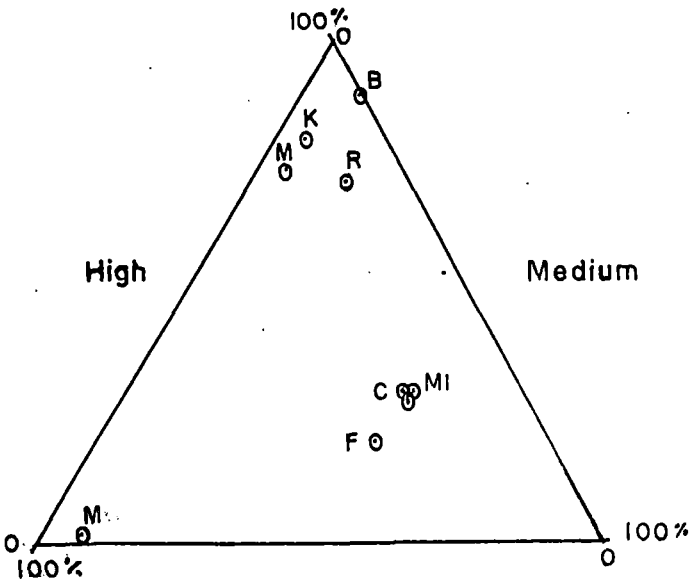
(i) Area rarely Flooded (~~Low~~ High) : It covers the northern part of the district with the general height of above 20m. It accounts for about 18 percent of the total area of the district. Relief is being comparatively high and is rarely flooded in the year.

(ii) Area occasionally flooded (Medium) : Medium land covering 29 percent of the area in the district It covers the middle part of the district. The general height is

LEVEL OF FARM LAND OF BAGERHAT DISTRICT



District



Nine Police Station

B — Bagerhat. C — Chitalmari. K — Kachua. F — Fakirhat. MI — Mollahat.
Mo — Morrelgonj. S — Sarankhola. R — Rampal. M — Mongla.

Fig — 1·3

between 12 and 20m. This part is susceptable to flood particularly after heavy rain and storms.

(iii) Area frequently flooded (~~High~~ Low) : The lower plain is the southern part of the district. It covers about 53 percent of area of the district and it is below 12m from the sea level. It is flooded frequently during heavy rainfall. This part is always submerged by the tides of saline water. This zone is cris-crossed by many rivers and channels. This plain land is gradually being filled up by alluvium and is reclaimed for agricultured crops. (Fig-1.3).

1.3 RIVER SYSTEM :

It is a region of many rivers. The varied physical and geological characteristics have profound influence on the drainage pattern of the region. The dendratic drainage pattern is observed in the region. Bagerhat district is drained by a number of large rivers, like the Bhairab, the Chitra, the Modumoti and the Pasur with their number of tributaries and distributaries. (Fig - 1.4). The rivers of the district rise from the Himalaya of India. Some rivers become feeble or dry in dry season. There is a different flow of saline water in the rivers of the district. All important rivers flowing through the district fall into the Bay of Bengal. Most of the rivers are tidal and navigable through out year. The riverine area is 404.6 Km^2 which is 10.4% of total area of the district. Total length of the rivers in the district is 370 Km.

Modhumoti River : The Modhumoti is the largest river of entire Khulna Division. It is a fact that Modhumoti is one of the principal distributaries of the Ganges in Bangladesh. It leaves the parent stream near Kustia where it is called the Garai and is flowing southward (Bari 1978) assumes the name of the Modhumoti meaning the honey-bearing river. It enters the district near its north-east corner at Manikdaha, and from this point it takes the name Baleshwar, meaning the lord of strength and forms the eastern boundary of the district, It crosses the Sunderbons separating the Bagerhat P.S. from the Pirojpur P.S. and entrers the Bay of Bengal after a course of 230 km. The Haringhata meaning the watering place of deers forms a fine estuary. It is 15 Km broad, and is navigable partly for the ships and throughout its entire course by native boats of large tonnage.

Atharabanka : Near Khulna, the Bhairab is joined by the Atharabanka i.e., the channel of 18 bends, which carries the surplus water of the Modhumoti into the Bhairab. It forces down into the Bhairab. The latter stream is longer and it flows into the south, the

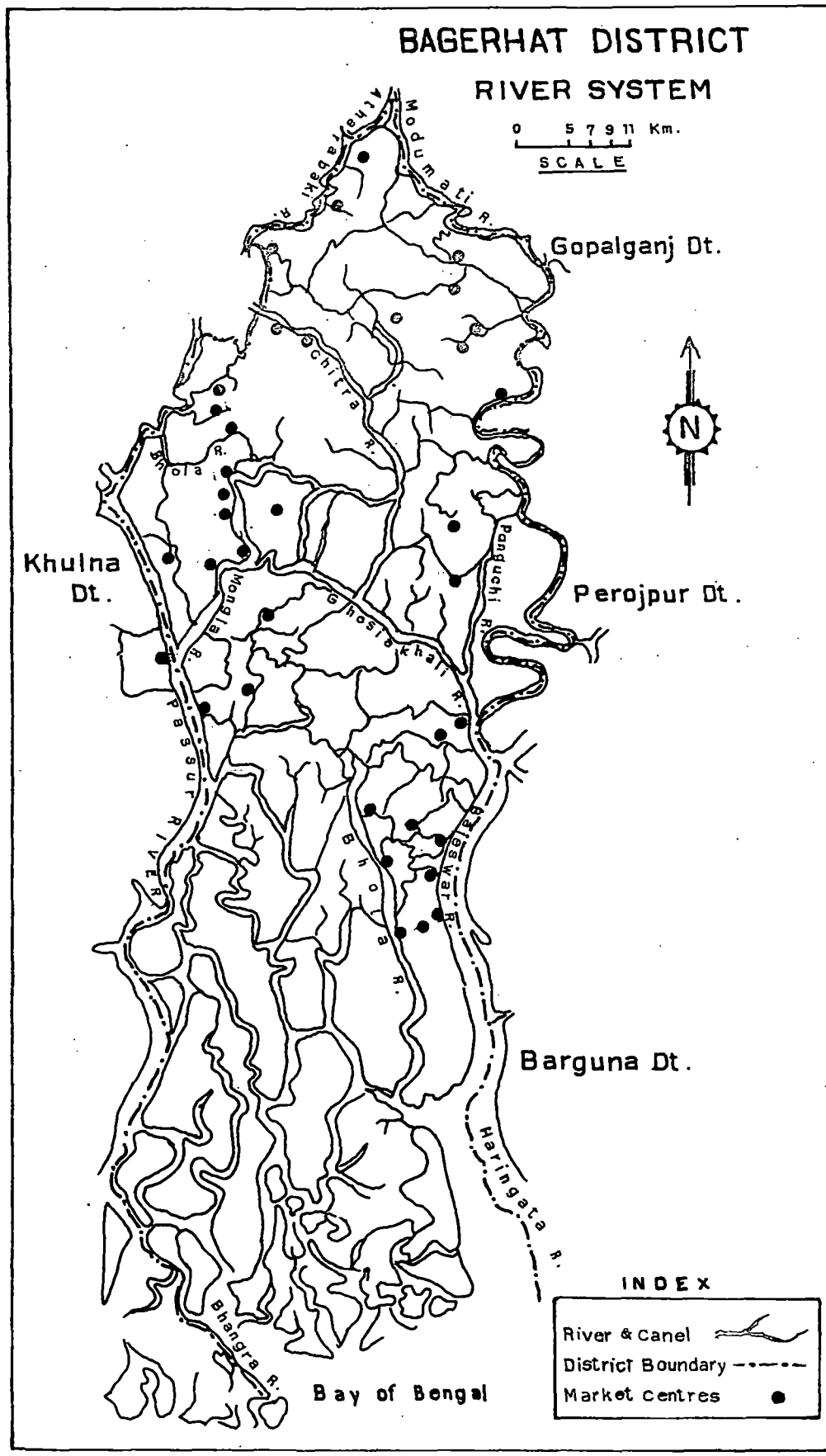

BAGERHAT DISTRICT
RIVER SYSTEM
0 5 7 9 11 Km.
SCALE
Kirtankhabki R.
Modumati R.
Gopalganj Dt.
Chitra R.
Bhola R.
N
Khulna Dt.
Mongla R.
Ghosla khali R.
Panguchi R.
Perojpur Dt.
Passur RIVER
Bhola R.
Baleswar R.
Barguna Dt.
Haringata R.
Bhangra R.
Bay of Bengal
INDEX
River & Canel
District Boundary
Market Centres

Fig-1·4

Bhairab itself turns backwards at Alaipurduar, till it finds an outlet for its surplus water, in the Rupsha river. The Atharabanka is 182 metres wide in the rainy season and is navigable all the year round by large cargo boats.

Chitra : This is bifurcated into two rivers. Chitra-1 flows from north-west to south-east extending from the Kharogdaha to the Atharabanka river, a distance of 6 Km. It is 60 m wide in the rainy season and is navigable for 3 months of the year by small boats upto Khajuroa. South of this point, it is navigable all the seasons. Chitra II also runs from north-west to south-east, having the Atharabanka at Nagor kandi and emptying itself into the Madhumati at Chitalmari. It is 34 Km. in length, 50 m wide during the rainy season and is navigable all the year round by medium sized passenger cargo boats.

Bhaleswar : The Bhaleswar or Haringhata river, the eastern important tributary of Bagerhat is folowing about 22 Km. north-east of the Bangra. It has a very specious entrance about 13 Km,wide between two great banks, which project from the land on each side. Although there is sand bar at the mouth with only 7 m depth of water at low tide, the navigation is easier than that of any other rivers at the head of the Bay of Bengal. The river banks or shores, which have formed at each side of the mouth and extedned eastward for several kilometres and act as break waters to the swell. The river serves as the outlet of Morrelgonj a town, situated on one of its branches, the Pangashi, about 9 - 10 Km. from the mouth. This town was declared a port in 1863.

Pashur River : The western estuary in Bagerhat is the Pashur, which forms the boundary between this district and the Dakop Police Station of Khulna District. It is formed about 6 Km from the sea by combination of two rivers. It is navigible by small craft all the years round. The length is about 90 km. and the with is 8 km. Mongla river is the principal branch of Pashur river.

Bhola : The Bhola, which originates from the Haringata near the Supoti flows in the southernly direction throughout the Sunderbons. It flows first in the western side of the Sharnakhola P.S and then through Morrelgonj Police Station, then it flows in a westernly till it falls in the Pashur river. The river mouth is almost entirely silted by sand. The river is navigible by large boats all the year round.

Barisal Guns : The Bagerhat district is located on the costal area of Bay of Bengal. Tributaries of main stream falling in Bay of Bengal are frequently hit by squalls and cyclones which make a sound in a costal area. This sound of rivers is known as " Barisal guns". This sound is maninly heard in this district during the rainy season. The

sound of 'Barisal guns' is usually heard distinctly in rainy season on the occasion of squall. generally while the tide is rising. M.H.J. Rainy a zaminder of Khulna, pointed out on serious circumstances that the direction of sound appears to travel invariably along the close of the streams that discharge themselves into the Bay (Bari, 1978).

The rivers and channels of the district are important factor of the study area. The rivers and its distributaries are distributed like a circuit in the entire region. Steamers, launches and thousand of small country boats are a part of water communication, Because the transport cost remains still considerably low in the water route.

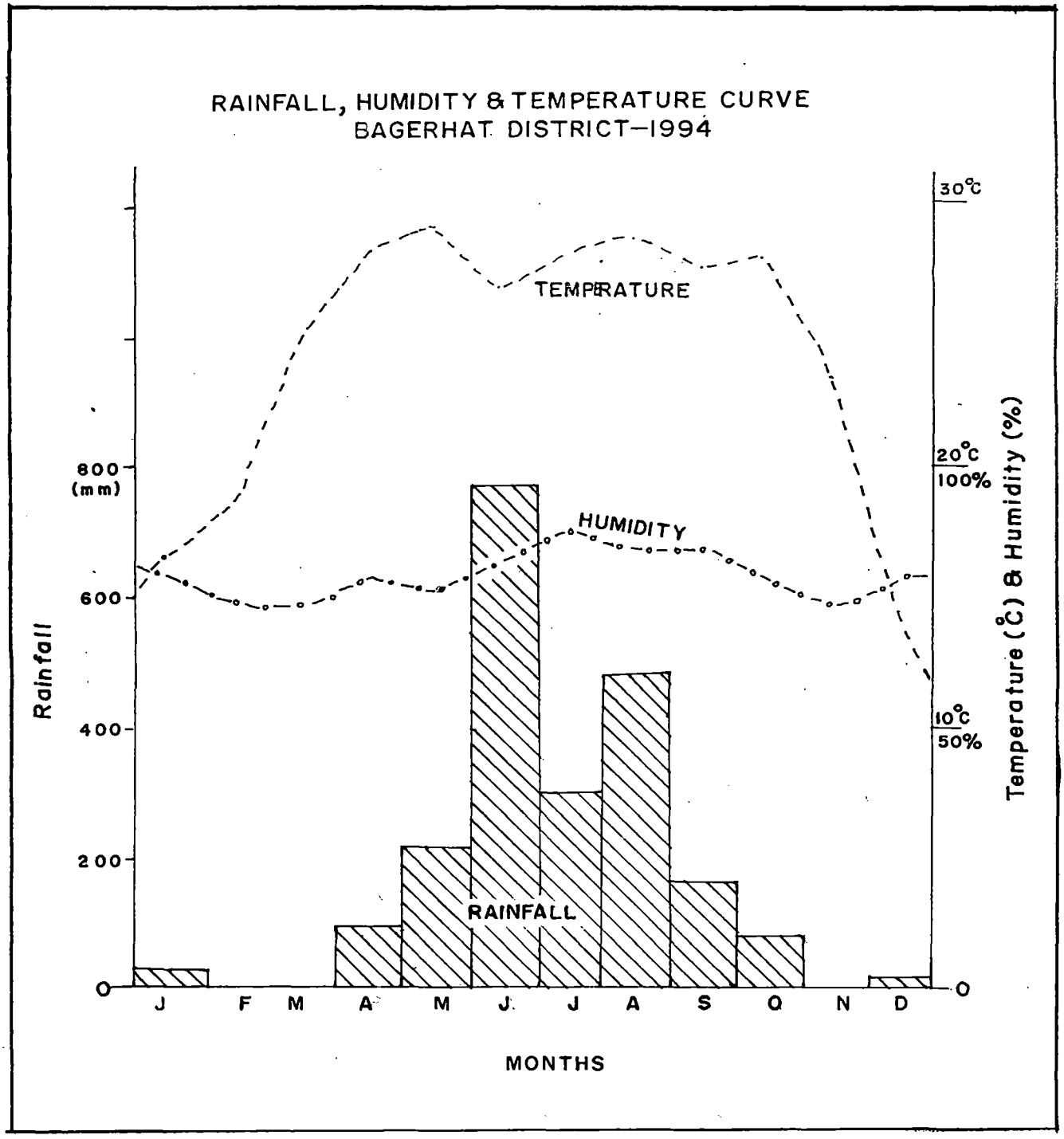
1.4 CLIMATE

Bagerhat district enjoys monsoon types of climate with wet summer and dry winter. It has a distinctly different climatic feature as regards temperature and rainfall distribution. Bangladesh has been distinguished into seven climatic sub-zones. Of these seven climate sub-zones, Bagerhat district along with other parts of the Barisal Division, fall in the south-eastern sub-zone, excluding of land in south west Sunderbon (Rashid , 1977). This region is regarded as the small range of mean temperature zone. This is the medium rainfall zone and dewfall winter area of Bangladesh (Rashid, 1977) The mean temperature, rainfall and humidity of Bagerhat station are shown in table - 1.2 and figure 1.5.

Table1.2. Monthly rainfall temperature and humidity of Bagerhat district (1995)

Name of the Month	Average rainfall (mm.)	Temperature (°C)			Humidity (Percent)		
		Maxi.	Mini.	Mean	00.00 (hours)	03.00 (hours)	12.00 (hours)
January	32	21	13	17.0	85	82	65
February	0	25	13	19.0	91	75	65
March	0	33	18	25.5	92	75	61
April	96	32	25	28.5	94	81	71
May	223	32	27	29.5	93	78	65
June	772	28	26	27.0	95	85	87
July	296	30	27	28.5	96	90	87
August	482	31	27	29.0	95	87	83
September	159	30	26	28.0	96	87	86
October	81	31	26	28.5	95	79	77
November	0	29	18	25.5	92	75	75
December	6	16	13	14.5	94	82	75
Average	**179**	**26**	**22**	**25.0**	**93**	**81**	**75**

Source : *Direct Survey, Khulna Meterological Office, Bangladesh 1995*


RAINFALL, HUMIDITY & TEMPERATURE CURVE
BAGERHAT DISTRICT–1994
TEMPERATURE
HUMIDITY
RAINFALL
800 (mm)
600
400
200
0
Rainfall
30°C
20°C
100%
10°C
50%
0
Temperature (°C) & Humidity (%)
J F M A M J J A S O N D
MONTHS

Fig–1·5

Rainfall : Bagerhat district enjoys an anual average precipitation of 174 mm. There is small variation in rainfall in different parts of the district. The 15th of June is the beginning of the rainy season, but rainfall starts frequently by the end of April due to approach of monsoon. The rain continues upto October but maximum rainfall is experienced in the month of July.The month of October and November lie in the transition period from the rainy season to the winter. The maximum amount of rainfall 482 mm was recorded in the month of August, 1995. The minumum rainfall in the month of December was 6 mm of the dry season.

Temperature : The maximum and minimum temperature during the winter season (Dec - Feb) vary from 25° to 14°C . The weather becomes very hot in April and continues to middle of June. During the summer season i.e., from March to June, the maximum and minimum mean temperature vary from 33° to 21° C.

Humidity : The humidity of atmosphere is considerably high through out the year never falling below 70 percent (average). Studying the nearby areas and this district as a whole the annual percentage of humidity is 77. Generally the lowest humidity that is 61% is recorded in the months of January and February and the highest humidity 96 percent is recorded in July and August. (Table 1.2). The climate of the district has seasonal variations.Bagerhat district experiences the following three seasons in the year.

DIFFERENT SEASONS

(a) **Rainy Season :** Rainy Season on-sets from June and continues upto October. In the rainy season, the district receives more thatn 80% (about 140 mm) of the total annual rainfall and it is the important agricultural season. The south-west monsoon breaks in the second week of June, while it normally withdraws before the middle October. This season is characterrised by high relative humidity and high temperature making the water very much stuffy. July and August are the rainiest months, and the amount of rainfall during these months varies between 200 and 500 mm. The peak of the monsoon is to be found in these two months and it is also the peak of the flood season which may even escalate upto the month of September.

(b) **The Winter Season :** Winter season starts from November and continues upto the end of February. The north-east wind prevails in the winter season, and at this time, the direction of wind over North India is from north-west. This wind contains very little

moisture because of its land origin. Cool and fair weather conditions prevail in this season, but sometimes scanty rainfall occurs consequent upon the passage of the Western disturbances. The average winter temperature ranges between 15°c and 25°c. The summer weather prevails in the months of March and April, when the night still remains cool. It is replaced by the warm moist southernly sea wind bringing in more and more humidity in the daytimes and the end of the winter season.

(c) **The Summer Season** (April - May) : This is the hottest period with average maximum temperature between 32° and 38°c The highest temperature is usually recorded in the month of May. In this season Nor' westerns locally known as 'Kalbaishakhi' are of frequent occurence. The Nor' westers are evening squals or violent winds with an average velocity of 50 - 65 Km per hour. Occasionally attaining 90 Km. Per hour uprooting trees, capsizing boats and collapsing huts. These are also frequently associated with thunder showers, as a consequence of which there is always a sharp fall of temperature sometimes even by 16°-18°c. The average rainfall in the Nor'wester season is little more than 125 mm and this helps for fruits and vegetables productions.The summer season includes the months of March, April and May.

The climate has a great influence on the agrarian economy of the region. The amount as well as distribution of rainfall is of vital significance in crop production. Abnormality and low incidence of rainfall often bring out adverse effects on the crop production and on the economic life of the people. Its impact is clearly manifested on the marketing and determination price of the commodites. It has been reported that due to the variability of rain in the years of excess or drought, the price of certain commodities such as nut, brinjal, rice, pulses, jute etc. fluctuate. This situation is however not applicable for the country as a whole (Ahamed - 1988). Again, in normal years, generally there is a good harvest and as a consequence huge supply of agricultural commodites at the market centres bring down their prices considerably. Sometimes excess of rainfall and floods damage standing crops.The impact of natural calamities again is manifested on the marketing price of commodites at the markets. Thus, the pulsation of the 'hats' is closely associated with the failure or fair harvest of the crops, which in turn, is linked with seasonal variability of rainfall.

The intensity of marketing and also attendance of people at the market centre vary at different seasons of the year, even if the occurence of rainfall is normal and timely. During summer Nor' Wester, the peasants remain busy for ploughing and sowing

Jute and Aus paddy. Again during the rainy season, the peasants cultivate the lands prepare them for aman, the main rice of the study area. Aman is harvested in the months of November or December and also first half of January. During the harvesting period, the peasants remain busy for harvesting purpose. After the harvesting period, the peasants generally stay in their residence. So the post-harvesting period (i.e, January and February) is the period of low employments and the lands are generally left follow until next cropping season. As a result, the people in general and the peasants in particular usually command a fair purchasing power in the markets. And a large number of them are found to do marketing more frequently during this period than other two seasons of the year. So it is found that the attendance and commodities arrival in the markets depend on climate and production of crops.

1.5 SOIL

The district is formed entirely by the deltaic action of the Ganges which brought mud and limestone from the Himalaya. The soil is not to a great extent uniform in character and varies only by greater or small admixture of sand. The percentage of sand is high along the river banks and less in those areas where delatic action has ceased. In old 'beel' (marsh), the decayed vegetation produced a stratum of black soil.

During the delta building, rivers had direct connection with the Ganges, they brought down a considerable admixture of sand which they deposited along with finer alluvial mud. The resulting soil is of light sandy in character and suitable for intensive cultivations when first deposited, for growing pulses, oil seeds and melons and after enrichment by vegetables detrites, suitable for fruit trees and betel vines. Soil of this nature exists in the older upland areas of the northern district and in the vicinity of the only two rivers, which, now, carry the Ganges water viz- the Ichhamoti and Modhumoti-Baleswar. The soil deposited by river whose head waters are closed in either surface deposits or fine alluvial brought down by more active rivers and distributed by connecting channels on the flood time; in other case it is fine tenacious mud often arillaceous in the character. This soil is generally prevalent throughout the district and is the main source of paddy crops. In ancient 'beel' (marsh) area the decayed vegetation produces a stratum of black soil known as 'Jobe-mati'. It is almost sterile unless enriched by a considerable admixture of alluvial soil and even so, produces very inferior crops Deep loring reveals the presence of this stratum in many places in the district but fortunately it only crops out in a few marshy areas sufficiently near the surface to interfere with cultivation.

In context of Bangladesh, a group of soil formed in the same way and which are broadly similar in appearance. The soil survey project has indentified 17 general soil types formed (FAO. 1971) in Bangladesh.These 17 types of soils are distributed all over the region. Bagerhat district has grey flood plain soil and lime phase class of the country. A generalised account of the nature and distribution of the soils reveals that micro variations of soil are seen in the district. There are three zones of soil that is the north, the east and the southern zones.

The soil of north part in the district is composed of recent alluvium. This soil type covers the low lying areas in the district which is riverine flood plain. The potash (K) and phosphorous (P) content are fairly high. The soil responds quite well to manuring and generally acidic in character. This soil is found in Mollahat and Fakirhat Police Stations, There is also black brown peat in some areas. This category of soil is ideal for paddy, Jute, vegetables and mustard.

The eastern soil zone includes the Kachua and Bagerhat Police Stations and northern part of the Morrelgonj Police Station. This Soil is clay loam (Doash) and is ideal for different kinds of paddy. Its need for manuring is becoming so great that the soil fertility is declining due to intensive farming. In this part, Bagerhat Police Station (70%) have 'doash' soils and Kachua Police Station has 58% 'entel' soil. (Table-1.3) Secondly, this includes only three police stations of eastern part of the district. It is a low land area and in most part is liable to be submerged under saline and tidal water. The soil is clay and fine sand loam of saline character. But, in case of regular washing by rain-water the salinity remains low. This soil is productive in different kinds of cereal crops. The amon paddy is successfully grown in the soil because of high ground water table.

The mangrove forest soil, lies in the southern part of the district. In the mangrove zone, the soil is highly salines and gets submerged regularly during high tides. Land formation in the area is not yet complete and regular silting is taking place undisturbed by human agency. Most of this soil are located out side the forest zone and forest area, with mangrove trees (Sunderbon). This type of soil covers four police stations and about 80% of their land are flooded. When reclaimed, this soil does not yield good crops at the beginning, because of high salinity. The yield can be increased by reducing the salinity of soil and also by rain wash over a numer of years.

Table - 1.3 Composition of Soils in percentage of the Police Stations

Name of the Police Stations	Doash (loamy)	Sandy	Entle (clayey)	Kankor (Pebbly)	Total
Bagerhat	70	10	20	-	100
Chitalmari	40	-	55	5	100
Fakirhat	20	40	40	-	100
Kachua	40	2	58	-	100
Mollahat	40	25	20	15	100
Mongla	20	55	25	-	100
Morrelgonj	60	20	15	5	100
Rampal	14	2	84	-	100
Sarankhola	30	70	10	-	100

Source : *District Statistical book 1989 Khulna District, Bagerhat.*

1.6 VEGETATION

The tropical climate and the fertile soil combine to clothe the study area in an evergreen mantle. The greenery is very striking to the traveller from the western part of the Indian subcontinent, who find the thick cover of trees and grasses and crops a delightful contrast to the dun and brown vegetation of the western sides. It is viewed from the air that the vegetation looks its loveliest, the rows of graceful palm, the deep green masses of mango trees, the light greenreplashes of the clumps of bananas and the feathery bamboo, all arranged neatly around the huts and water tanks, make the country side look like a garden.

The ten famities of the plants found in the area / which has within it parts of the Gangetic plains are :

(i) Grasses (*Graminae*).
(ii) Pulses, ground nut; tarmarind etc. (*lenguninosae.*)
(iii) Sedges (*Cyperaceac*)
(iv) Some weeds of the rice field etc. (*Srophrulariaceac etc.*)
(v) Cotton ladysfinger. etc. (*Malvaceae*)
(vi) Hargoza; Babasak etc. (*Acanthaceae*)
(vii) Sunflower, gujitil etc. (*Compositae*)
(viii) Castor-oil, rubber latkan etc. (*Euphorbiaceac*)
(ix) Sweet potato, morning glory etc. (*Convolvulaceae*).
(x) Mint, Basil and other herbs (*Labiatae*)

The following are also largely represented : Bamboos (*Poaceae*), Palms (*Palmeae*), Various vegetables, (*Cucurbiltaceae*) Akanda (*Asclepiadaceae*) etc.

The most common trees of the countryside is the Coconut and Mango. (*Cocos nucifera and Magnifera indica*). This is a fruit tree, but often when it does not fruits, it is used for timber. The betelnut palm (*Areca catechu*) ought to hold the second place. The palm is the most common tree of the groves. Along water courses and water tanks, the *Madar* (*Erythrina variegata*) Jiyol or *Badi (Iannea grandis)* and *Hijol (Barrinatonia acutangula)* are the common trees. The *Jiyol* is a very common fencing as it grows readily from cuttings. Within the groves the Jak fruit *(Artocarpus heterophyla*), Jam (*Syzygium Jambolana*), Banana (*Musa sapientum* and *M. paradisiaca)* and the Coconut (*Cocos nucifera*) are the other common trees. Of bamboos, the Talla (*Bambusa tulda*) is the commonest. The khejur palm (*Phoenixsyvestris*) and Tal palm Coconut (*Borassuas flabellifer*) are generally grown at a distance away from the groves, around water tanks, along road or on the narrow divides between the fields. The Rattan palm (*Calamus rotang)* grows in thicks is damp ground. Along the ditches and by the sides of the groves, small flowering plants like *Homalomena aromatica, Crinum amoenum Globba subulata, Alpinia bracteata and A. malaccensis, Hedyclium flavum* and many others grown. In shades damp corners of ferns such as *Actiniopteris flabellata, Hamionities* cordata. and *Drymoglossum Piloseloides* grow on trees and amongst the under growth.

Several varieties of orchids are common. *Jibanti (Desmostrichum fimbriatum Budbar) (Eulophia muda) Rasna (Vanda tessellata), Salibmisri (Eulophia campestris)* and shethuli (*Zeuxine strateurnatica*) are medical orchids used in the country side. *Calanthe masuca* and *Dendrobium pierardi* are two of the most common orchids. Open spaces such as the edges of playground, railway and road embankment, follow fields etc. usually have a scattering of perennials like *Jatropha gossypifolia, Solanmus indicum*, *Argemone mexicana*, *Mimosa pudica,* and *calotropis gigantea*; with break of the monsoon rains there are almost choked with the rapid growth of various small *Cassias* (*sophera, tora and occidentalis*) and grasses, the most prominent of which are Cynodon dactylon and *Imperata arundinacea.*

Banyan (*Ficus bengalesis*) and Oshot *(F. religiosa)* are large trees, of the fig family grown as shade trees. The rain tree (*Samania saman*), another species which grows to a very large size is also grown for shade. Some of the largest of these three species may be seen in the compounds of the Government offices in the market. Trees

of these species, measuring four and a half metre and more around the trunk (at one and a half metre from the ground) are fairly common. The swamps, ditches and many of the water tank contain a rich variety of species. The water lettuce (*Pistia stratoites*), duckweed. (*Lemna minor*) *Nasturtium palustre*, *Lepidium Sativum*, *vallisnerria spiralis*, and the water-lily *(Nymphea stellata)* are common. Two of the most interesting are the blue flowering *Euroyle ferox* and the floating flytrap *Aldrovanda vasiculosa*. The edges of the water courses and swampy areas usually favour the growth of reeds and large grasses, like *Arundo donax, Saccharum spontaneum* and various *Andropogons*. No account of natural vegetation can be complete without mention of the Bengal Rose (*Rosa in volucrata)*, whic is found in the high land. This white-flowering rose is remarkable that it is the only representative number of genus *(Rosaceae)* that is otherwise strictly extra tropical. Various acclamatised garden roses also flower profusely.

Various strongly scented flowers are widely grown in the district. Among them the Queen-of-the-night *(Nyetanthes arbotristic), Jasmine (Jasminum officinale). Rajanighandha (Polioanthes tuberosa), Beli (Tabernaemonta divaricata) Bakul (Mimusops elengi)* and *Kamini (Murraiya exotica)* are common. Other common shrubs and trees grown are *Hibiscus rosasinensis, Hibiscus mutabilis, Gardenia florida. Michelia champacasaracaindica Plumeria acuminata and Bauga inville rosea* Of seasonal flowers, the French and Indian Marrigolds and the Cocks comb have been in favour for a longtime, Pansy, Phlox and Sanpragon are not uncommon. Roses are favoured by the few discriminating gardeners. Of late flowers are being grown for commercial purpose and many florist have opened shops in the town area. Unlike most tropical areas,gregarious species are not uncommon in Bagerhat forest. The forest at the Southern end of the district and extends inland, in places as far as 160 Km. The Bengali name for the Sunderbans is "Sunder-Bon" beautiful forest. The main tree is sundari *(henitiera fomes)*. Which yield a heavy but excellent timber. It comprises over 70% of the forest cover between Haringhata and Pusur river, but diminishes to 50% along the Arpangasia river of the forest. The Gewa *(Excoecania agallacha)* is the next most important tree. It comprises 20% of the forest in this zone. It yields a soft timer which is being extensively used in the newsprint factory. Other trees associated with this area are *Dhundul (Carapa Obovata) Amur (Amoora Cucullata), Pasur (Carapa moluccensis), Bain (Avicennia tomentoa), Kankra(Brugniesa gymnorhiza)*, and *Sondal (Afzelia bijuga)*. All these trees are nongregarious in character. Along the streams the common trees are the two palms. *Hantal (Phoenix paludosa) and* Golpata *(Nipafruticans)*. The willow like *Keroa*

(Sonneratia apetala) and such small trees as Kirpa *(Lumnitzera recomosa)*, Shingra (*Cynometra remiflora*), Sing (*Cynontetra bijuga*) Parash pipal (*Thespesia populnea*), and Ora *(Sonneratia acida).* The important weeds in this type of forest are Bhola *(Hibiscus tiliaceus)* Kewa kanta *(Pandamus odoratissimus).* Hodo or Tiger Fern *(Achostichum aureum)* and Sundri-lota *(Browntonia lanceolata).* Goran *(Ceriops roxburghiana)*, Dabur*(Cerbera odallam),* Karanj (*Pongamia glabra*), Dimal *(Salacia prinoides)*, Kenkti (*Acanthus ilicifolius*), Khalsi *(Agiceras corniculata),* Baen, Pasur, Bhola and Hantal are the other common trees in this western zone of the forest. Goran is the most common tree of this forest. (Ahmed, 1997). The Sunderbon forest is the reserved forest and managed by the government authority (Fig - 1.1)

CONCLUSION

From the study it is visualised that the district is flat and covered with alluvial broken down by the rivers and channels. Due to topographical variations and locational characteristics, the district suffered from acute drainage and flood problem. Cyclones occasionally occured, soil is fertile but salinity water makes the soil unfertile for crop production. Heavy concentrated rainfall and storms are the common characteristics features of the climate in the district. So it is revealed that the district has suffered for physical and environmental problems. The fertile soil and vegetation and their characters developed on account of these processes are of fundamental importance for this study which can be discussed in the next chapter.

CHAPTER - TWO

AGRICULTURAL AND LANDUSE PATTERN.

INTRODUCTION

Bangladesh has been beset with complex problems of agriculture over the years. The limited land area, uneven growth of population, large scale unemployments have been ailing the economy of the country. It is amazing to note that due to poor industrialization, majority of population of the country live in rural areas and agriculture continues to be their mainstay (Gupta, 72). This condition, is seen in whole Bangladesh. Agriculture is the most important economic activity and landuse feature is the same in Bagerhat district. From the point of view of agriculture, the landuse pattern of the district is classified into two types : viz (i) Non-cultivated lands and (ii) Cultivated lands. Most of the people in the district are directly or indirectly engaged in agriculture due to favourable physical, socio-economical and cultural factores of the region (Tamasker, 55). Thus, agricultural production plays an important role in the economy of the district in general and the economic condition of the people in particular. The present section of this chapter deals with the landuse and cropping pattern of the district. Discussions have also been made regarding the nature of constrains those have stood in the way of development in agriculture in the past and at present.

2.1. LANDUSE PATTERN

The landuse pattern of the district is determined by the various factors. Primary factors are physical, climate, and soil. Secondary factores are social, economical and occupational trend of the area.(Singh, 90). On the basis of landuse, the lands are broadly classified into two types, namely, (i) cultivated and (ii) non-cultivated lands. Cultivated lands are further classified into (a) cropped (b) orchard & (c) current follows. Non-cultivated lands are classified as : (a) settlements (b) roads or paths (c) water bodies (d) rivers & canals and (e) miscellaneous use.

Bagerhat district presents a unique physio-cultural structure which has contributed to the evolution of a various landuse pattern. In terms of geographically, about 122, 726 ha are covered with forests, while another 3,818 ha. are shared by current fallows. Out of total utilized land, the cultivated land is 80.5% and non-cultivated land is 19.5%.

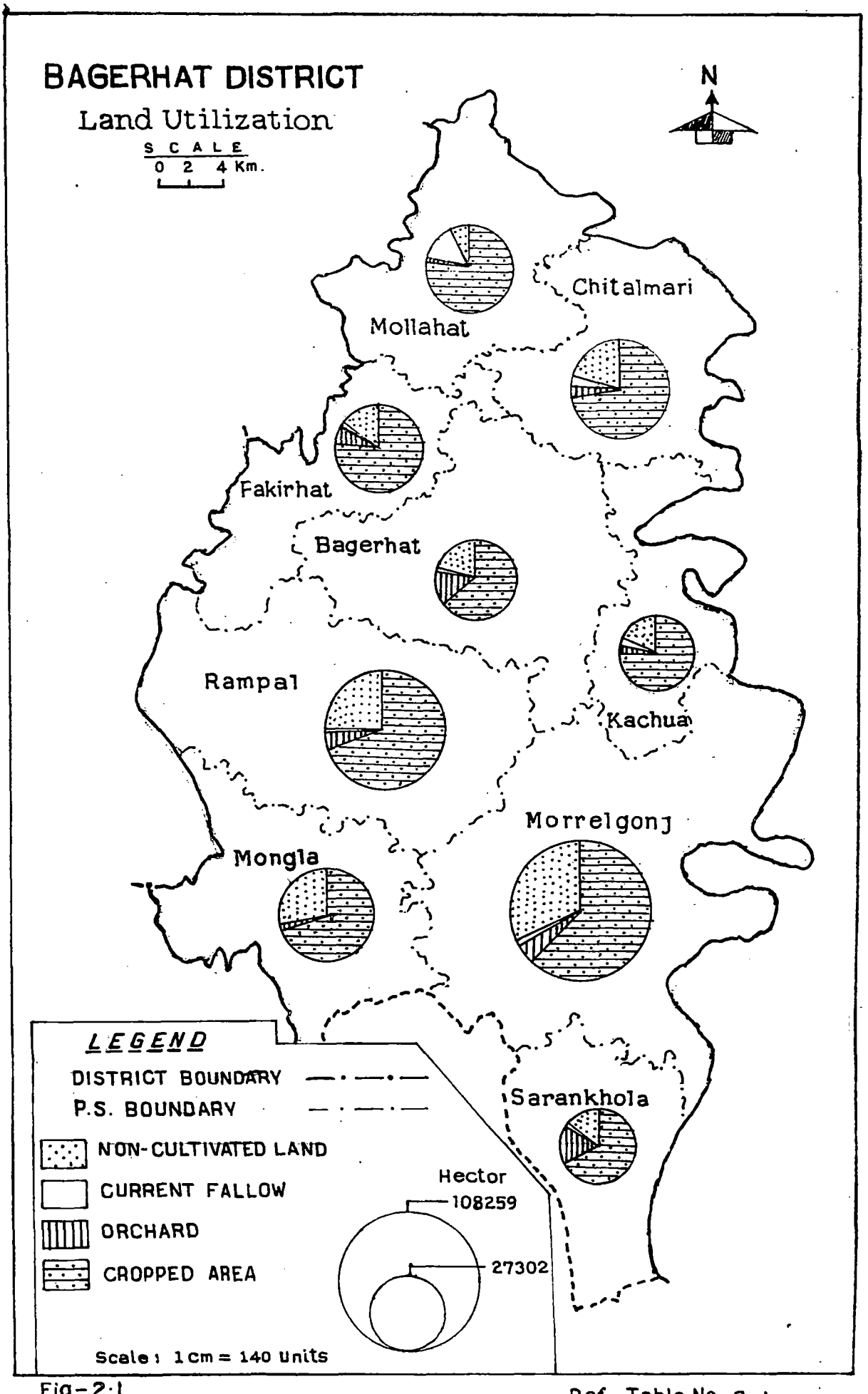


Fig-2·1

Ref. Table No. 2·1

Population density, land tenure system and technology in agriculture depend on landuse pattern of the district. About 87.5% of the total area are covered by crops and only 7.5% are orchard. Remaining 2.9% are current follows. (Table. 2.1.)

Table - 2.1. Percentage of land utilization in different Police Stations of the District.

Total Utilization are in percentage				Cultivated area in pecentage			
Name of the P.S.	Cultivated Area	Non-Culti Vated Area	Total	Cropped Area	Orchard	Current Follows	Total
1. Bagerhat	79.9	20.1	100	82.5	16.7	0.8	100
2. Chitalmari	81.1	18.9	100	91.6	3.6	4.8	100
3. Fakirhat	86.0	14.0	100	90.7	7.6	1.7	100
4. Kachua	81.3	18.7	100	96.1	3.2	0.7	100
5. Mollahat	72.3	27.7	100	97.7	1.6	0.7	100
6. Mongla	93.4	6.6	100	82.5	1.5	16.0	100
7. Morrelgonj	68.2	31.8	100	92.5	6.8	0.7	100
8. Rampal	75.3	24.7	100	92.9	6.7	0.4	100
9. Sarankhola	86.5	13.5	100	78.9	20.9	0.2	100
Distict average	**80.5**	**19.5**	**100**	**87.5**	**7.6**	**2.9**	**100**

Source : *Bangladesh Bureau of Statistics, 1983.*

The net sown area in the district is 12,798 ha. which is considerably small for such a huge population. Police station-wise, Mollahat Police Station accounts highest share of the cultivated land (97.7%), Rampal and Mongla P.S. share 92.9% and 82.5% cropped land respectively. Another two police stations namely Kachua and Morrelgonj occupy next position with 96.1% & 92.6% respectively. The lowest percentage (78%) of cropped area is found in Sarankhola police station in the district. Table 2.1 and figure 2.1 presents a clear picture of the regional variations of various types of landuse in the district.

A large percentage of total geographical area of the district are available for cereal crops. A vast area of the district is mono cropped. Its percentage is 69% to the total and it can be understood from table 2.2 and figure 2.2. Among nine police stations, Chitalmari has the highest percentage (89%) in double cropping and Mollahat has lowest percentage (2%). About 7 & 6 percent (highest) of total cropped area are under tripple crops in the Mongla and Chitalmari Police Stations.

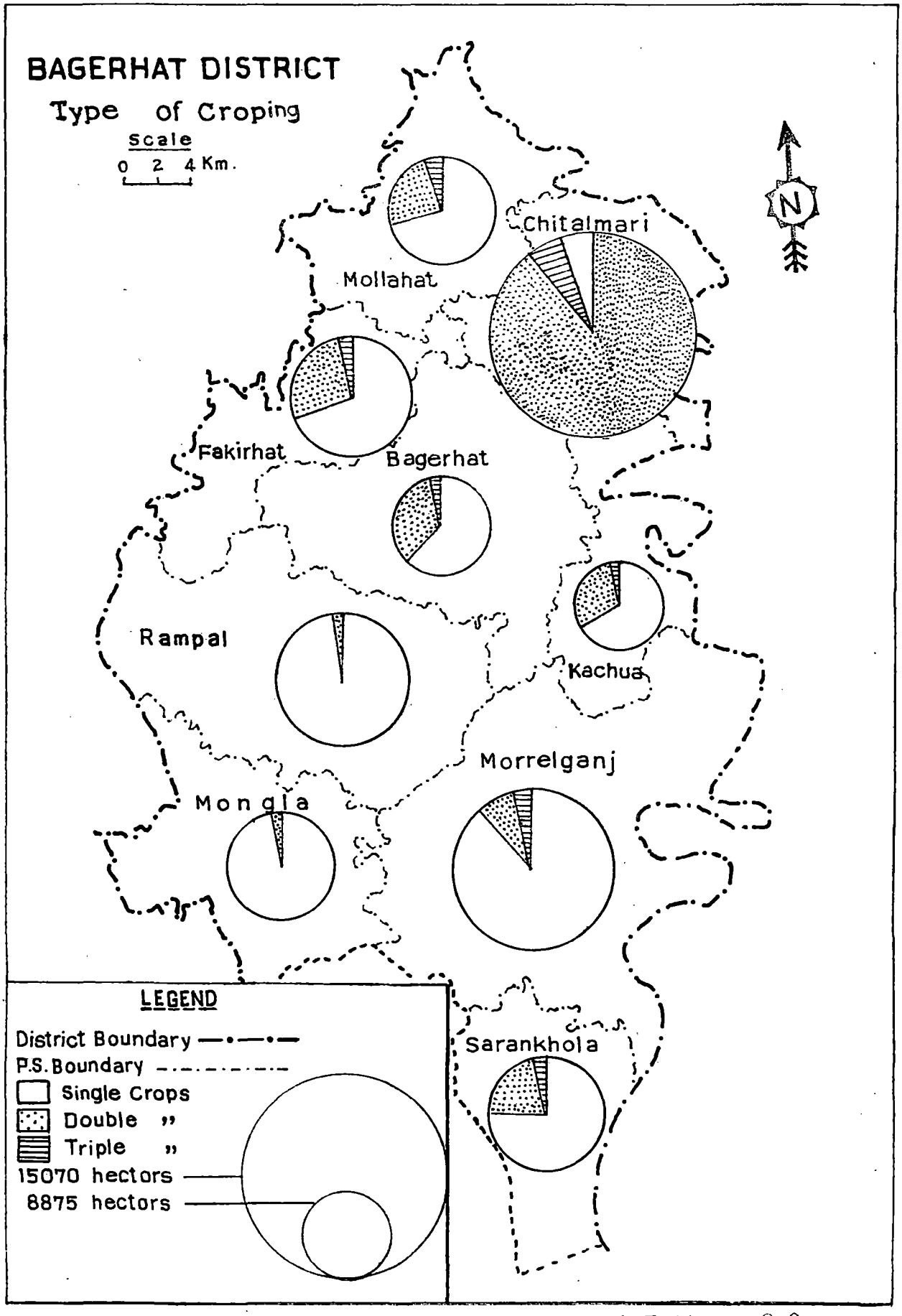


Fig-2·2

Ref. Table No. 2·2

Table - 2.2 Types of Cropping pattern and their area in hector

Name of P.S.	Mono crop area in ha.	%	Double crops area in ha.	%	Tripple crops area in ha.	%	Total area in hactor.	%
Bagerhat	4931	63	2850	35	266	2	8047	100
Chitalmari	494	5	8003	89	540	6	9637	100
Fakirhat	8108	69	3228	27	481	4	11817	100
Kachua	7059	65	3654	33	208	2	10921	100
Mollahat	1259	97	275	2	18	1	13025	100
Mongla	7998	68	2920	25	828	7	11746	100
Morrelgonj	24306	89	2520	9	488	2	2732	100
Rampal	18534	97	487	3	4	-	19024	100
Sarankhola	7403	73	2718	26	88	1	10209	100
TOTAL :	79892	69	26655	28	2921	3	97158	100

Source : *The Bangladesh census of agriculture & livestock, 1983 - 84*

2.2 SIZE OF LANDHOLDINGS

The size and distribution of agricultural lands play an important role in determining the quantity and quality of agricultural production. Due to huge density of population, majority of landholdings are small in size. In Bangladesh, the land is divided into a number of plots of varying sizes with the breaking of joint family system. Further division and fragmentation of landholdings in small plots have become the characteristics feature in the district. Thus, available tiny size of holding is one of the constraints in progress of agriculture. In the study area. Table 2.3 indicates that the cropped area of farm holdings in the district.

Table 2.3 Percentage of under farm and nonfarm holdings in the district.

Name of P.S.	Farm holds	Non-farm hold.	Total
Bagerhat	83.0	17.0	100
Chitalmari	84.0	16.0	100
Fakirhat	83.0	17.0	100
Kachua	85.0	15.0	100
Mollahat	78.2	31.8	100
Mongla	76.0	24.0	100
Morrelgonj	80.0	20.0	100
Rampal	73.0	27.0	100
Sarankhola	80.0	20.0	100
District total	**80.2**	**20.8**	**100**

Table 2.3 reveals that the highest percentage (85%) is in Rampal Police Station. About 80% percent of farm holdings are owned by farm-holders and 20% belong to non farm-holders.

In the study area, the majority of farm are small in size. Their cropped lands are divided into different kinds of farm sizes. In the the district, the farm holders are classified into three categories : (i) large size (above 7.5 ha) (ii) Medium size (1 - 7.5 ha.) and (iii) small size (below 1 ha). There are 69% of small size farms and 24% percent of medium size farms in entire district and large farms are very few. From table 2.3, it is noticed that highest percentage of small farms is in Fakirhat Police Station and lowest percentage is in the Mongla Police Station. On the contrary, Kachua occupies lowest percent in large farm and Mongla has highest percentage of large farm. Table 2.4 gives a further detail of the farm size distribution.(Figure - 2.3).

Table 2.4 : Percentage of farm holders in different farm sizes.

Name of the P.S.	Sizes of farms in percentage			
	Large above 7.5	Medium 1.0 - 7.5	Small below 1.0	Percentage to total
Bagerhat	5.0	22.9	72.1	100
Chitalmari	4.0	24.5	71.5	100
Fakirhat	5.90	5.9	88.2	100
Kachua	3.9	10.8	85.3	100
Mollahat	5.0	29.3	65.7	100
Mongla	12.9	23.3	63.8	100
Morrelgonj	5.9	21.4	72.7	100
Rampal	9.2	25.3	65.5	100
Sarankhola	5.5	25.4	69.1	100

Source : *Thana* Statistical Office, Sarankhola Police Station, 1995.

It is revealed from table 2.4 that major percentage of farm holders have less than .1 ha. Second highest number of percentage in medium farm holders have 1 to 7.5 ha. and lowest number of farm holders is in the large size farms.

It has been also found, from the comparison of different police stations, in regards of farm holdings that the highest percentage (29.3) of farm holders is medium size farms at Mollahat police station. It is noticed that less than 6 percent of large farm

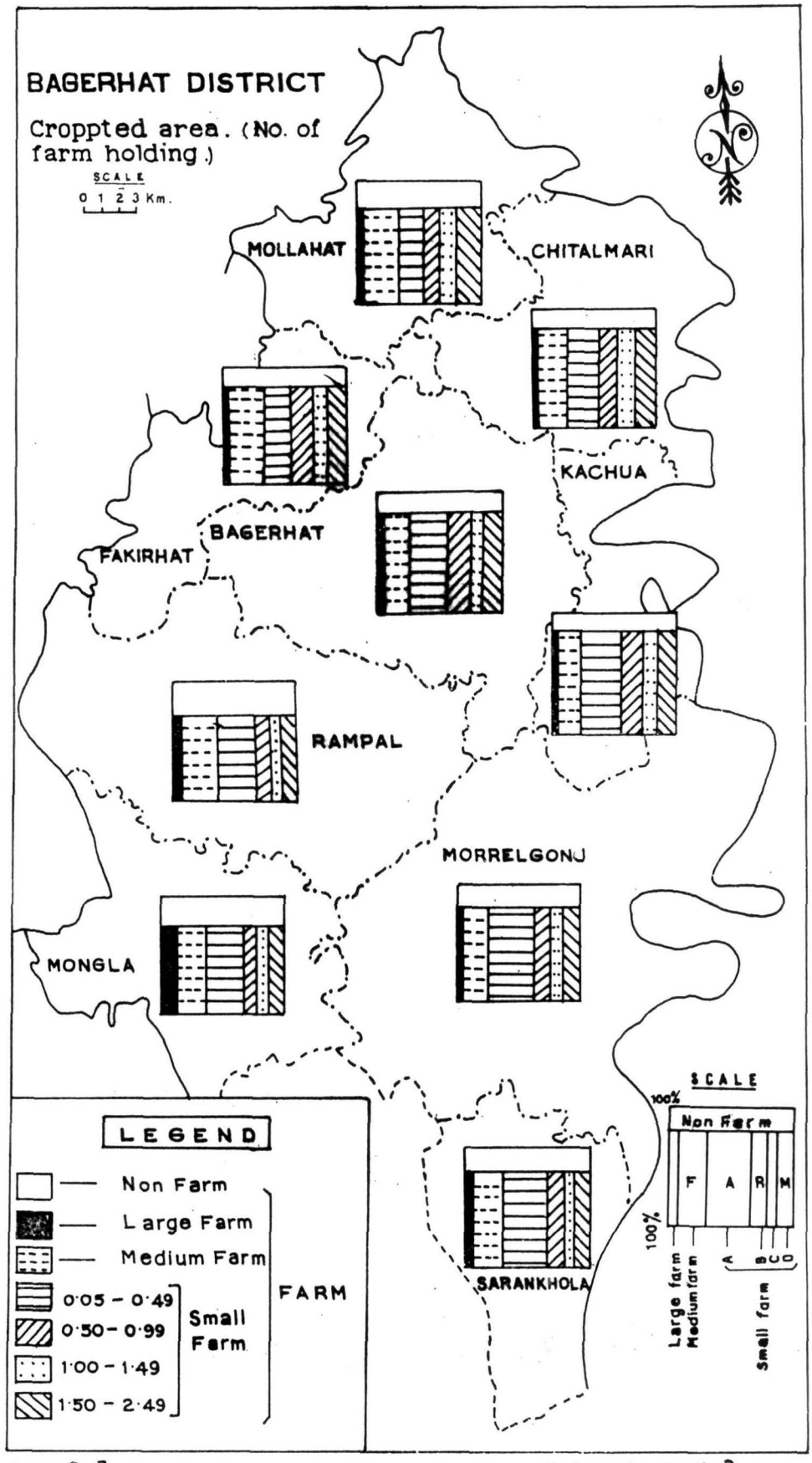


Fig – 2·3

Ref. Table No. 2·3

holders are found in 7 police stations and remaining 2 police stations have 12% & 9% respectively. Again small farm holdings are divided into four groups. Out of total, 70 percent are small farm holdings, majority of the farm holdings are less than 0.20 ha in the district. (Table 2.5). Nearly 16 percent farm holding are found in 0.4 - 0.6 ha and very small proportion farm holders of 13.1 ha seen in the Sarankhola. The size of small farm holdings in the different police stations can be visualized from table 2.5

Table : 2.5 Percentages of small sized farm holdings in the police stations.

Name of P.S.	A	B	C	D	Total
	below 0.20 ha.	0.20 - 0.40 ha	0.4 - 0.6 ha	0.6 - 1.0 ha	pecentage
Bagerhat	42.0	22.5	15.1	20.4	100
Chitalmari	30.5	23.7	20.6	25.2	100
Fakirhat	36.5	25.1	16.3	22.1	100
Kachua	42.8	22.6	16.2	18.4	100
Mollahat	27.2	22.0	20.2	30.6	100
Mongla	51.1	18.1	13.2	17.6	100
Morrelgonj	49.8	19.7	14.5	16.0	100
Rampal	53.2	21.9	14.9	20.0	100
Sarankhola	52.4	17.8	13.1	16.7	100
District total	41.8	21.4	16.0	20.8	100

It is also observed that the percentage of small farm holdings in different police stations are not uniform. The area of farm holdings in the size of land are four categories that is A (> .2 ha), B (.2 - .4 ha), C (.4 - .6 ha) and D (.6 - 1.0 ha) according to the land size. From table 2.5 and figure 2.3 it is found that three police stations have above 50% of 'A' category farm holdings. And remaining 6 police stations have below 43% percent of farm holdings. Out of 9 police stations 'C' categories farm holdings have below 13% in 2 Police Stations and above 14% farm-holdings are in 7 police stations. Lastly, 'D' categories farm holdings are equally shared by all police stations.

2.3 CROPPING PATTERN

Rice, pulses, jute, wheat, oil seed, sugercane, & vegetables are the major crops all over the district. Rice is the most important crop mainly grown in the southern & eastern part of the district, with high rainfall, moderate temperature. Tidal lands and flood plain soil are favourable for the production of the crop. The area under different crops has been shown in table-2.6

Table - 2.6 : Percentage of cropped area in the disctict.

Sl. No.	Name of crops	Cropped area in ha.	% to Total
1.	Rice	324854	86.34
2.	Pulse	163060	3.42
3.	Oil seed	8564	2.28
4.	Jute	4101	1.44
5.	Sugercane	5439	1.24
6.	Vegetables	13146	3.40
7.	Spices	5489	1.46
8.	Wheat	231	0.06
9.	Others	1338	0.36
	Total (all crops)	**376222**	**100.0**

Source : Bangladesh Bureau of Statistics Office, Bagerhat, 1995.

It can be seen from table2.6 that 324854 ha, of land, i.e. 86.34% of the total area of district are devoted for growing crops of *amon* rice. Most of the cropped area are devoted for growing *amon* crops in the district. Vegetable hold the second rank in cropped area and occupies 3.5% of the total area of the land. Pulses is an important crop in the area. Oil seed occupies third rank in the region. Jute and sugarcane rank fourth & fifth respectively. Other crops are not significant.

Table 2.7 : Percentages of cropped area of cereals in Bagerhat district (1990).

	Percentage of area to total						
Name of the P.S	Aus	Amon	Boro	Wheat	Millet	Others	Total
Bagerhat	5.0	81.1	13.80	0.02	0.10	0.02	100
Chitalmari	28.8	58.5	12.30	0.03	0.30	0.05	100
Fakirhat	19.6	76.7	3.60	0.20	0.03	0.07	100
Kachua	9.4	88.6	2.00	0.00	0.00	0.00	100
Mollahat	38.2	50.4	10.90	0.30	0.10	0.10	100
Mongla	0.3	99.6	0.65	0.01	0.03	0.01	100
Morrelgonj	7.8	91.8	0.20	na	0.10	0.10	100
Rampal	0.3	99.6	0.09	na	na	na	100
Sarankhola	20.8	79.2	0.00	na	na	na	100
District Total	**14.4**	**80.6**	**4.4**	**0.3**	**0.2**	**0.1**	**100**

Table 2.7 shows that more than 80% of the total cropped area of the district devoted to cereals crops. They occupy more than 90% percent of the area under *amon* crops (cereals) at three police stations. And only in two police stations *amon* occupy below

60% of their area. Comparing different police stations, it is found that *aus* is the second ranking, cereals. In the district, Mollahat & Chitalmari P.S. have highest percentage of *aus* paddy land. The sown area of *aus* crop is not significant in other police stations. *Boro* paddy ranks third in the region. Among the nine police stations, only three police stations have good production, *boro* rice occupies about 12% of the cropped area.(Appendix table ιv). Wheat & millet are at present is less important cereals crop in the regions.

2.4. SEASONAL RELATIONSHIP OF AGRICULTURAL CONDITION OF CLIMATE

Agriculture Calender : The study of agricultural calender or Ergograph (Figure 2.4) shows that every month of the year has agricultural activity of some sort or others. The agricultural season in the district usually starts in the month of June with the break of the south-west monsoon. *Amon* rice covers more than 70% of the total cropped area. It is sown in nursery beds and later transplanted in July to prepare field for growing. The agricultural season of *aus* paddy is started from the month of March and harvested in July. *Rabi* (November to April) and *Kharif* (May to October) are two important crops in the study area. *Boro* paddy is an early summer crop sown in November and harvested in March. The growing season of *amon* crop is from July to November. The calender brings out clearly the clash and coincidence in the growing seasons of different crops. *amon* crops lands are generally single cropped and remains follow for the greater part of the year serving as grazing lands for the cattle. Pulses are grown on the same field where *amon* was harvested during the winter (October to March). If irrigation water is available, *boro* (HYV) paddy is grown in most areas on *amon* fields after its harvest and most of the other crops are normally sown by broadcasting method. From the calender, it is clear that the cultivators of *aus, amon* & cash crops depend on the rainfall and *rabi* crops is favourable for dry season in the study area.

2.5 AREA & PRODUCTION OF CROPS

Area & production of crops fluctuate with the rainfall and the nature of natural calamities. The principal crop in the study area is paddy. The production of pulses is also high except paddy. Total cropped area in the district is 1,27,098 ha. and paddy shares about

Ergograph giving climo- Agricultural condition of the District.

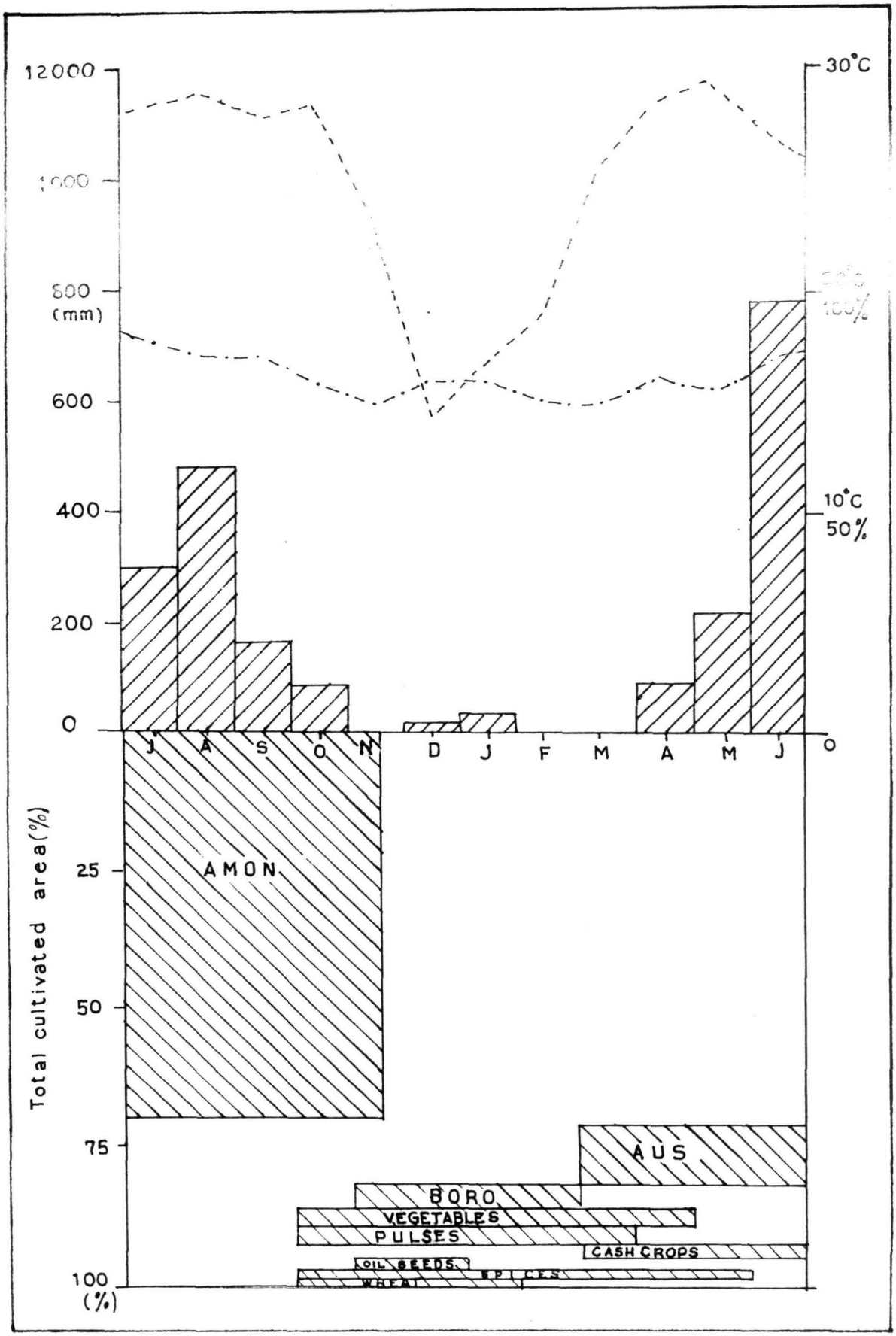


Fig- 2.4

71 percent to the total. Pulses share 3.5% of the total area. In winter season, vegetables are important crops to grow in term of area under cultivations. They share about 3 percent of the total cropped area. Sugarcane is cultivated in limited area. Spices are also produced in small quantities. The area under jute is not high in the district, compare with the other districts of the country.The percentage of major crops in different police stations are shown in table 2.8.

Table - 2.8 Percentage share of major crops by the police stations (1990.)

Name of the P.S.	Aus	Amon	Boro	Wheat	Jute	Sugercane	Potato	Pulses	Spices	Vegetables
Bagerhat	10.5	13.0	4.9	40.9	16.4	4.8	8.9	6.2	14.0	21.8
Fakirhat	8.5	7.6	75.7	35.9	17.0	9.3	13.0	52.1	7.1	31.5
Kachua	9.5	9.1	9.3	12.9	7.0	27.2	10.0	5.2	16.7	13.0
Mollahat	39.7	13.6	7.0	-	47.4	44.6	3.0	25.4	41.0	11.8
Morrelgonj	16.3	23.3	1.5	4.0	5.7	9.4	45.3	8.4	7.6	7.4
Rampal	0.2	24.7	0.0	6.3	1.3	2.6	10.4	1.7	8.5	10.3
Sarankhola	15.3	8.7	1.6	-	5.2	2.1	9.4	2.0	5.1	4.2
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

It has been found that about 39 percent of *aus* crop produce in Mollahat P. S. Rampal P.S. has the lowest percentage (29%) in the district. About 75 percent of the total *boro* paddy produce in Fakirhat Police Station and 7 & 9.5 percent in Mollahat & Kachua Police Stations. The district produces variety of *rabi* crops. Among these, potatoes, pulses, spices & vegetables are most important. But the rate of production of these crops is very low and not optimum. The highest percentage of *rabi* crops (e.g. potatoes, pulses, vegetables) in the district are produced in Morrelgonj (45.3%) Fakirhat (52.1%) and Mollahat P.S. (11.8%). (Table - 2.8). It is also found that most of the area in the district is mono cropped and the highest percentage is in Rampal police station. Major area of crops of each police station is covered by paddy and small area is covered by others crops. It is further revealed that among all kinds of paddy, *amon* occupies the highest share of total area. (Figure 2.5).

The district is not self-sufficient in production of *rabi* crops. So vegetables & food grains are imported from neighbouring district in dry season. Yet, the farmers are too much depended on *amon* paddy. It means that the failure of *amon* paddy affected very

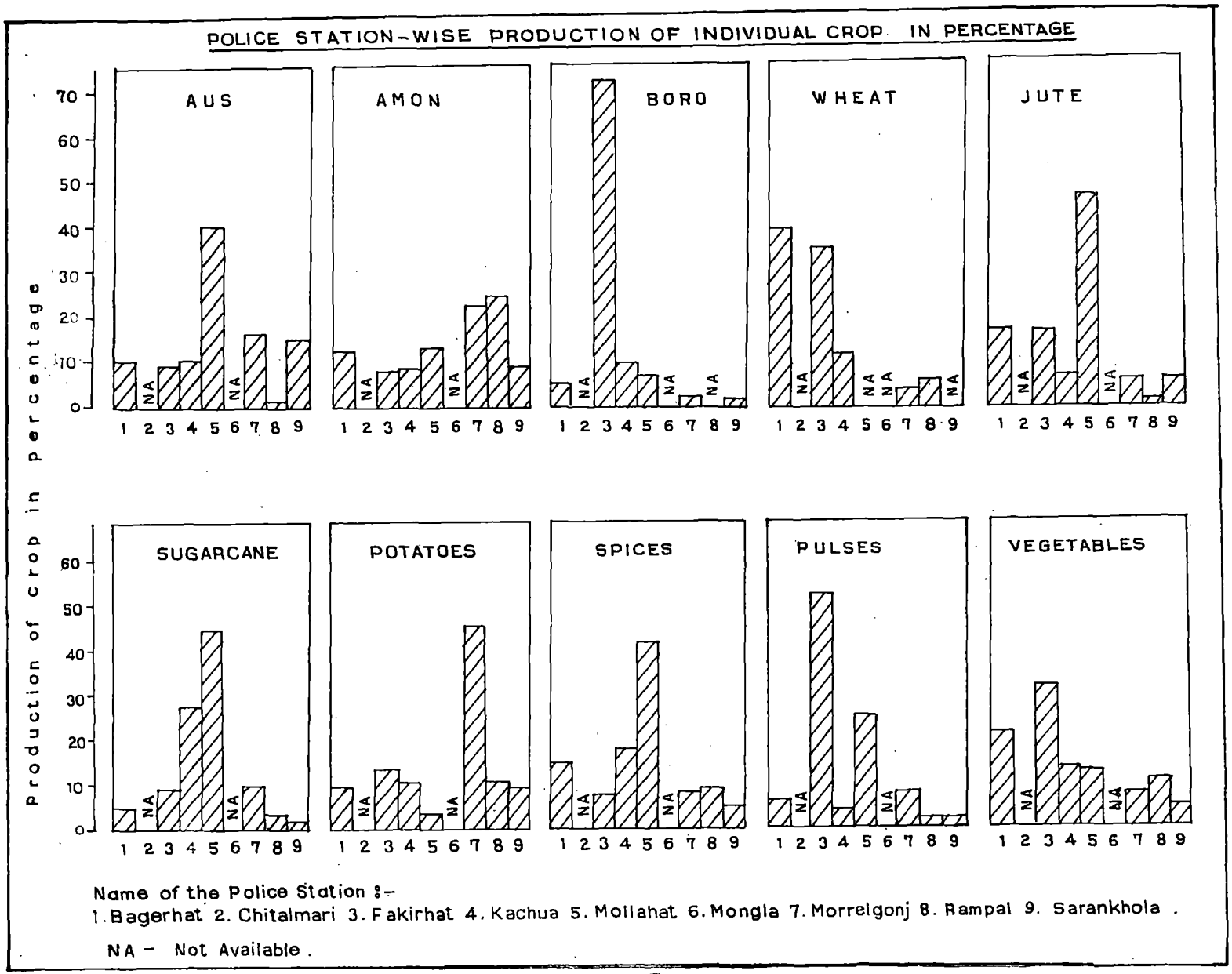

POLICE STATION-WISE PRODUCTION OF INDIVIDUAL CROP IN PERCENTAGE
AUS
AMON
BORO
WHEAT
JUTE
SUGARCANE
POTATOES
SPICES
PULSES
VEGETABLES
Production of crop in percentage
NA
1 2 3 4 5 6 7 8 9
Name of the Police Station :-
1. Bagerhat 2. Chitalmari 3. Fakirhat 4. Kachua 5. Mollahat 6. Mongla 7. Morrelgonj 8. Rampal 9. Sarankhola .
NA - Not Available .

Fig- 2.5

adversely in the economic life of people in the area, yet farmer produce paddy, it can be stored easily by the individual method. Besides, there is always ready for sale in local markets for surplus production of the individual farmer.(Gupta, 92). As a results, the farmers produce the *amon* paddy in summer season.

2.6 IRRIGATION AND ITS USED DIFFERENT METHODS.

Irrigaiton is one of the most important achieving of high productivity. Irrigation helps not only in increasing the productivity but also ensures amount of crop production as well as introuducing multiple croping. Though the study area is located on heavy rainfall and tidal zone, but concentration of rainfall occurs in summer months only. Rest of the year has very low rainfall. Here, the sources of irrigation water are rivers, ponds, tanks and others. The main method of irrigation in the northern part of the district is ordinarily lift irrigation from tank or rivers As irrigation facilities are poor, so the people mainly depend on rain. The police stations of the southern part of the district are intersected by innumerable creaks and channels. So irrigational water is aboundant. The district has 1286 tube wells and 13,567 ponds.(B.B. S. 1995). Most of the agricultural lands are irrigated by tidal water. The percentages of irrigated area in different police stations are shown in table 2.9.

2.9 Table : Percentage of irrigated area of different Police Stations

Name of P.S.	Total cultivated area	Total irrigated area	Percentage
Bagerhat	18741	309	1.6
Chitalmari	8609	589	6.8
Fakirhat	13273	378	2.9
Kachua	846	222	2.6
Mollahat	17956	556	3.1
Mongla	14057	162	1.2
Morrelgonj	29646	1205	4.1
Rampal	22157	140	0.6
Sarankhola	8366	313	3.7
Total	**133652**	**3876**	**2.9**

Source : District Agriculture Office, Bagerhat, 1995.

From table 2.9, it is found that the irrigated area of the district covers 3878 ha. which is only 2.8 percent of the total sown area. This consists of 2.5 percent of farm

holdings. Among nine police stations, the highest irrigated area is shared by Chitalmari (6.8) Police station and the lowest is shared by Rampal (0.6%) Police station. The area under irrigation has been increased significantly during the last decade. But still it is inadequate to total requirements for the district. Appendix table - 6.1, presents the distribution of irrigated area under various means of irrigation farms. It is found that 3.2 percent of farm area under irrigation, which is about 1016 ha in the small size. Remaining medium size & large size, farms of irrigated area are covered by 3.0% & 2.0% to the total area.

2.7 CROPS ASSOCIATION & COMBINATIONS

Identification of crop combination regions is a significant aspect of Agriculture Geography. It provides a good basis of regional planning. The different methods may be applied in the delineation of crop combination regions. To identify the dominant crops, the prevalent statistical methods have been used (Weaver 1954, Dois - 1956, Rafulla - 1957). Weaver method have been applied in the region. By applying the Weaver's method six crop combination regions are identified in the district. The police stations in different combinations are given in table - 2.10.

Table 2.10 Crop combination of nine Police Stations

Name of P.S.	1st rank	2nd rank	3rd rank	4th rank
Bagerhat	132.25(C)	1372.00(S)	1594.83(P)	1753.00 (V)
Chitalmari	432.64(C)	1010.29(CS)	1299.94(P)	3428.84(O)
Fakirhat	278.89(C)	1153.25(O)	1338.58(V)	1457.57(P)
Kachua	400.00(C)	1052.99(V)	1239.20(P)	1396.12(CS)
Mollahat	595.00(C)	884.55(P)	1042.38(O)	1205.48(CS)
Mongla	14.44(C)	1989.40(S)	1999.50(CS)	2190.60(V)
Morrelgonj	114.49(C)	1398.30(CS)	1632.88(S)	1780.25(V)
Rampal	1764.00(C)	1676.30(CS)	1968.39(S)	2172.02(V)
Sarankhola	64.00(C)	1511.60(S)	1771.00(P)	1967.78(V)

C - Cereals, P - Pulses, S - Spices, V - Vegetables, O - Oil seed.

It is observed from table - 2.10 that most of the police stations are mono cropped, growing *amon* rice, Pulses is the 2nd ranking crops in the district. And vegetables are the 3rd ranking crops in the study area. It is clearly seen that large scale production of

rice is common in the area. Because most of the crops grown in the area are food crops which are consumed by the producers.(Husain,72)

2.8 YIELD RATE OF PRINCIPAL CROPS

It is visualised form the study that the productions of different crops depend on intensity of rainfall, natural calamities and price of crops. Sometimes price of crops influences the area of cultivations. The agricultural inputs used by farmers is low due to poor economic conditions and lack of supply in time. The yield rate of crops are shown in table 2.11.

2.11 : Yeild rate of crops in 1990 in Quintal / ha.

Name of P.S.	Aus	Amon	Boro	Wheat	Jute	Sugar cane	Potato	Pulses	Spices	Veg.
Bagerhat	11.0	10.5	0.3	16.9	2.3	393.8	83.35	6.78	14.72	75.6
Chitalmari	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Fakirhat	10.1	13.0	69.4	18.7	2.2	562.5	84.9	4.9	15.2	82.9
Kachua	12.6	14.5	0.7	16.9	2.8	562.5	100.5	6.2	18.0	66.2
Mollahat	10.7	12.4	0.6	na	2.8	586.0	79.8	5.6	18.3	62.4
Mongla	na	na	na	na	na	na	na	na	na	na
Morrelgonj	18.1	13.2	0.9	14.9	2.6	445.3	91.1	6.5	4.6	58.9
Rampal	12.6	13.4	0.2	16.9	2.9	525.4	99.4	5.6	9.7	80.3
Sarankhola	16.4	12.7	1.1	na	2.0	421.9	75.5	6.1	9.8	50.7

The yield rates of different crops reveal that the local varieties of all types of paddy have low yield rate compared to the high yielding varieties in each police station. In the district, the yield rate per-ha of sugarcane is higher and yield rate of pulses is lower comparing the yield rate of other crops in the district, It is observed that the yield rates of high yielding variety of crops is higher except local varieties of *boro* paddy. *Boro* paddy has high production in Fakirhat (69%) police station compare to other police stations of the district. It is partly due to high fertility of soils and better irrigation system in this police station. In the second position, there are five police stations. The yield rate of local variety of *amon* paddy is high in Kachua Police Station and second position is occupied by Rampal Police Station. The average yield rate of *amon* in other five police stations is almost uniform. Another important crop is aus paddy. Sarankhola police

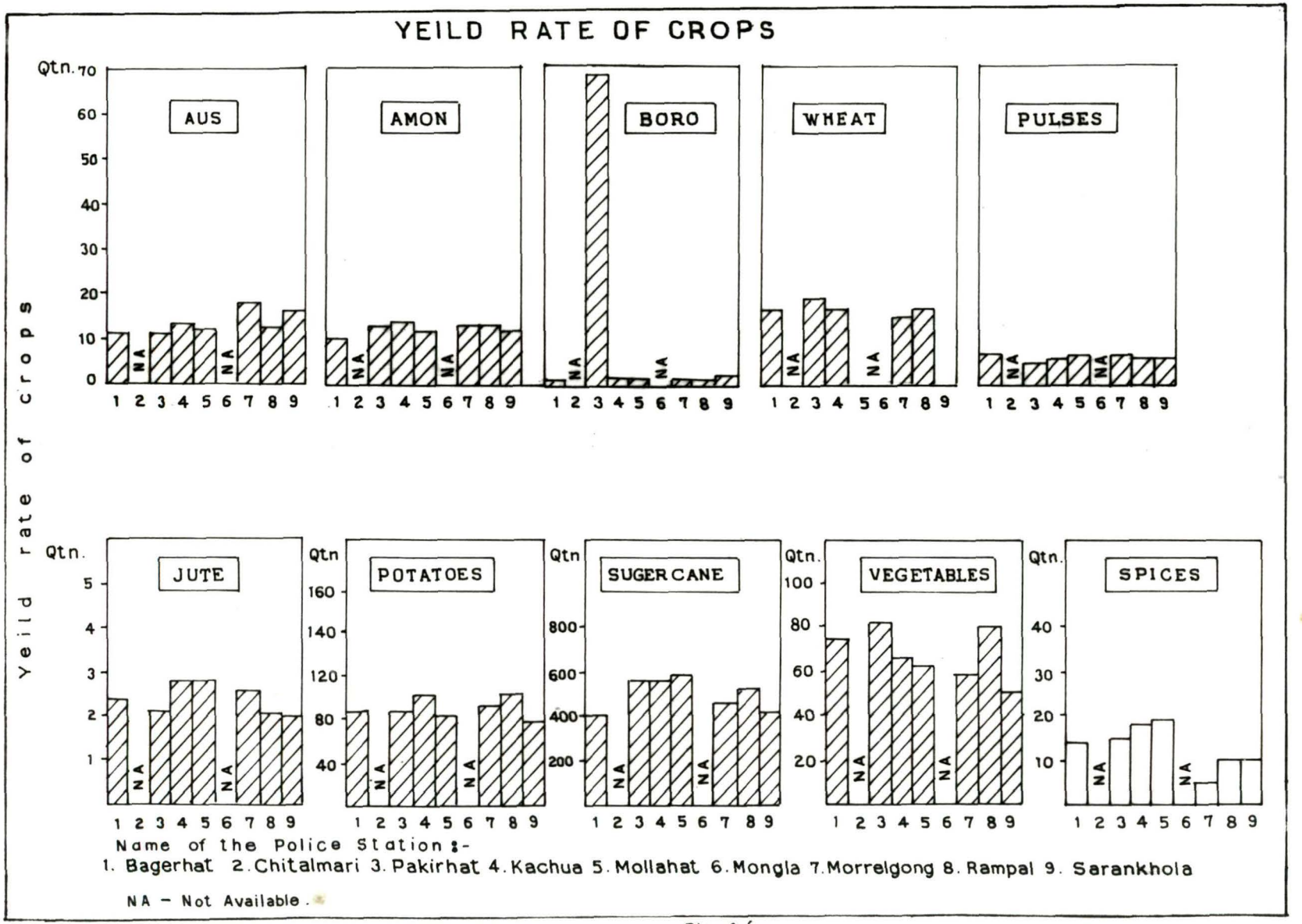

YEILD RATE OF CROPS
Yeild rate of crops
Qtn.
AUS
AMON
BORO
WHEAT
PULSES
JUTE
POTATOES
SUGERCANE
VEGETABLES
SPICES
NA
1 2 3 4 5 6 7 8 9
Name of the Police Station :-
1. Bagerhat 2. Chitalmari 3. Pakirhat 4. Kachua 5. Mollahat 6. Mongla 7. Morrelgong 8. Rampal 9. Sarankhola
NA - Not Available.

Fig-2.6

station occupies the first in *aus* production. Next position comes to Morrelgonj police station. The production of wheat, potatoes, pulses, spices, & vegetables are much low, (table 2.11 and figure 2.6). Sarankhola & Mongla police stations do not produce wheat.

2.9 MAJOR PROBLEMS OF AGRICULTURE

It has been found that there are many problems in agricultural production which are described as follows :

(1) Defective land holdings : The production of the crops is not optimum due to defective landuse systems in the region. The land is extremely fragmented by the law of inheritance, most of which are uneconomical holdings where some agricultural lands are wasted in the demarcation of individual plots. Moreover, most of the families are very poor and economically handicapped for good investment. These fragmentated plots are scattered in different parts within or outside the village causing waste of time and energy.

(2) Indegineous methods of cultivation and Implements: The traditional methods of cultivation are still predominent in the district (due to various constrains those stood in the way of implementation of advanced methods in agriculture). Primitive agricultural implements are used by the cultivations and as a result, the production is low (Jana, 1972). Ignorance in modern technology and poor economic conditions of the farmers are also found which hinders the implementations of modern technology in agriculture. The farmers do not get fertilizers and pesticides, according to their need. So they cannot used advance technology for high production.

(3) Land Tenure System : More than 47% of the total population of the district are agricultural labour and 48% of the total land owners have inadequate lands for their family. So the percentage of small and marginal land owners are high in this district.

(4) Uncertainty rainfall : Farmers in the district depend very much on the monsoon which is primary source of water for the cultivation of crops specially amon paddy. But 'Monsoon' sometimes uncertainly and afffected the agricultural operations. On the contrary, the agriculture operation are also affected by heavy and concentrated rains which create stagnation of water in the fields and creat floods.

(5) Natural Calamities : The agricultural operations are also affected by natural calamities. Various types of natural calamities are common in the district. Some of these are very devastating in nature. Sometimes a huge amount of crops, animals folks and human lives have been lost in natural calamites like cyclone, local severe storm, drought etc.

(6) Frequency of Floods : The district is one of the flood-prone areas in the country and flood occurs in almost every year. The cyclones & depressions affect these coastal areas in the district in every year. The frequency of floods varies from 3 to 4 times in the year and sometimes these are devastating in nature. The floods upset the economy of the region in general and inhabitants in particular by damaging crops, huge animals and other moveable properties. One such flood is occured in the year 1969. Sometimes cultivation of crops is delayed and the production is declined.

(7) Scarcity of Livestocks : The cattle is the only livestocks which help the cultivators in the field. They are used for ploughing the land and sometimes for carrying the products from fileld to home or market. They also drive carts for transporting commodities from one place to other. They also supply the most valuable organic manures to enrich the soil fertility and fuel for domestic use. Generally, the demand of livestocks is very high at the times of planting and harvesting seasons. Sometimes it happend that the cultivation of crops is delayed due to lack of ploughing. The area was famous for milk, butter and other milk products in the past due to high concentration of livestocks and abundant grazing land in *char* areas. But now the number of cattles are very few and the grazing lands were transferred to agricultural lands due to high pressure of population on land. As a result, the district now suffers from shortage of livestock and milk products.

(8) Lack of irrigation facilities : Total agricultural land is very limited, these are not fully utilised and the production of crops is not optimum due to poor irrigation system in the district. Only 25% of the total cultivated land are under different types of irrigation. Most of the land irrigated from *Khals,* ponds, tanks which are dried up in dry season.

(9) Lack of Power Supply : Electricity is widely used in agriculture in developed and developing countries in the world, for its easy availability and low cost. Many modern agricultural implements are easily operated with electricity or other energy. So power is

most essential for high production of crops. From the field study, it is observed that the electricity is available in a very few villages in the study areas.

(10) Lack of marketing storing facilites : Good and quick transportation of agricultural commodities to the markets are essential for sustained return of high prices. But the communication system in the district is poorly developed as already envisaged and the cultivators are forced to sale their products to traders at a low price. Moreover, the periodicity of local market is low and they only fulfill the local demand partly (Jana78). So, the farmer store their produce in their house where huge amount of produce got damaged due to perishable nature of goods and ensure low return to farmers. In interrior areas there is no godown for storing of crops. So, the farmer store their crops on their own process and on own risk.

(11) Lack of training Centre : In the study area, there is no training or educational centre for the farmers for proper guidance in agricultural development. So, the farmers are not aware about the modern methods of production of high yielding of crops. The farmers do not use modern instruments, due to small size of plots and low economic conditions.

CONCLUSION

From the analysis it can be concluded that the level of agricultural development in the district is dependent on monsoon rainfall. It may be mentioned that *amon* is the main crop. Moreover, earlier harvest of *amon* paddy by mid November would enhance the prospect of second crop like pulses, oilseed and vegatables. The residual mositure of the season can be utilised largely for the cultivation of *rabi* crops in the district.

It has been found also that about 81% of the total area is under cultivation. Remaining 19% of the total area under not available for cultivation. The percentage of irrigation area is higher in Chitalmari police station among the nine police stations of the district. Current fallow land is low in all the police stations.Only two police stations (Mongla and Sarankhola) are under forests sharing high percentages. In the district, only 2.8% area have irrigation facility. But the percentage of irrigation area to total is very low. The percentages of cultural waste (Marsh) are high in two police stations (Fakirhat & Mollahat). So it is not possible to increase the area under cultivation by transferring the cultural waste into an agricultural land. The percentage of area under

not available for cultivation is high for the high density of settlements and riverine tracts. These occupy a significant area in each police station. It is also observed that the sizes of farm holdings are mostly small and they share a large number in the district.

The district produces a variety of crops as jute, vegetables, wheat etc. but the most important one is paddy. The district is dominated by monocrop (85%).The yield rates of crops are very low due to lack of irrigation facility, high fragmentation of holdings and low imputs used. The method of cultivation is traditional & primitive. So, it is urgently necessary to improve the agricultural production by implementing modern methods of cultivation, maximising the use of inputs and introducing high yielding varieties of seeds. Thus, the district may be self sufficient in agricultural production in future. It is also necessary to increase irrigation facilities for multiple cropping. Suitable crops rotation ensures higher production and income from agriculture. In this way, the economic conditions of the people living in the rural areas can be improved to some extent.

CHAPTER - THREE

POPULATION & THEIR CHARACTERISTICS

INTRODUCTION

Population studies have been measured by the rate & trends of various population characteristics, such as, distribution, growth density, composition etc. It is a practical value in measuring population growth enable to plan for satisfying man's need through-out life like food, clothing, shelter and any other necessity. The growth of market centres and population growth is intimately related and homologous in nature. Any comprehensive geographical analysis of a region should take into account the differential growth of population. According to the Trewartha, number, density, distributions, and activities of the population provide the essential background for all geography (Trewartha-1992). Population is the central element around which all other elements revolve. Thus, the study of population is the most important approach to geography and one in which the regional concept has its broadest application (Ghosh - 1985).

This chapter discusses the population characteristics of the district and also population character of market centres in different police stations. Now, this, chapter has been divided into eight parts, in the Ist part, the general distribution of population of the district has been analysed. Second & third parts of the chapter are engaged to discuss the density and growth of population (it shows different tables & diagrams). Sex ratio, literacy, family size and occupational pattern have been discussed continually. Lastly, the occupational structure has been analysed for different police stations of the study area.

3.1 GENERAL DISTRIBUTION OF POPULATION

People have their individual as well as group perceptions and manners which influence on their distribution and activities. Depending upon the nature of livelihood people are spaced variously over the earth's surface. This spacing refers to the distribution of population. It has been observed that the distribution of population on the earth surface was by no means uniform in the beginning nor it is so at present condition. In recent years studies on distribution of population hold a great significance in the

midst of population geographers. Population distribution may acts as a key to the analysis of entire demographic character in an area. An analysis of various ratios or proportions of population (e.g. density percentage of population to the total etc.) and the area (e.g. percentage of the area to the total, etc. occupied by a certain group) may highlight the stage of population growth or even the nature of demographic explosion in a certain region or an area.

The interpretation of population distribution in terms of area and population quality etc. gives an idea about the pattern of people's regional contrast and disparities inclluding the degree on concentration in different areas. It has been estimated that about 80 percent of world's total population is concentrated only over 20 percent of world's total land area. Thus, not only the social and economic systems but also the behaviour system are, to a certain extent found to be the product of the pattern of distribution of various components of both static and dynamic nature.

The Bagerhat district is a micro unit characterised by its distinctive physio-socio-economic pattern and process. The distribution of population in the region is overwhelmingly a rural one. The region consists at present of nine police stations with different socio-economic groups of more or less similar cultural habits.

According to the population census, 1991, the total number of households was 210,785 which was 1.4% of total households in the country. The total population of the district, according to the same source, was 1,431,332 which was about 1.4% of total population of the country. The density of population per km^2 is 362 as against the national figure of 605 per km^2. Out of sixty four districts in the country Bagerhat ranks 33rd in respect of population. Males share 51.1% and females share 48.99% of the total population. Out of the total population, 94.7% population are living in non-municipal (rural) area and the rest 5.3% in minicipal(urban) areas.

Among nine police stations, Kachua had the lowest population of about 93,249 persons. The lowest density of population per km^2 is 94 in Mongla as against the district figure of 362 per km^2. On the other hand Bagerhat has the highest density of 865 persons per km^2. The district Headquarters which is also a municipal area of Bagerhat has about 44,501 persons.

According to 1991 Census, Bagerhat is the second largest police station in Bagerhat

district in respect of population. It was recognised as a police station in 1872. This police station occupies an area of 272.73 km². This P.S. consists of one municipality, 9 unions, 145 mauzas, 22 mahallahs and 167 villages. The average population of an union, a mauza, and a village are 26,205, 1627 and 1412 respectively. This Police Station has a population of 235,848 of which 120,805 are male and 115,043 are females. The original inhabitants of this P.S. might be an admixture of the non-Aryan, the Dravidian and the Mongolian races. This P.S. holds 69 percent of total mauza in the size class 0 - 200 ha. and lowest percentage of size class of 801 - 1000 ha of which 0.70 percent. The distribution of population and area by size class is shown in the table 3.1 & Fig. 3.1.

Table 3.1 percentage of area by the size class of mauza in different police stations.

Class-size (hector)	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
0 - 200	69.0	59.0	53.8	77.0	52.6	12.4	47.8	53.0	-	56.4
201 - 400	22.2	14.0	30.0	10.8	21.8	34.5	22.5	34.0	-	23.4
401 - 600	5.4	14.0	9.0	9.4	9.0	21.7	4.9	6.2	-	7.8
601 - 800	2.7	05.0	5.6	1.4	5.6	6.4	7.4	3.8	-	4.3
801 - 1000	0.7	-	1.6	-	1.8	6.4	5.7	1.5	27.4	2.4
1001 - 1200	-	-	-	1.4	7.4	9.3	7.5	-	9.0	2.6
1200 above	-	08.0	-	-	1.8	9.3	4.2	1.5	63.6	3.1
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

From the table 3.1 that the highest percentage of mauza in the district in size-class isbelow ha and lowest percentage in size-class is 1200 ha and above. Most of the mauzas are found in the lower range. It is also found that highest percentage of mauza in this class is in Kachua Police Station, and that of lowest percentage is in Bagerhat Police Station. It is noteworthy that very few number of mauzas are found in the high range of area (Fig - 3.2).

Chitalmari is the most recent Police Station of the district recognised in 1987 and has a total area of 192.00 km.² The Police Station is located at the north eastern side of the district. It consists of 7 unions, 58 mauzas and 121 villages. The average population of each union, mauza and village are 18,218, 2199 and 1,054 respectively. The Police Station has a population of 127524. Of which 64,757 are males and 62,767 are females, similar to other police of stations of the district, the inhabitants of this police station might be an admixture of the non-Aryan, the Dravidian and the Mongolian race. The highest percentage of mauzas (59%) by area are found in 0-200 ha in size-class. The

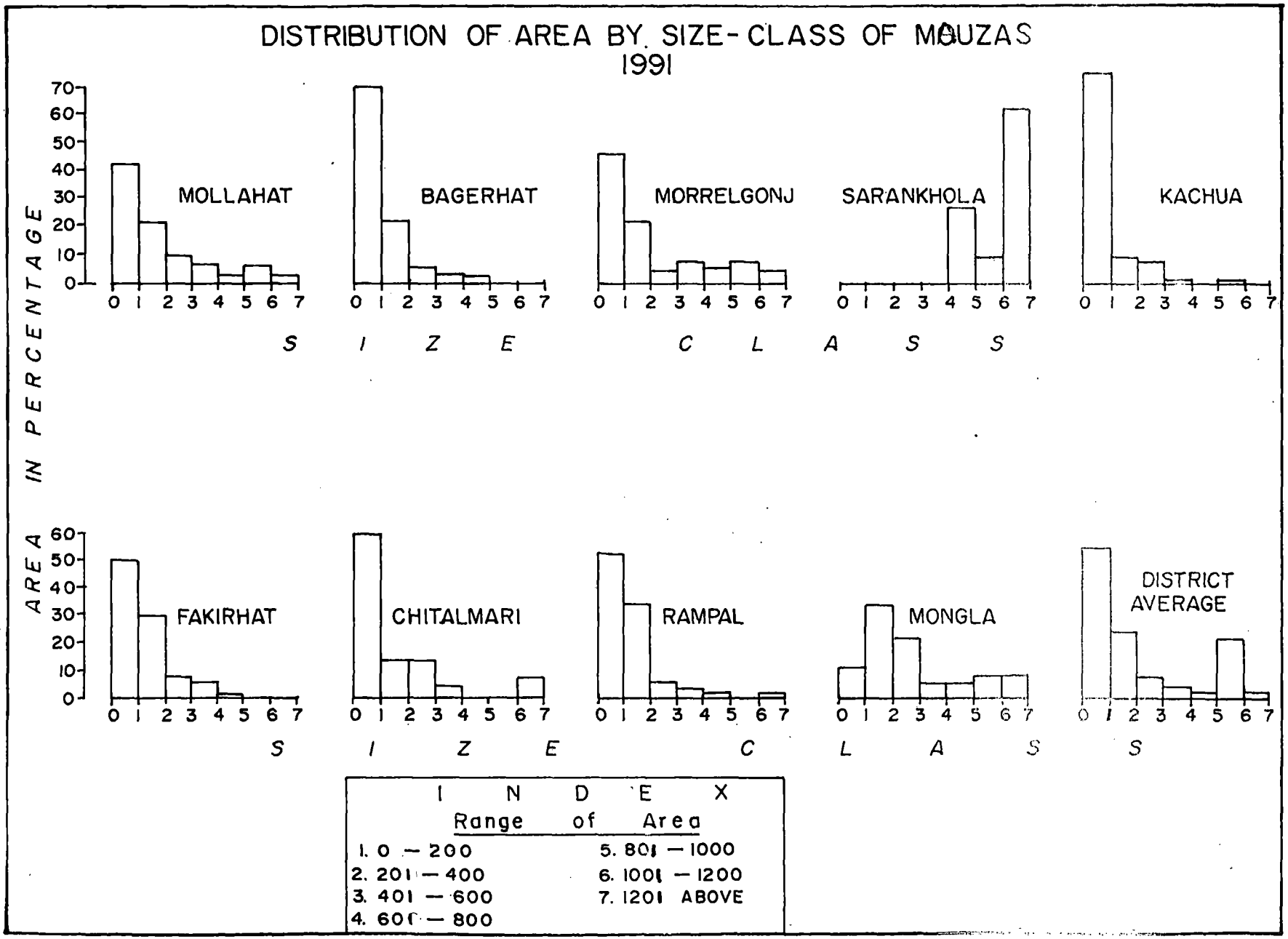

DISTRIBUTION OF AREA BY SIZE-CLASS OF MOUZAS
1991
AREA IN PERCENTAGE
MOLLAHAT
BAGERHAT
MORRELGONJ
SARANKHOLA
KACHUA
FAKIRHAT
CHITALMARI
RAMPAL
MONGLA
DISTRICT AVERAGE
SIZE CLASS
INDEX
Range of Area
1. 0 — 200
2. 201 — 400
3. 401 — 600
4. 601 — 800
5. 801 — 1000
6. 1001 — 1200
7. 1201 ABOVE

Fig. 3·1

lowest percentage is 5.0 in the size class 6.01 to 800 (Fig - 3.1)

Fakirhat P.S. has a population of 123,956. Of which 63,367 are males and 60,589 are females. Sex-ratio of this P.S. is 105 males per 100 females. It is the second smallest Police Station in respect of area. Fakirhat Police Station recognised in the 7th June 1869. It occupies an area of 160.68 km^2. The police station consists of 8 union, 67 mauzas and 87 villages. The average population of each union, mauza and village are 15,495, 1,850 and 1,425 respectively. The Headquarters of Fakirhat Police Station is situated at Attaki mauza which is the highest density of population per km^2 (1747 person) among the mauzas. The highest percentage of mauzas in the size class 0 - 200 is 53.8 and lowest is 1.6 percent, (Table - 3.1).

Kachua is the smallest Police Station of the district in respect of both area and population. It recognised as a police station in 1885. This Police Station is located in the eastern side of the district. This police station consists of 7 unions, 78 mauzas and 96 villages. The population of each union, mauza & village are 13,321 , 1,196 & 971 respectively. The police station occupies a total area of 161.62 km^2 and has 93,249 population. Of which 46,959 are males and 46.290 are females. Sex ratio is 100 females 101 males. The highest percentage of mauzas in the size-class is 0 - 200ha and lowest is in 1001 - 1200. Mollahat is the norther police station of the district. It was recognised as a police station in 1867. The police stations consists of 7 unions. 58 mauzas and 102 villages. The average population of each union, mauza and village are 16,676, 2,013 and 1,144 respectively. The total population of the police station is 116,729. Of which 58,974 are males and 57,755 are females. This police stations having 42 percent of total mauzas is in the size class 0 - 200 and lowest percentage (1.8) is in the size-class of 1200ha and above. The only high density of populated area is found in the headquarters in Garfa mauza.

Mongla is the biggest police station of the the district in respect of area (including forest). The Police Station was recognised in 19th September 1976. It occupies an area of 1,461.22 km^2. Of which 1,274.33 km^2 are forest area. This police station consists of one municapality, 6 unions. 28 mauzas, 8 mahallahs & 76 villages. This population of each mauza & village. are 22,759 and 1,797 respectively. The total population of the district is 137,947. Of which 75,496 are males and 62,451 are females. Mongla the 2nd sea port of Bangladesh is situated in this police station and it is located in the frings of

the Bay of Bengal and coast of the Sipsha river This Police Station occupies 26.3 percent villages in the size class of 501 - 100 ha and 34.5 percent mauza in the size class of 201 - 400 ha. The distribution of villages by size-class of population is shown in table 3.2 & Fig 3.2.

Table 3.2 percentage of villages by size class of population

Class-size (Population)	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
0 - 500	4.5	28.3	24.4	33.0	30.8	28.9	38.4	20.2	20.2	25.3
501 - 1000	11.3	42.7	22.8	30.5	27.5	26.3	25.9	27.6	21.2	26.2
1001 - 1500	27.2	12.5	13.7	16.5	15.4	21.3	14.8	21.2	17.9	17.8
15001 - 2000	4.5	5.2	13.7	9.3	10.1	9.2	5.7	15.4	14.1	9.8
2001 - 2500	18.5	7.2	10.3	3.3	7.3	5.2	4.8	6.9	8.2	7.9
2501 - 3000	6.8	3.1	5.7	3.3	21.2	5.2	2.8	2.3	5.9	4.2
3000 above	27.2	1.0	9.4	4.1	6.7	3.9	7.6	6.4	12.5	8.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

It can be revealed from table 3.2 that the highest percentage (26.2) of village in the size-class is in 501 to 1000 ha and lowest prcentage (4.2) is in 2501 to 3000 ha. It is also found that the second highest percentage is 25.3. Majority of villages are exhbit in the low ranges. It is noticed that among nine police stations, the highest percentage (42.7) of villages is in Chitalmari and lowest percentage (2.3) is in Rampal Police Station. (Fig 3.2).

Morrelgonj Police Station is the densely populated area of Bagerhat district. It was recognised as a police station in 1849. This police station located on the bank of the Pangchi river which is a branch of the Horingata river. This police station occupies an area of 460.91 km^2 and has 3,21,153 population. The police station consists of 16 unions, 121 mauzas and 184 villages. The average population of each union, mauza and village are. 20,072, 32,654 and 1,745 respectively. The distribution of mazuas by size-class of the area is shown in table 3 :1. The highest percentage (47.9) of mauzas is found in the size class of 0 - 200 ha and the lowest (4.1 percent) in size-class is in 1200 and above. Rampal became as police station in 1892. It consists of 11 unions, 139 mauzas and 149 villages. The average population of each union, mauza and village are 15,188, 1,202 and 1,121 respectively. Distribution of village by size classes of population is highest (27.6 percent) and lowest (2.6 percent) in this police station.

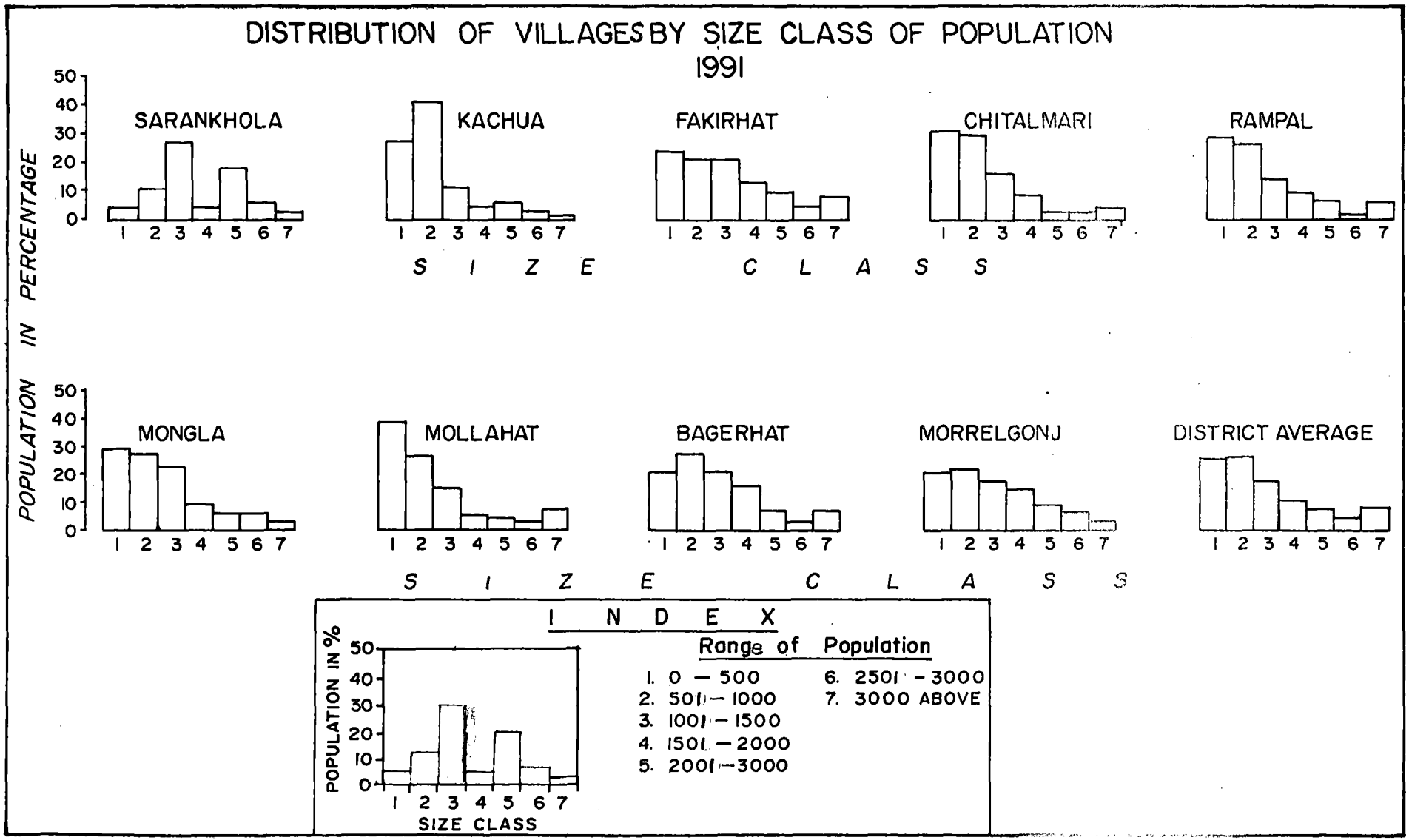

DISTRIBUTION OF VILLAGES BY SIZE CLASS OF POPULATION
1991
POPULATION IN PERCENTAGE
SARANKHOLA
KACHUA
FAKIRHAT
CHITALMARI
RAMPAL
MONGLA
MOLLAHAT
BAGERHAT
MORRELGONJ
DISTRICT AVERAGE
0
10
20
30
40
50
1 2 3 4 5 6 7
S I Z E C L A S S S
INDEX
POPULATION IN %
SIZE CLASS
Range of Population
1. 0 — 500
2. 501 — 1000
3. 1001 — 1500
4. 1501 — 2000
5. 2001 — 3000
6. 2501 — 3000
7. 3000 ABOVE

Fig. 3·2.

Sarankhola recognised as a police station in 1907. The police station occupies a total area of 162.03 km² excluding forest area. It consists only of 4 Unions 11 mauzas and 45 villages. The average population of each Union, mauza and village are 26,964, 9,805 and 2397 respectively. The distribution of mauza by size-class of area (1200>ha) is highest (63.6) and lowest (1.8 percent). (Table - 3.1).

It is observed that the distribution of population of Bagerhat district is almost uniform Lorenze curves (Fig. 3.3) has been drawn with the help of cumulative percentages of area and population of mauza in different Police Stations (Appendix - 1) of showing the degree of concentration. According to Berry (1972) the degree of concentration of population in an area can be computed with the following formula.

$$\text{Degree of concentration} = \frac{\text{Area covered by the curve}}{\text{Area covered by the lines of } 45^0}$$

From diagram (Fig - 3.3) the degree of concentration of population is 83.92 for the district. The density of population per km² of the district in the mauza is low. So, the diagram shows a rural character of the area.

3.2 DENSITY OF POPULATION

The density of population is concerned with the analysed of some kinds of manland ratio. It has always a historical perspective and depends partly on topographic condition and partly on economic resources and the stages of their growth. Density measures the degree of concentration of population in an area. Different types of density are having a varying degree of utility at different situations.

According to 1991 census, the density of population in the Bagerhat district was 362 persons per km² compared to the national average of 605 persons per km². The types of density is called the arithmatic density. Of course, density cannot reveals actual measurement of population pressure on land. It simply gives a quantitative relation between man and land. Physiological density means the number of population per unite area of cultivated land. This types of density acts as a better measurement of population, when the pressure on land is considered. The agriculture density of population indicates the pressure of population engaged in agriculture land. It is an index of number of agricultural population engaged in an unit area of cultivated land. The area of the

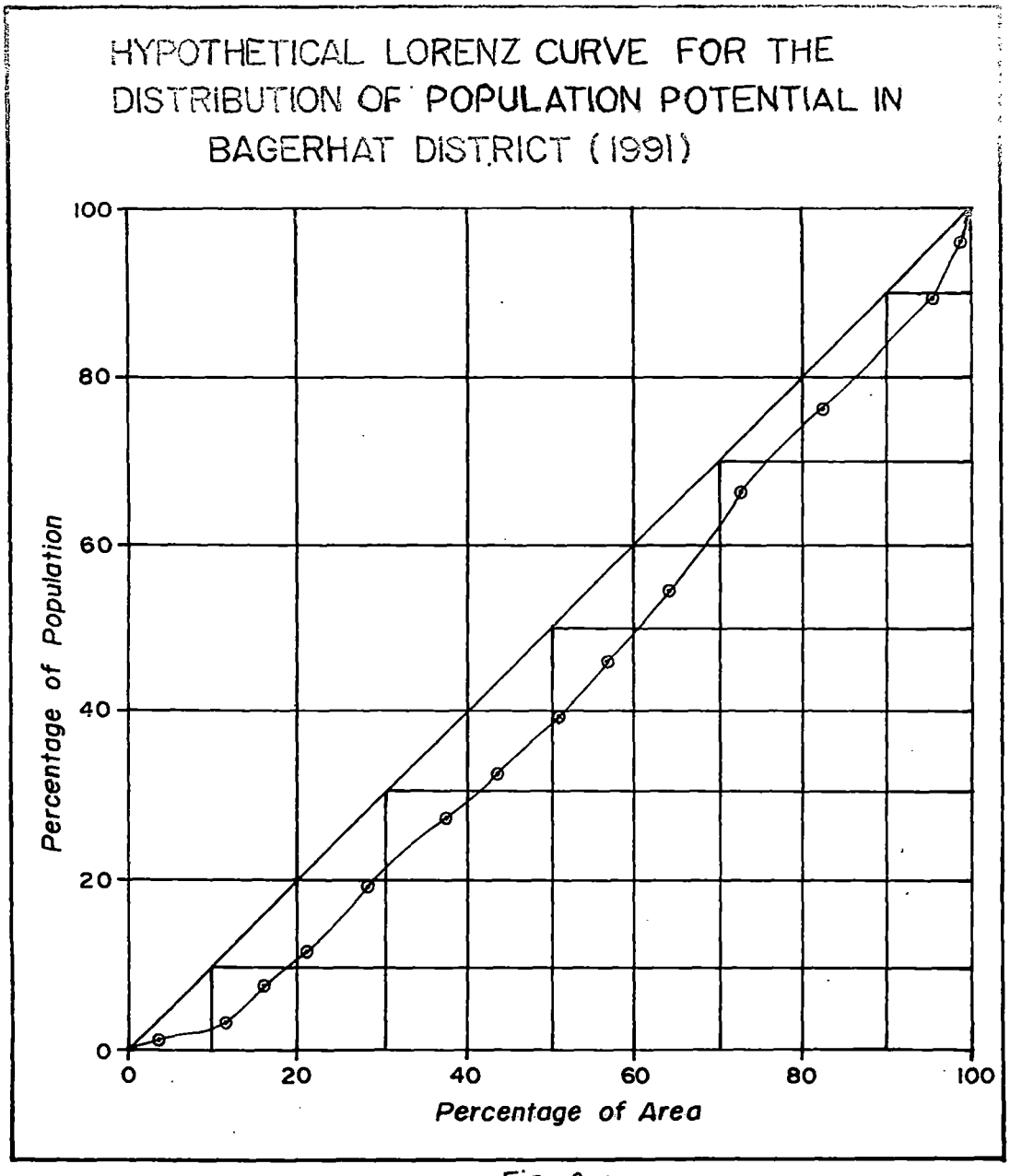

HYPOTHETICAL LORENZ CURVE FOR THE DISTRIBUTION OF POPULATION POTENTIAL IN BAGERHAT DISTRICT (1991)
Percentage of Population
Percentage of Area
0
20
40
60
80
100

Fig. 3·3

district is 2.7 percent (including river) compare to the total area of the country. The density of different police stations has been varied from police station to police station. The population distribution pattern of the district in nine police stations has been discussed below.

Bagerhat Police Station has a moderate density (865 km^2) of population. High density of road network, in this police station has caused a high pressure of population on the agricultural land scape. It is the Headquarters of police station and has so many number of institutions like. school, college, vocational institutions and important district level offices. The distributions of mauza by size class of population shown in table 3.4. The highest percentage is 54.5 (% to total P.S.) in Sarankhola Police Station. Majority of densely mauza are in 601 - 900 range of Rampal has the highest number of mauza (149) and Bagerhat Police Station is the second highest number of mauzas (Table 3.3). Most of the people practised agriculture during the rainy and winter seasons. So the people concentrate in the fertile zones. The highest number of mauzas (41) are in 301 - 600 size-class. The density is 644 km^2 and the growth rate is 1.77% in Bagerhat Police Station.

Fakirhat Police Station located in the north-western part of the district, near the divisional town of Khulna is moderate densly area.(177/km^2). This police station is developed in respect of communications, such as Dhaka capital city road and Bagerhat Khulna divisional connecting road & railways. This road has also an important impact in carrying passerners, goods and others commodities. For these reasons high population density in the marshy land areas is observed There are 26 mauzas having moderate density in size class i.e. 601 - 900 persons is observed. The population density of Kachua Police Station is 708/km^2. It is the smallest police station of the district in respect of area and population Mollahat & Mongla Police Station are far from the district headquarters and their density are 621 & 121/km^2 respectively. Sarankhola, Morrelgonj & Rampal Police Stations are backward and rural. Their density of population are 143,697 and 463 per km^2 respectively. The number of mouzas with of population, has been shown in table3.3.

Table 3.3 Distribution of mauzas in different population sizes

Name of the P.S.	Total Area in km²	Total Population	Total inhabited mauza	Numner of the Mauza with Population					
				< 300	301 - 600	601 - 900	901 - 1200	1201 - 1500	1500 above
Bagerhat	272.73	235848	145	11	41	38	18	17	20
Chitalmari	292.00	127524	51	3	9	23	2	4	10
Fakirhat	160.68	123956	67	3	12	26	11	5	10
Kachua	161.62	93249	74	7	17	25	12	6	7
Mollahat	187.88	116729	55	8	13	15	9	6	4
Mongla	186.89	137947	28	2	14	11	1	0	0
Morrelgonj	460.91	321153	121	6	30	51	23	6	5
Rampal	335.46	167070	149	34	55	25	24	5	6
Sarankhola	162.03	107856	11	0	4	6	0	0	1
District Total	**20289.20**	**431332**	**701**	**74**	**195**	**220**	**100**	**49**	**63**

It can be revealed from table 3.3 that most of the mauza are in size-classes of 301 - 600 and 601 - 900. The lowest number of mauza have been in size-class of 1201-1500. The density of mauza population have concentrated only two ranges. The percentage of mauza of each police station of different size-class have been shown the table No. 3.4. The density of population per km² has been increased from 111 kim² in 1901 to 362km² in 1991. The south-western part of the district has low density. This area is inhabited by some fishermen and woodcutters (local name 'baoaly'). The people are living in the road-side and bank of the canal or river, because they use water from the canal. The trend of population density can be visualised from table 3.4 and Fig - 3.2. It indicates that the density of population is increasing towards north and north-western part and decreasing towards southern part of the district. The highest density of population is in Fakirhat police stations. It is due to availability of differernt types of facilities like communications, fresh-water, high yield of crops etc. The low density of population in the Southern Police Station Sarankhola, Mongla and Rampal is due to poor communication, salinity of water, lower rate of production and natural calamities. Analysing the demographic character of different police stations, their are 1364 & 2080 person live in per unite area of village & mauza of the district. The highest percentage of mauza is observed in size class 601 to 900. The percentage of mauza population are shown in the table 3.4.

Table 3.4. Percentage of mauza in population different sizes in the police stations.

(Percentage to total of each P.S.)

Class-size (Population)	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
below 300	7.6	5.9	4.5	9.5	14.6	7.2	4.9	22.8	-	10.7
301 - 600	28.3	17.7	17.9	22.9	23.6	50.0	24.8	36.9	36.3	25.7
601 - 900	26.3	45.0	38.8	33.8	27.2	39.2	42.2	16.8	54.6	32.4
901 - 1200	12.4	3.9	16.9	16.2	16.4	3.6	19.0	16.1	-	14.7
1201 - 1500	11.7	7.8	7.5	8.1	10.9	-	4.9	3.4	-	7.2
1500 above	13.7	19.7	14.9	9.5	7.3	-	4.2	4.0	9.1	9.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

It can be revealed from table 3.4 that the highest (32.4) and lowest percentage (7.2) in the district of the mauzas are in size-classes of 601-900 and 1201-1500 respectively The second highest percentage (25.7) of mauza is in the size-class of 301 to 600. It is noticed that Sarankhola police station has the highest percentage (54.6) of mauza in 601-900 size-class and Rampal police station has the lowest (3.4) percntage of mauza in size-class of 1500 and above among nine police stations of the district.

3.3 GROWTH OF POPULATION

The total population of Bagerhat district is 1,431,113 (1991). According to the 1951 census, population of the district was 659,889. At that time, there were seven police station in the district namely - Sarankhola, Kachua, Fakirhat, Rampal, Mollahat, Morrelgonj and Bagerhat. Due the high growth of population and administrative purposes, the Government has increased the number of police stations from seven to nine. New police stations like Chitalmari & Mongla were formed in 1985. The trend of growth was very slow in all the police stations during last two decades. The high growth (2.12%) was observed in Morrelgonj P.S. while the low growth (1.0%) was obseerved in Sarankhola P.S during 1951 - 91. This trend was noticed in Fakirhat (2.8%), Bagerhat (2.09%), Mongla (1.14%), Rampal (1.29), Kachua (1.34%) Mollahat (1.14%) and Chitalmari (1.19%) police stations in the district. The decadal growth of population in Sarankhola was very high and Rampal police station was very low during the period (Table 3.5). The population declined due to the cyclone →

→ & epidemic, during 1961 - 61 and serious widespred calamity affected the normal growth of population during this decade. But the population of the district had increased, as a

result of each successive Census. During pre-1951 period, there had been a much larger increase of population i.e. 14.3 percent is 1931 to 19.3 percent in 1941 Censuses. (Fig - 3.4).

Nature had interfered the growth of population during the decade 1941 - 1951 in more than one ways. First, in the World War II with the fall of Myanmar (Burma) in 1942 and Imphal erstwhile in 1943 hostilities came to the borders of Bangladesh (Former East Pakistan) and people were evacuated from many rural areas and small-pox took a huge toll of lives. The famine was preceded by cyclone. It caused a great havoc. People left their homes at that time. Families and children were died enormously. The sign of famine was visible in July 1942, and its affects in the form of epidemics were continued untill December 1944. Thirdly, the high prices of food-stuffs and consumer goods not only caused illnourishment, but also delayed in marriages and gave fewer births. Finally, a large movement of people occurred on a communal riot as a result of partition of India in 1947. Many Muslims from India were migrated to the district,. While many Hindus left for India. during the next decade. There had been a much larger increase of population. The decadal growth of population from 1951 - 1991 has been shown in table 3.5.

Table 3.5 Decadal growth of population (1951 - 1991)

		(Growth rates in percentage)				
Name of P.S.	Population in 1951	1951 - 61	1961 - 74*	1974 - 81	1981 - 91	Running mean
Bagerhat	235,848	18.0	31.6	08.1	13.3	17.7
Chitalmari	127,524	18.0	31.7	16.9	19.2	21.4
Fakirhat	123,956	18.0	36.3	10.1	23.0	16.6
Kachua	93,249	18.0	21.9	09.1	20.1	17.2
Mollahat	116,729	18.0	25.2	18.6	13.5	18.8
Mongla	137,947	18.0	28.8	03.3	41.6	22.9
Morrelgonj	321,153	18.0	31.6	17.0	18.0	21.1
Rampal	167,070	18.0	19.6	03.3	15.2	14.2
Sarankhola	107,856	34.3	36.3	34.3	16.3	30.2

* 1971 Census held in 1974, cause of independence war in Bangladesh.

The overall growth of population in Bagerhat district during 1951-61 was estimated at greater than the national growth. The decadal variations in the district were heterogeneous.

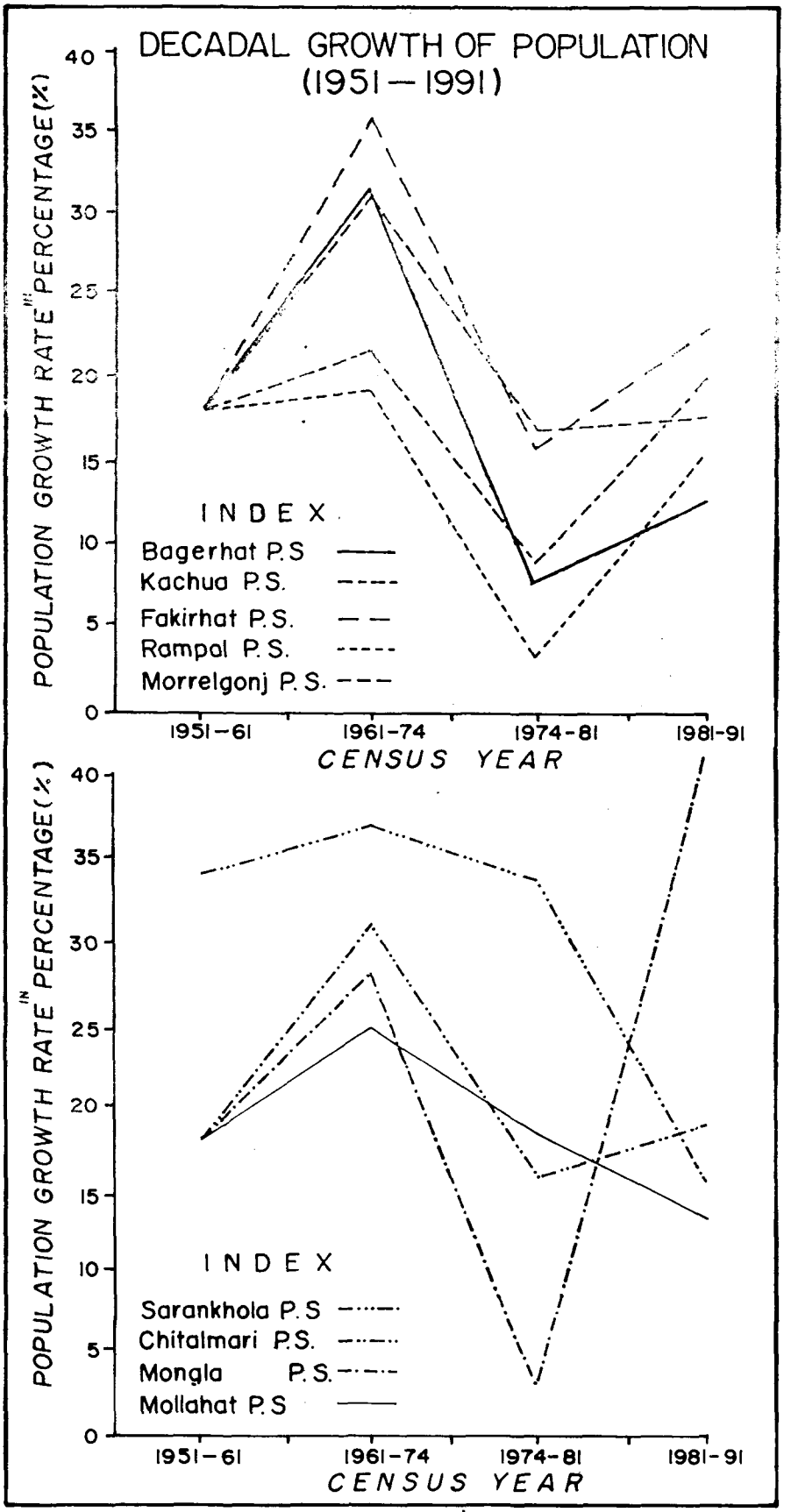

DECADAL GROWTH OF POPULATION
(1951 — 1991)
POPULATION GROWTH RATE IN PERCENTAGE (%)
40
35
30
25
20
15
10
5
0
INDEX
Bagerhat P.S
Kachua P.S.
Fakirhat P.S.
Rampal P.S.
Morrelgonj P.S.
1951-61
1961-74
1974-81
1981-91
CENSUS YEAR
POPULATION GROWTH RATE IN PERCENTAGE (%)
INDEX
Sarankhola P.S
Chitalmari P.S.
Mongla P.S.
Mollahat P.S
1951-61
1961-74
1974-81
1981-91
CENSUS YEAR

Fig. 3·4

During the decade of 1951 - 81, the growth of population was at a comparatively higher rate. This growth rate may be atributed to the decrease of death rate, as a result of better medical facilities given to the people after the independence of Bangladesh. The Bagerhat district is marked by differences in the spatial growth pattern of the country. It is observed that during the last 40 years, the population growth in different police stations was at different rates. Table 3.5 shows the decadal growth and Table 3.6 observed the index of growth of population during the period of 1951 - 1991. (Fig. 3.5). The growth rate in Rampal Police Station is 14 percent. The growth of population was very high in Sarankhola police station (30.28%) because many people migrated here from the other districts. The growth rate in remaining police stations was not significant. Mongla, a sea port has the second highest growth rate (22.9 percent). Workers came to this police station from other places for employment. Growth rate of population in Fakirhat, Kachua and Bagerhat police stations are 16.6, 17.2 and 17.7 respectively. Analysing the index of growth of population, it is observed that the highest growth of population is found in Morrelgonj Police Station, and lowest growth is revealed in Sarankhola Police Station (Table 5.6). It is notworthy that Chitalmari and Mongla Police Stations were formed in 1985.

Table 3.6 index of population growth in 1951 - 1991

	(Percentages to base Years)				
Name of P.S.	**1951**	**1961**	**1974**	**1981**	**1991**
Bagerhat	100	126.7	166.9	201.4	204.4
Chitalmari	-	-	-	100.0	119.6
Fakirhat	100	107.0	145.9	169.0	208.4
Kachua	100	112.2	136.7	161.3	134.9
Mollahat	100	116.3	143.3	169.8	114.1
Mongla	-	-	-	100.0	141.6
Morrelgonj	100	116.7	156.0	180.5	212.0
Rampal	100	121.7	156.7	188.2	129.0
Sarankhola	100	052.7	071.9	086.6	109.0

3.4 LITERACY AND ITS GROWTH

In population geography, literacy is considered as a reliable index of socio-cultural and economic advancement. Literacy is essential for eradicating poverty and mental

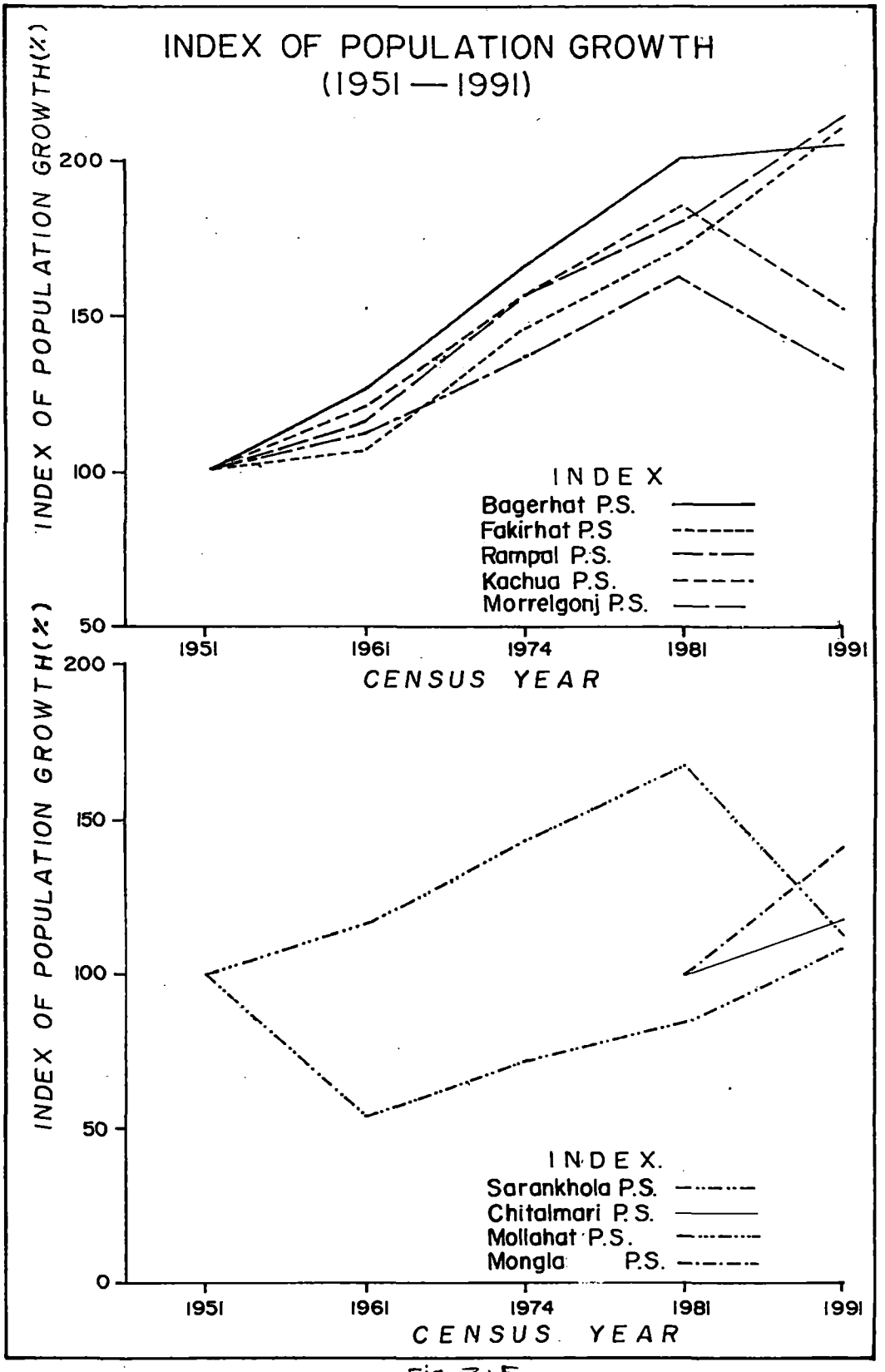

INDEX OF POPULATION GROWTH
(1951 — 1991)
INDEX OF POPULATION GROWTH(%)
200
150
100
50
1951
1961
1974
1981
1991
CENSUS YEAR
INDEX
Bagerhat P.S.
Fakirhat P.S
Rampal P.S.
Kachua P.S.
Morrelgonj P.S.
INDEX OF POPULATION GROWTH(%)
200
150
100
50
0
1951
1961
1974
1981
1991
CENSUS YEAR
INDEX.
Sarankhola P.S.
Chitalmari P.S.
Mollahat P.S.
Mongla P.S.

Fig. 3·5

isolation for cultivating peaceful and friendly international relations and for permitting the free play of demographic process (Chandra & Sidhu,'80). The trend of literacy is the index of socio-economic development of a society. Literacy differentials exist not only amongst religious groups but also amongst social and occupational groups. Generally these differences of literacy reveal the socio-economic back-ground of these groups. Literacy concept is not the same in all the countries. It varies from country to country. According to population commission constituted by the United Nations, a person who has the ability both to read and write and understanding is called a literate (Bari,78).

The principal language of Bagerhat district is Bengali. The percentage of people speaking Bengali 99.08, Urdu 0.86 & others (English, Arabic) are 0.06 in 1974 Census. Bengali is the mother tongue of the people. The percentage of literacy recorded in the 1961 & 1951 Censuses were 22.40 & 23.90 respectively to the total population. According to the statistics of Education Department, there was altogether 752 schools in 1881. They were 6.7 percent males and 0.1 percent females of the district who can read and write.

According to Census '91, the Bagerhat district recorded 44.33 percent literacy (excluding children of below the 7 years age). In the same Census the national percentage of literacy was 24.23. The literacy of males is 49.54 percent while the females literacy was 38.86 percent of the poulation in the district. The female literacy is far below the male literacy. Too much engagement in the household works in addition to early marriage and negligency by the guardians to the female children, literacy rate amongst the females is low not only in the Bagerhat district but also in other parts of Bangladesh. Poverty in the rural areas has also contributed a lot to the poor figure of literacy among the women folks. Police Station wise literacy rate in Bagerhat district has been shown in table 3.7.

Table 3.7 Percentage of Literacy in different police stations

Year	1 Bagerhat			2 Chitalmari			3 Fakirhat			4 Kachua			5 Mollahat		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
1981	44.5	52.2	36.3	27.8	35.4	20.0	40.6	48.8	31.9	42.2	49.3	34.9	26.7	33.9	19.4
1991	49.9	55.3	44.2	37.0	42.2	31.7	43.0	49.0	36.7	42.5	47.5	37.3	31.6	36.8	26.2
Growth	12.1	5.9	21.7	33.1	19.2	38.5	5.9	0.4	14.8	0.8	3.9	6.9	18.1	8.7	34.9

Year	6 Mongla			7 Morrelgonj			8 Rampal			9 Sarankhola			10 Dist. Total		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
1981	38.9	47.5	28.1	42.1	48.9	35.3	39.2	47.2	30.6	38.8	43.9	33.5	39.1	46.5	31.2
1991	42.8	49.6	34.2	49.5	53.9	45.0	45.4	51.5	39.2	41.8	44.4	39.1	44.3	49.5	38.8
Growth	10.0	04.4	21.7	17.6	10.2	27.5	16.1	09.1	28.1	7.8	01.0	16.8	13.4	6.5	24.4

Table 3.7 shows that the highest growth rate of literacy is found in Chitalmari among nine police stations. On the other hand, Kahua recorded insignificant growth in literacy during last decades. The percentages of mauza in different ratios have been shown in table 3.8.

Table 3.8 Percentage of mauza by the size class of literacy rate

	Percentage to Total									
Literacy (percentage)	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
0 - 3	5.5	15.7	7.6	13.5	40.7	32.1	3.4	15.5	—	12.9
31 - 40	16.6	43.3	28.3	32.5	30.5	25.0	19.8	17.8	36.4	24.1
41 - 50	34.5	17.4	37.3	31.0	22.0	35.7	32.2	27.9	63.6	30.9
51 - 60	33.8	11.8	17.9	14.9	5.1	7.2	28.2	21.7	—	22.1
60 <	9.6	11.8	8.9	8.1	1.7	0.0	16.4	17.1	—	10.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

From table 3.8 it is found that highest percentage of mauzas are in the category 41 - 50% of literacy among nine police stations of the district. Bagerhat has recorded

low literacy rate in size class below 60%. It is further observed from table 3.8 that the second highest percentage of mauzas are in range of 31 - 40%. A few number of mauzas are found in the range of 60 and above percent. The district is economically and socially backward, so the literacy growth in rural areas was very slow, compared to that of urban areas in the last decade. The trend of literacy growth is higher among female folks than males. The decadal growth of the female literacy is 24.43 percent, whereas that of male is only 6.4 percent in the study area. It has been possible due to better educational facility provided by the Government for the females.

3.5 NATURE OF SEX-RATIO

The two sexes males as well as females play partly constructing and partly complementary role in the economy and society of a region. The study of sex composition assumes and added significance for Geographer. Franklin (1956) rightly observes that sex-ratio is an index of economy prevailing in an area and is a useful tool for regional analysis. Generally, sex-composition of population is measured in various ways in different countries. In Bangladesh sex-ratio is measured in reference to the number of males per thousand females. Sex-ratio plays an important role in the socio-economic development of the country. The Bagerhat district covering mostly the built up plains and comparatively rich people bears a great significance respect of the sex-ratio.

According to 1991 Census, there were 953 females per thousand males in the Bagerhat district. This figure is little below the national average (965) of Bangladesh. The police station wise sex-ratio is represented in table 3.19 by size-classes.

Table 3.9 Distribution of mauza by size class of sex-ratio

(Percentage to total mauza)

Size-Class (% of Sex ratio)	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
>800	1.4	3.9	3.0	2.7	5.5	—	4.2	8.5	—	3.7
801 - 900	13.8	1.8	11.9	12.7	12.7	13.8	10.7	19.4	9.1	13.4
901 - 1000	53.8	66.7	64.2	39.6	52.7	55.2	45.5	37.9	—	48.9
1001 - 1100	27.6	19.6	16.4	35.5	22.5	24.1	33.0	28.7	90.9	28.8
1101 <	3.4	2.0	4.5	9.5	6.6	6.9	6.6	5.5	—	5.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 3.9 shows the mauza-wise distribution. The highest percentage of mauza of the distirct (48.9%) is found in 901 - 1000 size-class.The second highest mauzas (28.8%) is observed in the range of 1001-1100. The lowest percentage (3.7%)of mauzas is noticed in the size-class of below 800. There is synchronization of percentages of the sex-ratio in all police stations of the district. Among nine police stations,Sarankhola Police Station has the lowest (11) number of mauza and Rampal has the highest (14) number of mauzas of the district. It is also found that in Sarankhola the highest (90.9%) percentage of mauza is in size class of 1001 - 1100. And Bagerhat has the lowest (4.2%) percentage of mauza in the size-class >1300 of sex-ratio in the study area.

3.6 FAMILY SIZE OF THE POPULATION

Family size plays an important role in the rural economy of a region. It is related with the total population as well as the total households. In Bagerhat district there are 685 populated mauzas and nine police stations. Most of the family consist of 5 or 6 members. The distribution of family size is uneven and there are spatial variations within the police station. The percentage of mauzas having the family size of 4,5,6 & 6 and above, are 28.9, 64.9, 5.5 and 0.7 respectively. Chitalmari Police Station has 51 mauzas having family size 4-5. Their percentages are 25.5 & 72.5 respectively. Almost uniform family size is found in Fakirhat Police Station. The percentage of family members of each police stations having size classes of 3,4,5,6 and above 6 are low. The highest percentage (62.3) is found in size-class of 5 and lowest percentage (1.3) is in size class 3 in the district. Distribution of family size and their percentage of population are shown in table 3.10.

Table 3.10 Percentage of family size in the mauza of different police stations of Bagerhat district

(Percentage to total number of mauza)

Size-Class (family members)	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
Less than 3	—	—	1.5	4.0	—	—	—	3.9	—	1.3
4	28.9	25.5	34.3	47.4	1.8	32.2	21.6	43.4	9.1	30.2
5	64.9	72.5	61.2	45.9	78.2	60.7	70.2	48.8	90.9	62.3
6	5.5	02.0	1.5	2.7	18.2	7.1	4.1	2.3	—	4.7
Above 6	0.7	—	1.5	—	1.8	—	4.1	1.6	—	1.5
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

From table 3.10 it is revealed that Sarankhola Police Station has only two categories of size class i.e. 4 & 5. Their respective percentages are 9.1 & 90.9. Six police stations cannot found below 3 persons family member. Remaining family size are 4,5 and 6. District wise average percentage of family size and their classes are almost the same. It is also revealed that a few number of mauza are in the range of above 6 persons in the district.

3.7 OCCUPATIONAL STRUCTURE OF HOUSEHOLD

Occupation is the unitary relationship pattern of the three occupational components-primary, secondary & tertiary working poulation of an area. Occupation of the people in Bagerhat district is divided into following categories : (i) Cultivators (ii) Livestocks (iii) Agriculture (iv) non-agricultural labour (v) handloom (vi) Business (vii) Construction (viii) Transport (ix) Employee and (x) others, as per agriculture census of 1983. The number of households in each occupations for 1983 is given in the table 3.11.

Table 3.11 Percentages of different household occupations in the district

Name of P. S.	Cultivator	Livestock	Agriculture Labour	Non.agri. Labour	Handloom	Business	Const -ruction	Transport	Employee	Others	Total
Bagerhat	29.6	03.2	14.0	8.0	0.01	15.9	0.87	5.6	10.4	12.2	**100**
Chitalmari	52.8	02.1	24.1	1.7	0.00	8.5	0.50	0.9	5.2	4.2	**100**
Fakirhat	38.2	03.9	16.9	6.0	0.01	14.3	0.60	3.0	8.3	8.0	**100**
Kachua	39.0	02.7	21.9	5.9	0.00	13.05	1.00	2.6	5.9	7.2	**100**
Mollahat	53.6	02.1	22.1	2.0	0.00	5.9	0.30	1.2	6.2	6.4	**100**
Mongla	21.4	07.1	12.4	13.4	0.00	15.0	0.96	1.9	16.3	11.4	**100**
Morrelgonj	35.5	04.7	20.7	6.8	0.07	11.9	1.10	1.4	5.6	12.3	**100**
Rampal	33.5	5.7	20.1	6.9	0.01	14.0	1.10	1.3	4.9	12.3	**100**
Sarankhola	32.9	13.6	12.0	7.3	0.00	14.1	1.20	0.8	5.8	12.3	**100**

The percentages of the different occupations have been calculated and represented in table 3.11. From table, it is found that 29.6 percent of households are cultivators in 'Sadar' Police Station, i.e. Bagerhat P.S. About 14 percent of total workers are in agricultural labourers. A very few number of households are engaged in handlooms. Among nine police stations, the cultivators are highest in Mollahat P.S (53.6%) and is lowest in Mongla Police Station. (21.4%). It is also found that both the police stations have highest percentage in business men (15.9 & 15.0). Chitalmari (24.1%) and Mollahat (22.1%) Police Stations recorded the highest and second highest percentage of households engaged in agriculture labour. Construction and handlooms are insignificant in each police station. The dominant occupation in the district has been shown in the table 3.12.

Table 3.12 Level of occupational patern and dominant function

	(Number of occupational activities)		
Name of P.S.	**Higher than average**	**Lower than average**	**Dominant functions**
Bagerhat	7	3	$C_1AL_2O_3$
Chitalmari	2	8	$C_1AL_2B_3$
Fakirhat	4	6	$C_1AL_2B_3$
Kachua	4	6	$C_1AL_2B_3$
Mollahat	2	8	$C_1AL_2O_3$
Mongla	6	4	$C_1E_2B_3$
Morrelgonj	5	5	$C_1AL_2O_3$
Rampal	7	3	$C_1AL_2B_3$
Sarankhola	5	5	$C_1B_2L_3$

C_1 =Cultivators, AL_2 = Agriculture labour, B_2 = Business, O_3 = Others, E_2 = Employee, L_3 = Livestock

Table 3.12 shows that the main occupation is agriculture in all the Police Stations. In the district. Agriculture labour is the second rank in occupation in 7 Police Stations. Trade and business is the third occupation in 6 police stations. It is also found that only employment is one of the dominant occupations in Mongla Police Station. A very few number of households are engaged in livestock, handloom, transport and constructions works. (Appendix Table - VI).

Agriculture plays an important role in rural economy. It is obvious that the percentage of households in agricultural activities in the district is extremely high compared to other occupational activities. The percentage of households in other occupations also very low, because of lack of resources and poor economic conditions of the region. A small percentage of people are engaged in transport & constructions. But their percentages are continuously increasing with the development of communication and infrastructure. The level of occupations are shown in table 3.13.

Table 3.13 Level of dominant occupational pattern in the police stations of the district

	(No. of P.S. in each occupation)									
	Cultivator	Livestock	Agriculture Labour	Non.agri. Labour	Handloom	Business	Const -ruction	Transport	Employee	Others
Higher than average	4	3	5	5	3	6	6	2	3	5
Lower than average	5	6	4	4	6	3	3	7	6	4
Total P.S.	9	9	9	9	9	9	9	9	9	9

From table 3.13 it is found that the level of occupational pattern of nine Police Stations in the district are not satisfactory. Number of police stations in higher than the average of total households in business, agriculture & agriculture labourer high.Contrarily, the lower than the average of occupational pattern in nine police stations are very meagre in transport, livestock & handloom. Finally, it can be stated that five categories of occupational activities are mainly found in the study area.

3.8 DIFFERENT OCCUPATIONAL PATTERN IN THE DISTRICT

The Bagerhat district exhibited nondynamism in the occupational structure of the people. The highest number of people are working in households occupation in the district. The percentages of different kinds of occupations are visualised from table 3.14.

Table 3.14 Name of p.s. in different category of household workers

Percentage	Category	Number of P.S.	Name of the P.S.
36 - 37	Very low	5 (56%)	Bagerhat, Fakirhat, Chitalmari, Mollahat, Mongla
38 - 39	Low	2 (22%)	Kachua, Rampal
40 - 41	Moderate	1 (11%)	Morrelgonj'
42 - 43	High	1 (11%)	Sarankhola.

Analysing the study of occupations most of the working people are invloved in household occupation. In Bangladesh, the oldest man of the family is the head of the household and he maintains the respective household with the help and co-operation of other family members. It reveals from table 3.8 that 5 police stations of the district is comprising 56% of the total area in very low category (11), working in the household occupations. Sarankhola police station comprising a few number of mauzas are in high category of household workers. Kachua & Rampal Police Stations are in low cagegory of household workers. The percentage of agricultural occupation are shown in table 3.15.

Table 3.15 Name & percentage of police stations of agricultural occupation

Percentage	Category	Number of P.S. & its %	Name of the P.S.
Below 12	Very low	5 (11%)	Mongla
13 - 16	Low	2 (22%)	Bagerhat, Sarankhola
17 - 20	Moderate	3(34%)	Fakirhat, Rampal Morrelgonj
21 - 24	High	1(11%)	Kachua
25 - 28	Very high	1(11%)	Mollahat
28 above	Extraordinary	1(11%)	Chitalmari

Agriculture is the main source of income of people in the study area. Most of the people are indirectly dependent on agriculture. From table 3.15, it is observed that

Chitalmari & Mollahat police stations are the highest & extra-ordinary categories in agricultural occupation (11%). Mongla Police Station has the lowest category of agriculture. Analysing the occupational patterns, about 80% of working force of the district are engaged in agriculture cum agriculture labourer (Appendix table). It is also observed from table 3.15 that the moderate percentage of agricultural occupation shows in three Police Stations of the district.

Table 3.16 Number of police stations in different category of business

Percentage business	Category	Number of P.S. with percentage	Name of the P.S.
2 - 3	Very low	22% (2)	Chitalmari, Mollahat
4 - 5	Low	11% (1)	Morrelgonj
6 - 7	Moderate	56%(5)	Bagerhat, Fakirhat, Kachua Sarankhola, Rampal
above 8	High	11%(1)	Mongla

From the study of occupational structures of the district, there are 6.2 percent of the total working people of the study area ~~of the total working people of the study area~~ are involved in business (Appendix Table VI). From table 3.16, Chitalmari & Mollahat police stations have very low percentages of business works and Mongla police station has the highest percentage of workers in the same occupation. Bagerhat, Fakirhat, Kachua, Sarankhola and Rampal P.S have moderate category of business occupations.

Table 3.17 Percentage of services & others occupation in the district

Percentage	Category	Number of P.S. with percentage	Name of the P.S.
4 - 5	Low	33% (3)	Chitalmari, Mollahat, Kachua
7 - 9	Moderate	11% (1)	Sarankhola
10 - 12	High	22% (2)	Morrelgonj, Fakirhat
above 13	Very High	34% (3)	Mongla, Bagerhat, Rampal.

Among the categories of occupational structures, the services occupy the 4th rank of the total occupational pattern of the district. Out of nine Police Stations, Mongla is in the highest position and Chitalmari is in the lowest position in the district. (Appendix table VI). The percentage and number of services are very high in 3 police stations (Mongla, Bagerhat & Rampal). Sarankhola is a in moderate category in the district. (Table 3.17) Remaining P.S. (Morrelgonj & Fakirhat) are having highest (22%) category in the services & others occupation.

Table 3.18 Number and percentage of different categories of transport & communications.

Percentage	Category	Number of P.S. with percentage	Name of the P.S.
0.6 - 0.9	Very Low	22 % (2)	Chitalmari, Mollahat
1.0 - 1.3	Low	45 % (4)	Fakirhat, Morrelgonj. Sarankhola, Rampal
1.4 - 1.7	Moderate	11% (1)	Kachua
1.8 above	High	22 % (2)	Mongla, Bagerhat

From analysing occupational pattern, transport & communication is the 6th position in number of households having employment. They are involved in 1.3% in comparison to total occupational pattern. Bagerhat Police Station has the highest percent of households in transport & communication (25%) and Mollahat P.S. has the lowest percenage (0.6%) (Appendix table VI). It is observed from table 3.18 that Fakirhat, Morrelgonj, Sarankhola & Rampal are in lowest category of households and Kachua Police Station is in moderate category in transport & constructions. Bagerhat is the junction of road link, waterways & railways. So the highest percentage of households are employed in transport & communications. Fakirhat is also the junction of railways, and road routes. The percentage of transport & communication is also high in the areas because these are located in good road linkage.

Table 3.19 name of the police stations in different categories of non-workers

Percentage	Category	Percentage Number of P.S.	Name of the P.S.
17 - 19	Very Low	11% (1)	Mongla
20 - 22	Low	11% (1)	Sarankhola
23 - 24	Moderate	45% (4)	Chitalmari, Fakirhat, Morrelgonj, Rampal
25 above	High	33 % (3)	Bagerhat, Kachua, Mollahat

It is observed from table 3.19 that two Police Stations i.e. Mongla & Sarankhola have very low & have the lowest percentage of non-working people. Mongla is a sea port area and Sarankhola is a fertile zone of the region and also trade centre of forest products. Chitalmari, Fakirhat, Rampal & Morrelgonj P.S. have moderate type of non-working people and 3 police stations are in highest category of the district.

CONCLUSION

In the light of analysis it reveals that the demographic character has not evoked any significant rate of development during the last decades. The trend of growth in the last five decades was geometrically related. In the 1960's the higher growth rate in the district is due to high birth rate of population in the region. After 1970's the emegration of people & liberation war in 1971 were responsible for the lower growth rate. The overall population density in the district was 362 km^2 in 1991. It was corresponded the decadal population density trend. It is revealed that the density has been gradually increasing. But the rate of change was uneven e.g. the highest increase was recorded in 1951. Density is still low as compared to the other districts of the country. The trend of population density is lower during the last two decades. The total number of literate persons in the district was 70,555 in 1991. The percentage of literacy was 38.8. Of which, the male literacy was 49.3% & the female literacy was 44 percent. There was a wide gap between the male and female literacy but female literacy growth rate was higher than male. The trend of literacy has been increasing but the rates are uneven in different police stations. Among nine police stations, Morrelgonj leads others both in area & population. Other police stations contain nearly one lakh or more population. By comparing the sex ratio in the district, it is observed that females are less in number than males. Due to the low rate of literacy and high growth of population, employment opportunity shrinks. Agriculture is the main occupation of majority of people and as a result, most of the workers live under the poverty line. Hence, it is essential to identify the level of socio-economic functions in the district as well as in the police stations.

CHAPTER - FOUR

Level of Socio - Economic Functions.

INTRODUCTION

Socio-economic functions play an important role for alround development of an area. In rural area , yield rates of crops are increased with investments and due to poverty, the farmers could not invest sufficiently for crop cultivation. Other socio-economic functions like financial institutions, health services, transport & communications and markets have direct influence to raise this economic and social standard of the inhabitants. This chapter deals with the existing socio-economic functions available in the district of Bagerhat. At what extent these socio-economic functions helped the market centres to develop are to be discussed in details.

4.1. PATTERN OF TRANSPORT

Transport is one of the most important factors influencing the establishment and development of rural market centres. An effective transport system is indispensable for the effective utilizaton of resources and mobility of the people & goods. A transportation system generally serves two purposes, namely, accessibility and mobility. So transportation of agricultural goods is quicker if the network of communication system is better. The mode of transport also plays an important role for quick mobility of goods. An inquiry has been made to find out the relationship between the transport and market centres. The site and nature of markets are governed by the economic activities of the region where they are situated (Wanmali,1981). From the field study, it is observed that there are three main types of transports for the movement of people and goods in the district. These are: roads, railways, and water ways (Fig - 4.1).

4.1.1. Road Transport

Road is the principal communication system in the district. Most of the roads are connected with the police station head quarters as well as district headquarters / towns (Fig - 4.1) The roads may be divided into three types ; (i) Pacca (ii) Metalled and

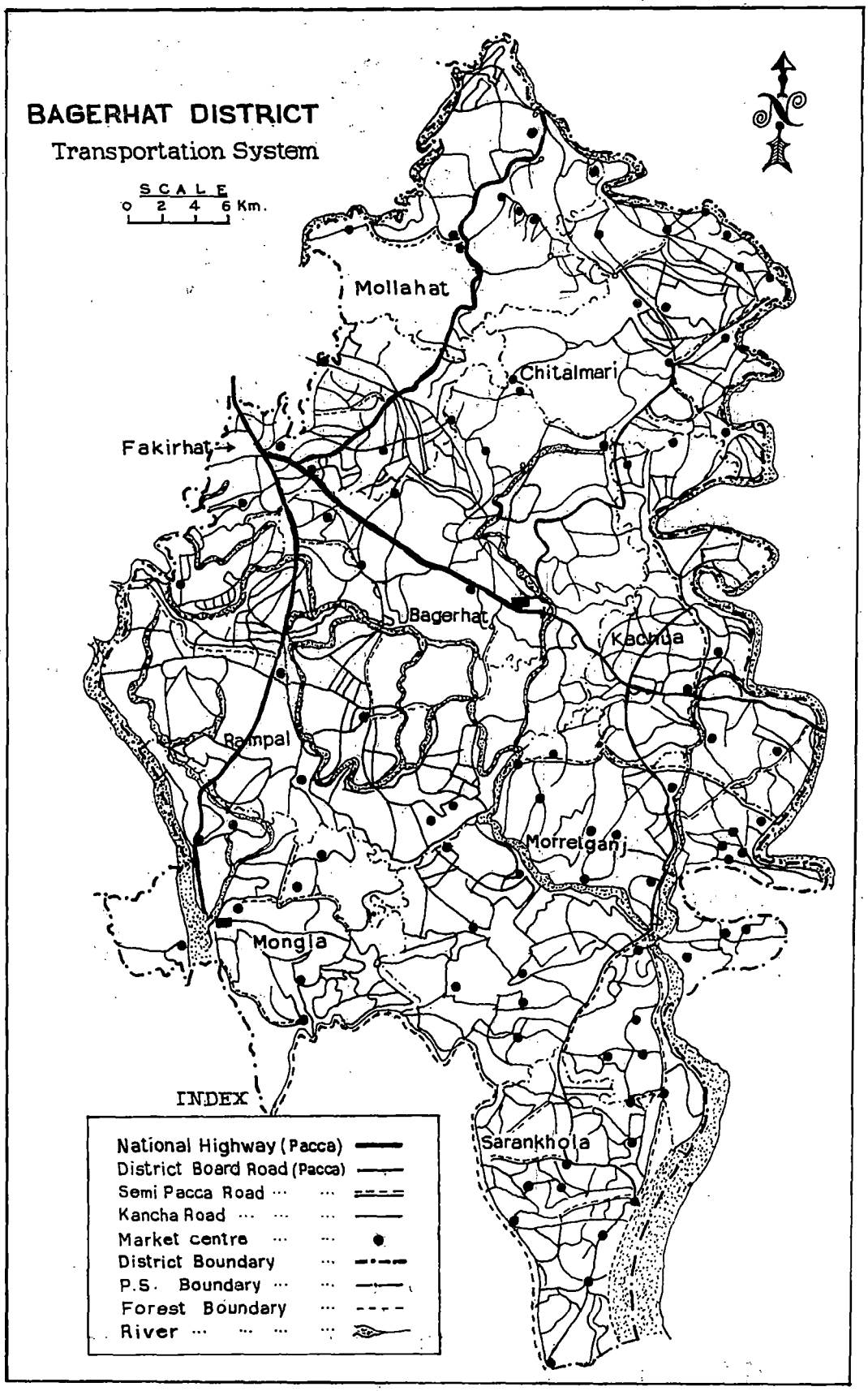

BAGERHAT DISTRICT
Transportation System
SCALE
0 2 4 6 Km.
N
Mollahat
Chitalmari
Fakirhat
Bagerhat
Kachua
Rampal
Morrelganj
Mongla
Sarankhola
INDEX
National Highway (Pacca)
District Board Road (Pacca)
Semi Pacca Road
Kancha Road
Market centre
District Boundary
P.S. Boundary
Forest Boundary
River

Fig- 4.1

Plate 4.1 Bus-stand of Morrelgonj market centre

Plate 4.2 Launch ghat of Rayenda market centre

(iii) Kacha roads. The Bagerhat district presently traversed with 172 km pacca roads, 139 km of metalled roads and 5098 km of Kacha roads (B.B.S. 1995). Thus, the densities of roads per km^2 are 2.4 km for Kacha. 0.07 km for metalled, 0.07 for of Pacca roads in the district. The average road density in the district per km^2 is 3.3 km. All the Kacha roads are seasonal and cycle and rickshaws can move on these road in dry season. The majority of roads in the district are merely along the levees of embarkments of rivers and estuaries. The district roads are connected by pacca road with Police Station headquarters (Fig. 4.1) A few markets on Union headquarters are connected by metalled road with P.S. headquarters. Atleast 15 market centres are connected with National High Ways. These market Centres are mostly situated in northern part of the district. The length of the roads is significant in any region. Because it shows the level of transport development of the area.(Plate 4.1).

4.1.2 Railways

In 1908, the district had only 21 km of rail-line (B.B.S. 95) . At present, the district is served by the Bangladesh railways which is 25 km in length. It is run from the Bagerhat to Rupsha East (Khulna City). It is a broadgauge line.(Fig - 4.1) There are 6 rail stations on this line. The rail lines connects only two market centres viz Mansha (Mulgar) and Jattrapur.

4.1.3 Water Transport

Water ways are the second most important routes of communication system in the district. The entire district has innumerable rivers, tributaries and channels. The district is dependent primarily on water communications. Thousand of small country boats, which play on the rivers, tributaries etc. are the easiest and cheapest means of transport. The district has 1,563.5 km water ways and the density of water way is 0.75 km/ha About 95% market centres are located on the bank of rivers and channels. The farmers and traders mostly use country boats, engine boats or launches because the transport cost is considerably low. Although this public carriers are usually slow but these are available easily. Water transport vehicles carrying the commodities. The launch services connect the Bagerhat district Headquarter with Tafalbari, Rayenda, & Morrelgonj market centres. Other services connect 7 market centres which are located in two police stations namely, Rampal and Mongla. There is a steamer service from Khulna

city to Dhaka city. via- Mongla, Morrelgonj & Sarankhola market centres. This route helps the traders to bring their merchandises by steamer from Dhaka to Khulna town.(Plate - 4.2)

4.1.4. Others means of transport

Other means of transport are kacha roads and temporary roads. In dry season from November to May, the villagers use temporary path through the open fields for saving time and distance to go to market centres by straight-line from their residence. In the winter season, the crop fields usually uncultivated so the movement of goods on human heads & shoulders through this way are the most dominant . The porters can travel 2 - 5 km with a load of 50 kg. Sixty percent of local goods are being carried by head & shoulder loading to local markets. While up to 45 percent of total goods moved to secondary markets are transported by this mode (Talukdar and Siddique, 1979 : P. 14.)

4.2 LEVEL OF TRANSPORT DEVELOPMENT

Transport linkage plays a vital role in supplying commodities to the markets. The level of transport development of the district can be measured with the help of four selected indicators are :

(1) length of road / 100 km^2 area
(2) length of road / 1 lakh population
(3) length of road / 10 villages and
(4) length of road / 10 market centres.

On the basis of there four indicators, the level of transport are identified in table 4.1 - 4.4, tabulated & plotted on the maps in order to find out the comprehensive status of transport development.

Plate 4.3 Engine boats awaiting for market Passengers

Plate 4.4 Country Boats waiting at Morrelgonj market 'boat ghat' for home going passengers

4.2.1. Length of road / 100 Km² area

Table :- 4.1. Police Stations in different categories of road density (Length of road / 100 km² area.)

Category	Score Value	Number of Police Stations	Name of the Police Stations
Low	below 200	4	Bagerhat, Chitalmari, Mollahat, Sharankhola,
Medium	200 - 400	4	Fakirhat,Mongla, Kachua, & Rampal
High	400 & above	1	Morrelgonj

Table 4.1 shows that Morrelgonj Police Station has high road density per 100 km² . Four police stations viz. Kachua, Fakirhat, Mongla & Rampal having medium road density. This is considerably enhanced transport connectivity in the district. Four police staions having below 200 Km² road density. This low road density in these police stations is due to poor development of road network. The area and length of road hardly exhibit any significant sight of positive relationship. The high road networks are depended on administratrative status of the centre, number of markets and incidence of cash crops.

4.2.2 . Length of road / one lakh population

Table 4.2 : Police Stations in different categories of road density (Length of road / lakh population)

Category	Score Value	Number of the Police Stations	Name of Police Station
Low	below 200	2	Bagerhat, Chitalmari
Medium	200 - 400	5	Kachua,Fakirhat, Mollahat, Mongla & Sarankhola
High	400 & above	2	Rampal, Morrelgonj.

Three categories of police stations have been identified in the district. Table 4.2 presents the name and number of police stations in each class. It is found that there are two police stations in the low category. Another two are in the high category. Rest of the police stations are of medium category.(Fig - 4.2).

RELATION BETWEEN ROADS WITH AREA & POPULATION

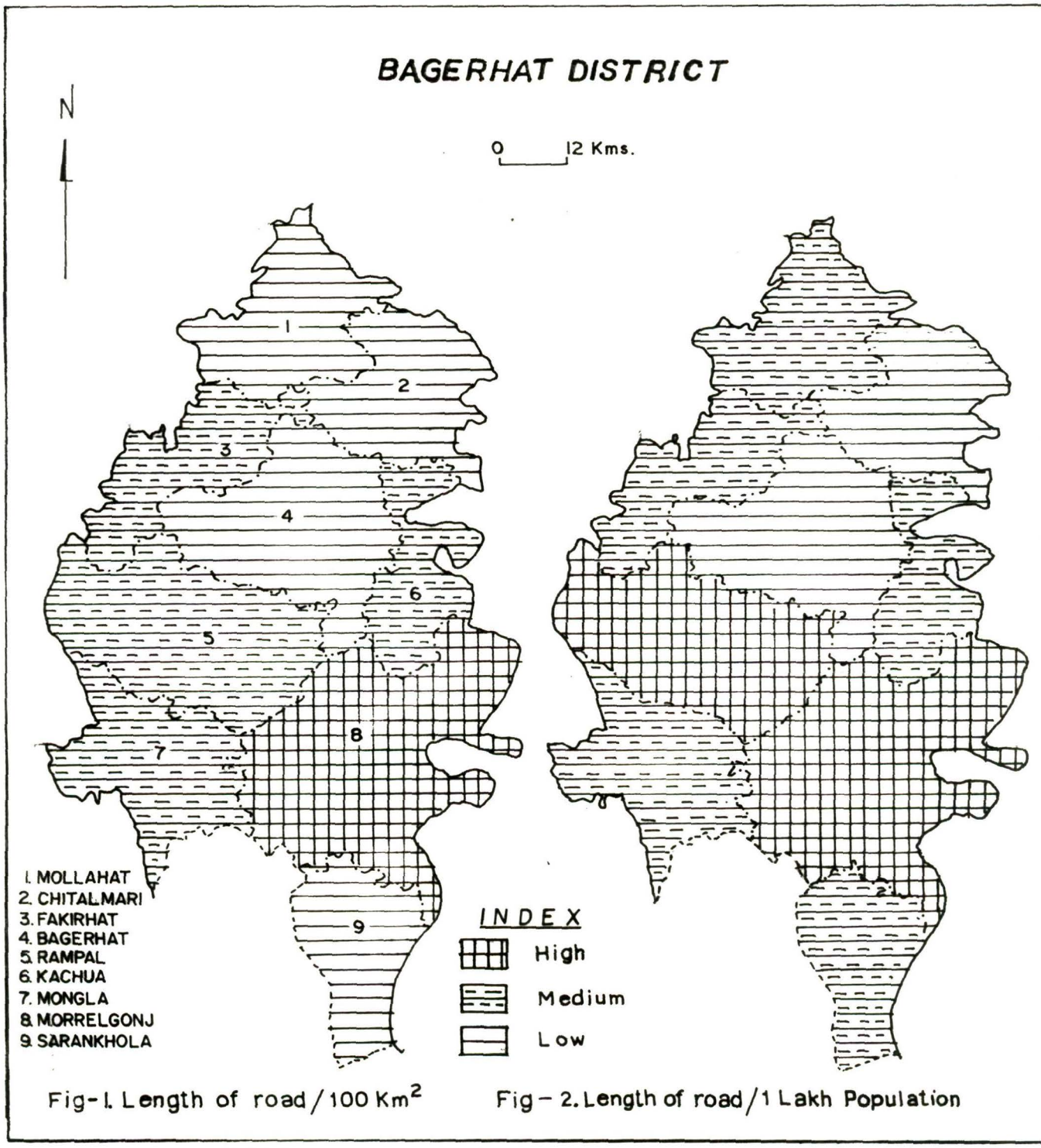


Fig-1. Length of road / 100 Km^2

Fig – 2. Length of road / 1 Lakh Population

Fig – 4.2

4.2.3. Length of Road / 10 Villages

Table 4.3 : Police Stations in different categories of road density (Length of road / 10 villages).

Category	Score Value	Number of the Police Stations	Name of the Police Stations
Low	>50	6	Bagerhat, Chitalmari,Rampal Fakirhat, Kachua, Mollahat
Medium	50-100	2	Mongla & Sarankhola
High	100 <	1	Morrelgonj.

The number of villages on roads provides an authentic measure of the accessibility and connectivity of settlements. In Bagerhat district, the value of indicator ranges from 8.4 in Chitalmari to 218.2 in Morrelgonj P.S. The different police stations is each category are shown in table 4.3. There is only one police station in high category. In medium category, there are two police stations. Remaining 6 police stations are in low category.

4.2.4. Length of roads / 10 market centres

Table 4 : 4 - Police Stations in different categories of road density (Length of road / 10 market centres.)

Category	Score Value	Number of Police Stations	Name of Police Stations
Low	below 200	4	Bagerhat, Chitalmari, Mollahat, Sorankhola
Medium	200 - 400	2	Fakirhat, Kachua.
High	above 400	3	Mongla, Morrelgonj,& Rampal.

From the table 4.4. it is found that length of road per 10 market centres is high in three police stations and other two police stations have medium level of development. Four police stations are in low category.

4.3. EDUCATIONAL ATTAINMENTS

Education is an essential pre-requisite of socio-economic development. The rate of economic growth is related to the qualityof manpower. Education is indispensable to asses the qualities of manpower of the nation, and at the same time, socio-economic function is related to literacy. The percentage of literacy also depends on the number &

RELATION BETWEEN ROADS WITH VILLAGES & MARKETS

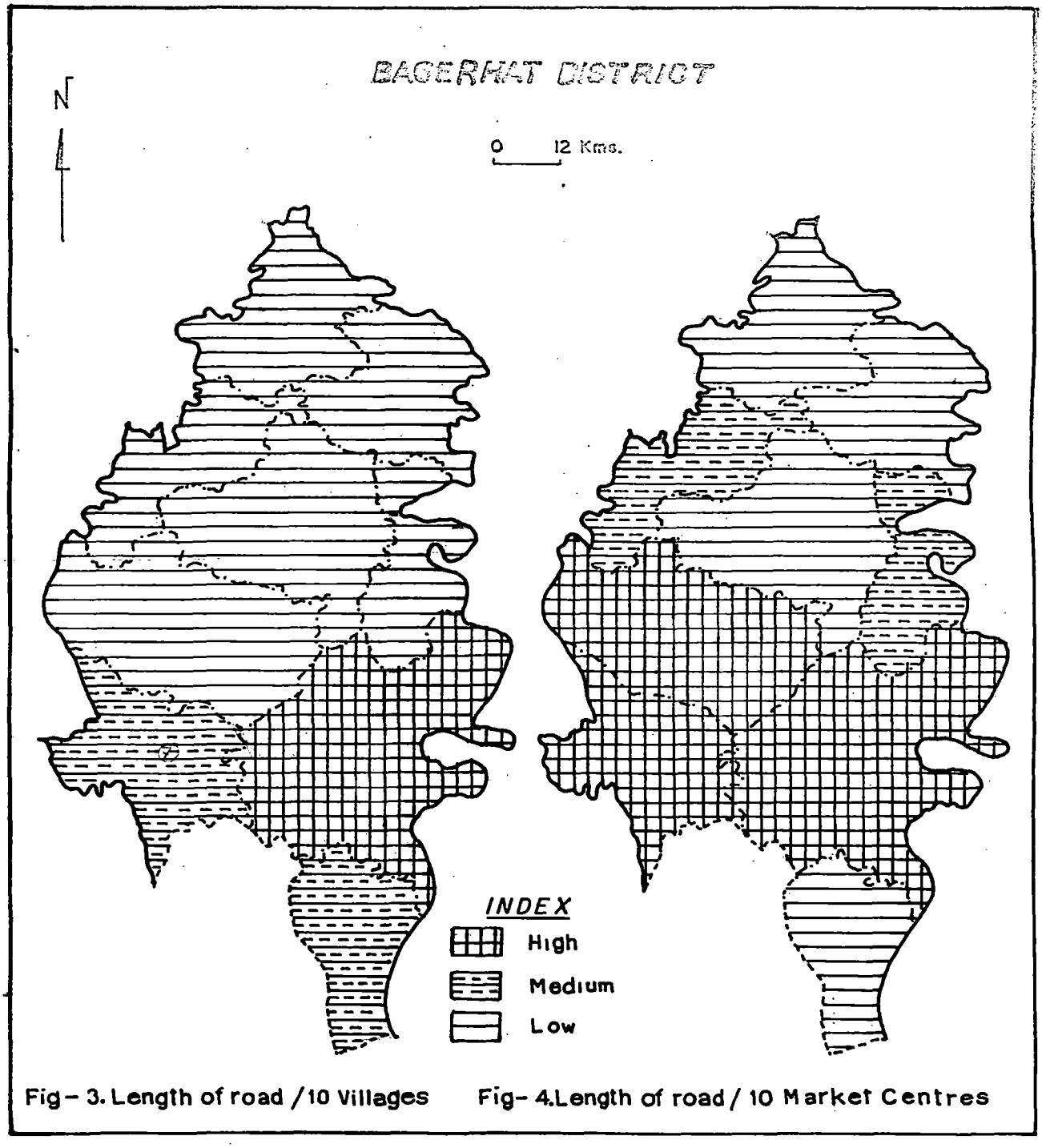


Fig – 3. Length of road / 10 Villages

Fig – 4. Length of road / 10 Market Centres

Fig – 4·3

types of educational institutions and their distribution within the district. The district occupies a fairly good position in education at the context of nation (Bangladesh). The literacy rate of this district is much higher than the average rate of Bangladesh. The rate of literacy in the district is 32.38% as against 24.27% in whole of the Country (B.B.S. 83). About 5.18% Colleges, 6.28% High School and 4.75% of Primary School of Bangladesh are situated in this district. The percentage of literacy has increased gradually in recent days. But the standard of teaching and infrastructural facilities in these institutions are not satisfactory due to of the growing demand of students. There are a few number of Schools & Colleges and they are far from each other. (Fig 4.4, Plate - 4.3).

It reveals that five main types of educational institutions are available in the district. There are : Primary School, High School, College, Madrasha and other professional institutions.

4.3.1 Primary School

Primary School is the lower most educational institution of the district. There were 827 primary schools in the district, in the year 1995, (Table - 4.5) and number of students were 1,72, 487. Generally 3 - 5 teachers including one Head Master run a school. There are two categories of primary schools i.e. Government & Non-Government.

The number of primary schools are higher in Bagerhat P.S. (145) & Morrelgonj. Police Stations (134). It is revealed that the number of primary schools is few in Mongla (61) & Fakirhat (51) Police Stations compared to other police station. It is also found that during the past decades, the nunber of schools & schoolgoing children were increased significantly.

Table 4.5. Number of Institutions in different police stations:

Name of the Police Stations	Primary School	High School (High+Junior)	College	Madrasha	Others Institutions
Bagerhat	145	44	3	14	1
Chitalmari	93	22	2	27	0
Fakirhat	51	22	2	27	0
Kachua	59	10	1	12	0
Mollahat	97	19(13+6)	1	22	315
Mongla	61	3	3	63	7
Morrelgonj	134	53	4	45	251
Rampal	109	44(28+16)	3	41	0
Sharankhola	78	12 (9+3)	1	21	0
Total	**827**	**229**	**20**	**272**	**574**

Source : P.S. Statistical Offices, 1995 (Bagerhat, Bangladesh)

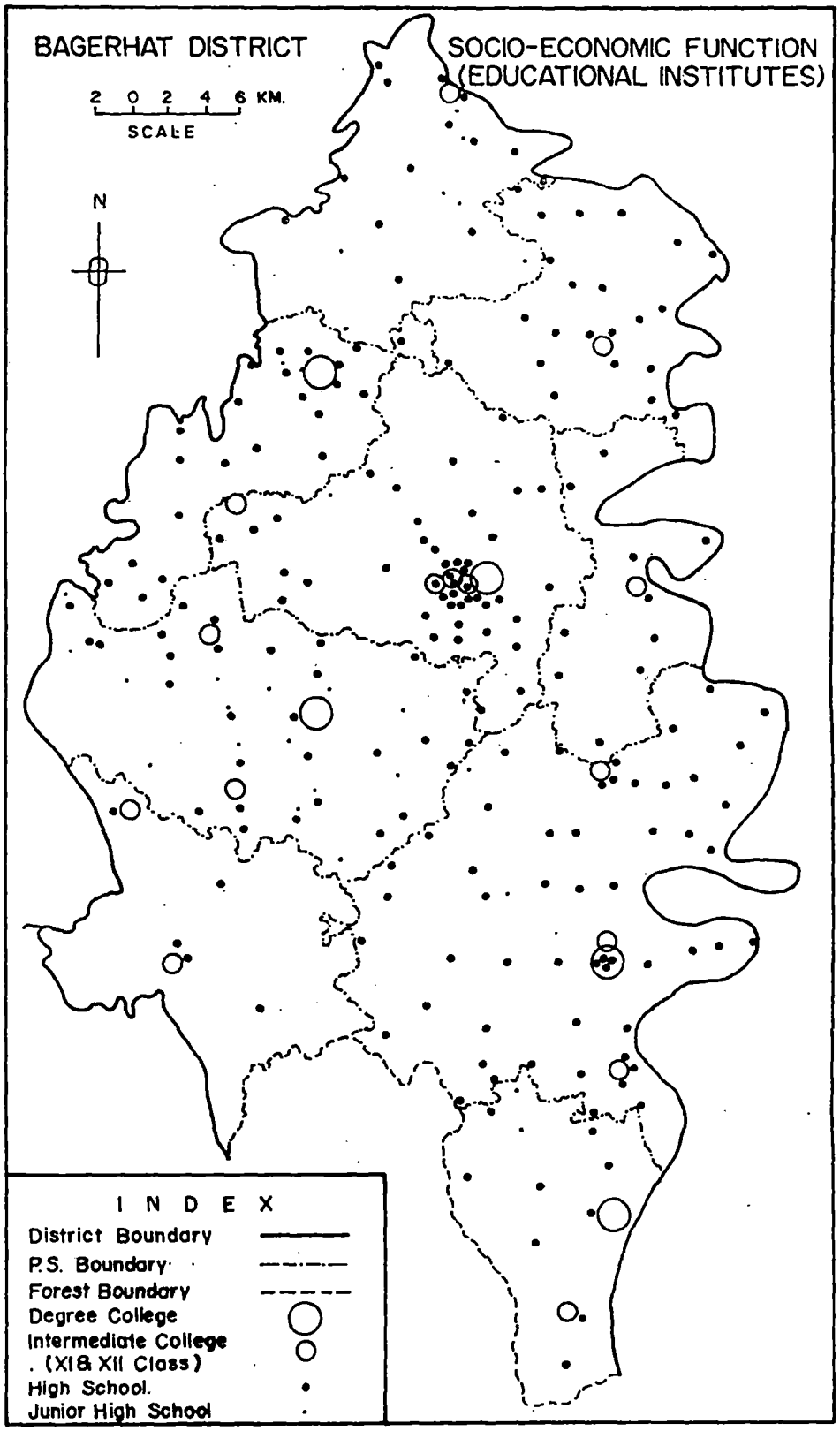

BAGERHAT DISTRICT
SOCIO-ECONOMIC FUNCTION
(EDUCATIONAL INSTITUTES)
2 0 2 4 6 KM.
SCALE
N
I N D E X
District Boundary
P.S. Boundary
Forest Boundary
Degree College
Intermediate College
. (XI & XII Class)
High School.
Junior High School

Fig. 4·4

Plate 4.5 Post office & other offices in headquarters at Fakirhat market

Plate 4.6 Educational Institutions at Rayenda market

4.3.2. High School

It is the most important educational institution and the standard of teaching is upto class ten. Generally, in a school, the number of teachers and students varies from 10 to 12 from and 300 to 600 respectively according to the location and infrastructure of the school. Out of 229 high schools in the district, 53,44 & 44 are situated in Morrelgonj, Bagerhat & Rampal Police Stations respectively. The lowest number of high schools is observed at Mongla (3) and Kachua (10) Police Stations. (Table 4.5) The total number of students of the district is 61490 and the highest is shared by Bagerhat P.S. (16,491) and the lowest is shared by Mongla (250) Police Station. Number of Girls High Schools is very few, due to the existence co-educational system in most of the high schools in the district.

4.3.3. Colleges

There are 20 colleges in the district. Two types of colleges; Degree College and Intermediate College (XII class) are found in the district. Most of the colleges are non-government. Only two colleges in Bagerhat district Headquarters are directly run by the Government. All these colleges are co-educational except Bagerhat & Rampal Girls Colleges. Generally Science Commerce & Humanities courses are taught in these colleges. The total number of students in the Colleges in the district are 10,766, (B.B.S) The highest number is shared by Morrelgonj P.S. (2,260) and the lowest is shared in Kachua Police Station (308). Most of the colleges are situated in the police stations headquarters.

Table 4.6. Number of students in different Institutions of the district

Name of the P.S	Primary School	High School	College	Madrasha	Others Institutions
Bagerhat	30609	16491	1350	4182	13
Chitalmari	10600	6290	560	2835	—
Fakirhat	9009	6555	1444	1314	—
Kachua	11265	2175	308	1272	—
Mollahat	15201	6355	460	1090	15256
Mongla	11918	250	2979	5260	0
Morrelgonj	44103	11817	2260	11250	24930
Rampal	11252	10488	780	6592	0
Sarankhola	28530	11069	625	1575	0
Total	**172487**	**61490**	**10766**	**35370**	39186

Source : Statistical Office, Bagerhat (1995).

4.3.4. Madrasha

Madrasha is mostly religious educational institutions of the district. There are three kinds of Madrashas : senior, junior & hafizia Madrashas. Some institutions are government recognized. But most of these are run by local donation. Senior Madrasha is otherly known as Alia Madrasha. Alia Madrasha is most important to religious education and related academic education. In the district, there were 272 Madrashas and 35370 students reading in different types of Madrashas 1995 (B.B.S., 1995) Majority of these institutions are attached with the Mosque.

4.3.5. Other Institutions

From the field observation it is noted that besides these educational institutions some other vocational, professional, & training institutions are available in the district. But their number is very few. A primary teachers' training school, vocational training institute (Bagerhat) and Sanskrit School (Morrelgonj) are situated in the district. It is very interesting that there are 574 'Moktob's situated in the district. Most of them are at Morrelgonj and Mollahat Police Stations (Table - 4.6) These are run by local 'tols' of the villagers.

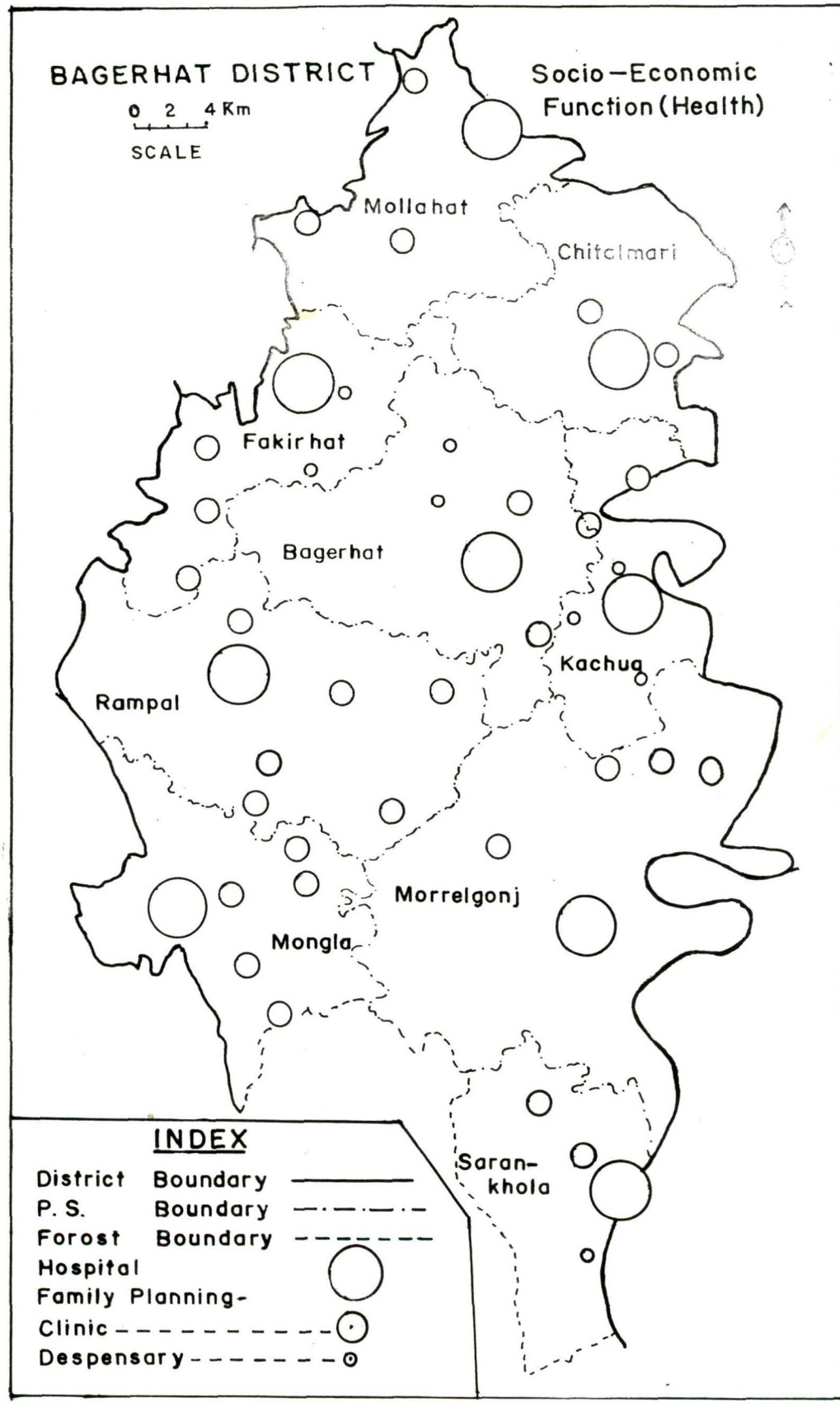
4.4. HEALTH & SOCIAL WELFARE SERVICES

The aim of intergrated social and economic development is to improve the general level of living of the people. The health standards of the people are both reflection and result of the prevailing economic level.

Health services can be divided into two categories viz. Hospital & Charitable Dispensaries. Their servicers are generally free for the patients and open to all.

4.4.1. Hospital

In the district, eight hospitals are located in different Police Stations including district headquarters. The district hospitals with 100 beds is located in district town and the remaining 7 hospital are situated in police stations headquarters except Mongla Police Station (Fig 4.2). There is no specialized hospital in the district. From the field study, at least 59,2986 patients had received medical treatments in the district in 1995. (Table 4.8) Police station hospitals consist of 8 doctors and 50 beds. Due to the shortage


BAGERHAT DISTRICT
0 2 4 Km
SCALE
Socio-Economic
Function (Health)
Mollahat
Chitalmari
Fakirhat
Bagerhat
Kachua
Rampal
Morrelgonj
Mongla
Saran-
khola
INDEX
District Boundary
P. S. Boundary
Forost Boundary
Hospital
Family Planning-
Clinic
Despensary

Fig— 4.5

of beds, patients are bound to lie on the floor. The beds & nurses are highly insufficient compared to demand. In total, 62 doctors, 24 medical assistances and 53 nurses are in service of 8 hospitals in the district. In 1995, total of 19,560 indoor and 5,73,426 outdoor patients were treated. (Table 4.7). In hospitals, most of the departments suffered form shortage of equipments. In some cases, the hospitals possess more departments, viz. Gynocology, X-Ray, Pathology and minor surgical. There are also family planning clinics attached to hospitals. Family Planning Programme is managed by the Bangladesh Family Planning Board. In the district, Family Planning Programme was started in 1965.

Table - 4.7 Number of Qualified Doctors Assistance & Nurse of different Police Stations of the district.

Name of the P. S.	Total No. of Doctors	Total No. of Medical Assist	Number of Nurse
1. Bagerhat	21	2	14
2. Chitalmari	5	2	5
3. Fakirhat	6	3	5
4. Kachua	4	4	5
5. Mollahat	4	2	5
6. Mongla	3	2	4
7. Morrelgonj	8	3	5
8. Rampal	7	3	5
9. Sarankhola	4	3	5
Total	**62**	**24**	**53**

Source : Field Survey 1995.

4.4.2. Charitable Despensaries

These are mostly run by the Government and with scanty of medicines and doctors. Nine despensaries are located in the rural areas in the district. There are maintained by District Council & Union Council. The Government hospitals with charitable despensaries are mostly situated at village market places. Most of the dispensaries are attached with family planning clinic after liberation war in 1971. Most of the despensaries are located in remote areas. Analysis of the table it shows that the existing number of dispensaries is inadequate and majority of them suffer from shortage of medicine and doctors.

Table - 4.8. Total number of patient in different months of the year (1995)

Month	Indoor Patient	Outdoor Patient
January	1188	37495
February	1157	42231
March	2112	47914
April	2051	58066
May	1966	48021
June	1772	48996
July	1790	58603
August	1581	50029
September	1600	43881
October	1647	47397
November	1438	50349
December	1258	40456
Total year	**19560**	**573426**

Source : Field Survey of District Sadar Hospital, Bagerhat, 1995.

4.5. COMMUNICATION

4.5.1. Postal Services

The function of postal services is directly related to local population. The distribution and jurisdictions of these services are controlled by Government. The services have categorised on the basis of functional orders. These are three types, Head Post Office, Sub-post offices and Branch post office. From the field study, total number of post offices in the district are 115. Of which 9 are sub-post offices, and 106 are branch post offices. There is no head post office in the district. But head post office is located in Khulna city which is a Divisional Headquarters town.

4.5.2. Sub-post Office

It is collecting and distributing centre of various items of postal services. There are nine sub-post offices in the district. All the sub-offices are located in the police station headquarters. Geographically, post-offices are not situated at suitable locations for the good services of people. They are located at places according to their need.

4.5.3. Branch Post-Office

There are 106 branch post offices in the district. Of these, 23,20 & 14 are located in Bagerhat, Mollahat and Kachua, Police Stations respectively. Rest of the

police stations do not get better postal services. The average command area of a post office is 18 km^2 and serving with 12,000 people. It is clear that the postal services in the district are not available for all over the general people.

Eight Telephone Exchanges are situated in eight police station headquarters except Bagerhat Police Station, which is connected with district telephone head office. The telephone line is linked with capital and foreign countries by direct dialing. So, the telephone facilities are available in the police station headquarters. To make the telephone services available to the people of the district, some more public call offices are essential.

4.6. FINANCE

The economic development of any region is closely linked with the financial assistance to the farmers and others, and the facility can be available through bank or others co-operative organizations. In the district, there is no banks or financing agencies in the rural areas. Most of the banks are situated in police station headquarters. In rare cases, banks are located in important rural market centres. In the rural areas, people have to arrange their finance or funds from local money lenders or traders. Some of the cultivators and traders borrow many from the banks. Their percentages is very low. Officers & Service holders are mostly dependent on banks. From the field study, it is found that there are 89 scheduled banks in the district. These banks are run by the Government. Out of the 89 banks, the highest number of banks are situated in Bagerhat (27) Police Station, and the lowest number of banks is at Sarankhola Police Station. (Table - 4.9). The banks are not centrally located in the rural areas of the Police Station. So, the people have to travel a long distance to avail different facilities from of these banks. Other financial institutes are not available in the district.

4.7. OTHERS SOCIO-ECONOMIC FUNCTIONS

In the study area, a number of socio-economic functions are found in different market centres. Cinema halls & Video-halls are found in the market places. Electricity is the most essential for development of economy. But electricity in rural area is rare. Out of the 1075 villages, 238 villages are electrified (B.B.S. - 88), which covered only 22 percent of the total villages in the district. In the district, six cinema halls are situated in different commercial places. Four cinema halls are situated at two municipality towns.

Remaining two halls are located at Fakirhat and Kachua P.S. But these are located far from the centre place of the market area. Sometimes, people enjoy Video film-show, which is available in all the market centres. Another important socio-economic function is drinking water. Drinking water is generally collected from the tube-wells. The number of tube-wells in the district is 5,368 (B.B.S. 1981), which is very few as compared to demand. From the field study it is found that only one tube-wells is available for the whole village, as the underground water contains salinity. This is found mainly in the southern part of the district. The people use water from canals & rivers.

Table 4.9. Number & Percentage of Banks in the district

Name of P.S.	Number of Banks	% to total
Bagerhat	27	29.6
Chitalmari	5	5.6
Fakirhat	9	10.2
Kachua	9	10.2
Mollahat	4	4.6
Mongla	13	14.8
Morrelgonj	9	10.2
Rampal	9	10.2
Sarankhola	4	4.6
Total	**89**	**100**

CONCLUSION

The forgoing analysis reveals some of the important changes in the socio-economic conditions of the district. Some new roads and educational institutions have been established in recent years and communications systems have grown up. Due to the topographical and locational character, the district suffers acute shortage of industries and flood problems. These problems affect on economic conditions of the people. Density of population as well as growth of population are very high but the rate of literary is not significant. Marketing & transport facilities and supply of agricultural commodities are very poor. There are no storing facilities and large industries in the district. The transportation nodes and retail services are only concentrated in centre places. The transport facilities are not better in entire region. Most of the market centres are connected

with Kacha roads. Only P.S. headquarters market centres are connected with district town by pacca road. Majority of maket centres are situated by the side of rivers and roads. The health services and banking facilities are poor compared to the demand by the people.

So, it is clear from the above study that the pattern of socio-economic conditions has also affected the agrarian economy of the inhabitants. So, it is essential to identify the major problems, those have stood in the way of economic development of market centres of the district in general and the people in particular.

CHAPTER - FIVE

Characteristics of Market Centres

INTRODUCTION

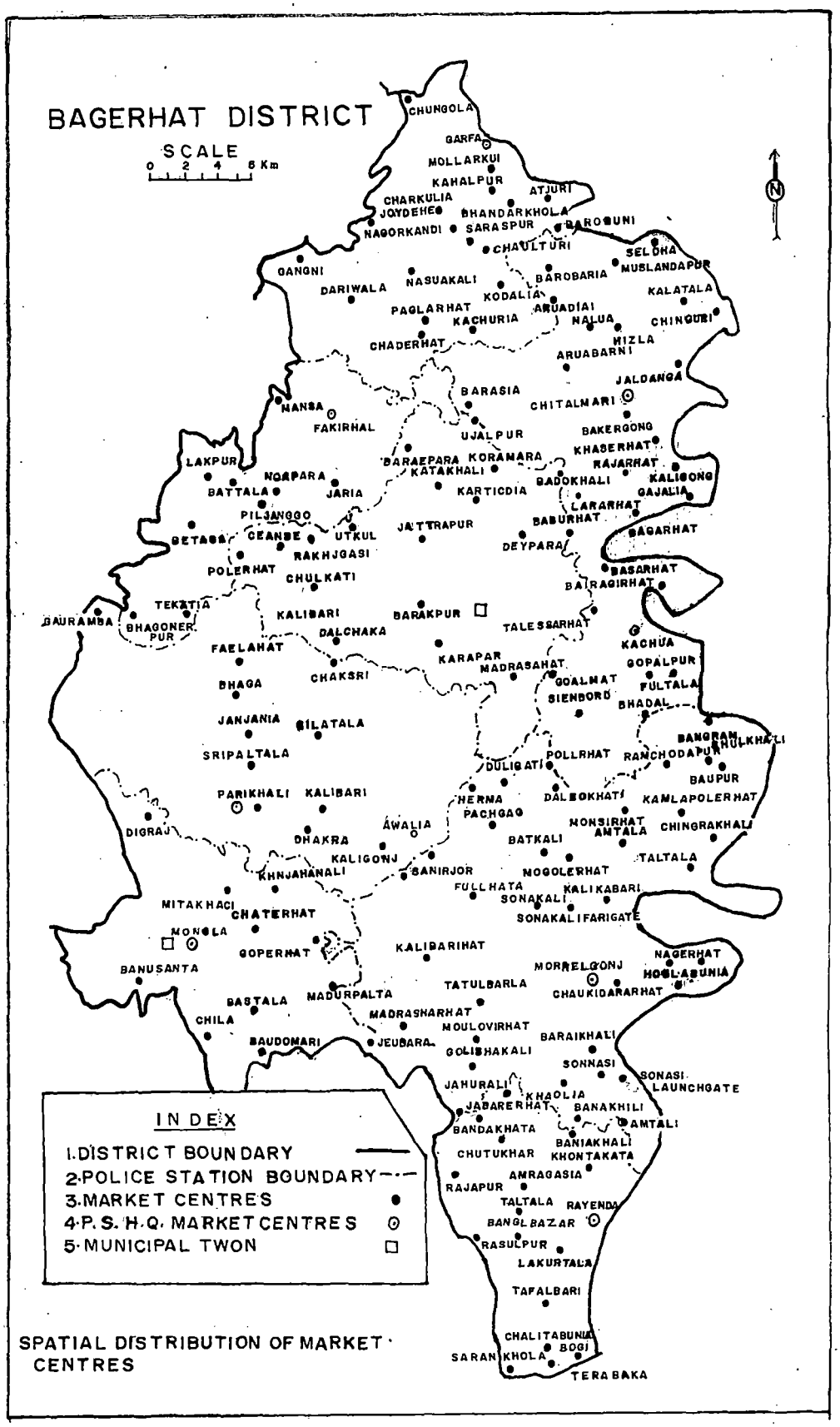
In the previous chapter, a detailed discussion has been done about the level of socio-economic functions and their characteristics.

Rural market centres formed the central place for major socio-economic activities, trades, transport modes and eventually developed as growth centres for rural development (Bormley, 1976 : Shrivastovas, 1983). As business and trade centres,rural markets contributed much to the economic development and agricultural production. Rural marketing system is also an integral part of rural development planning. In the study area. Nearly 90 percent of total population are directly engaged with the agro-based economy. The economy largely depends on agricuture and the economic conditions of the inhabitants have remained in precarious stage. The villagers sold their commodities in the local markets. So, the rural markets are most important in economical, political, social and cultural centres in the villages. So, it necessary to identifiy the charactristics of rural markets and marketing system. The characteristics of market centres are the core of study and need to be analysed. This chapter deals with classification of market centres and their spatial distribution pattern, density, growth, attendance & travel distance of consumers.

5.1. DISTRIBUTION OF MARKET CENTRES

Spatial distribution pattern of market centres

Location of 156 markets centres on 3959.11 km^2 has given rise to spatial form of pattern of distribution (Fig. - 5.1).From the geographical point of view, the spatial distribution of the market centres of Bagerhat district has been determined by applying statistical technique, the nearest neighbour analysis. This technique is used for the measurement of the actual straight line distance between the market centre and its nearest neighbour market centre and a comparison of the observed spacing with the expected spacing in a randomly distributed in the district, (Even, 45, Patle, 74). In the



SPATIAL DISTRIBUTION OF MARKET CENTRES

Fig—5·1

study area Rn. value is 1.16, which shows very close relationship among market centres.

Physical factors greatly contribute distributional pattern, as discussed earlier (chapter - 3). In the district, the low fertility of lands and deltaic character in the area are the causes of low density of population and consequently the lowest number of markets with wider distance among them. The interdistance of market centres at Rampal Police Station is 25.2 km which is much higher than (2.1 Km) the district average. Their distribution is clustered (0.79). The Rn Value of Mongla Police Station is very high (1.37). This value in other police stations varies from 0.79 to 1.28 (Appendix table X).

Table - 5.1. Rn coefficient in different Police Stations in Bagerhat district.

S.I.	Police Station	No. of Market Centres	Rn Value		Distributional pattern of Market Centres
1.	Bagerhat	19	1.03		
2.	Chitalmari	**14**	1.12		
3.	Fakirhat	**11**	1.17		
4.	Kachua	**13**	1.25	1.16	Random
5.	Mollahat	**20**	1.28		
6.	Mongla	**11**	1.37		
7.	Morrelgonj	**37**	1.23		
8.	Rampal	**12**	0.79		
9.	Sarankhola	**19**	1.25		
	Total	**156**	-		

In Bagerhat district, the Rn value is 1.16, except the forest area. This reflects the fact that spatial distribution of markets is random with an upward trend towards dispersed situation. Random distribution pattern means market centres developed hapazardly without any systematic planning, just responding to the need of the time and basing on the facilities available. These random distribution pattern in the study area confirms to the situation of whole of Bangladesh. (Sultana, 1982). Random distribution pattern is common in the underdeveloping economy, such as in Dhaka district (Baquee,1980) and in India (Dixit,1983). Table-5.1 and Figure 5.1 show the spatial distribution of the market centres in Bagerhat district. So, it may be inferred from 'Rn' value of 1.16 that the rural market centres have common characteristics of under development economy, it developed this planning as a adoption to the existing facilities of physical and environmental - like landform, water ways, flood free region, number of population and transport linkage.(*Fig-5.2*)

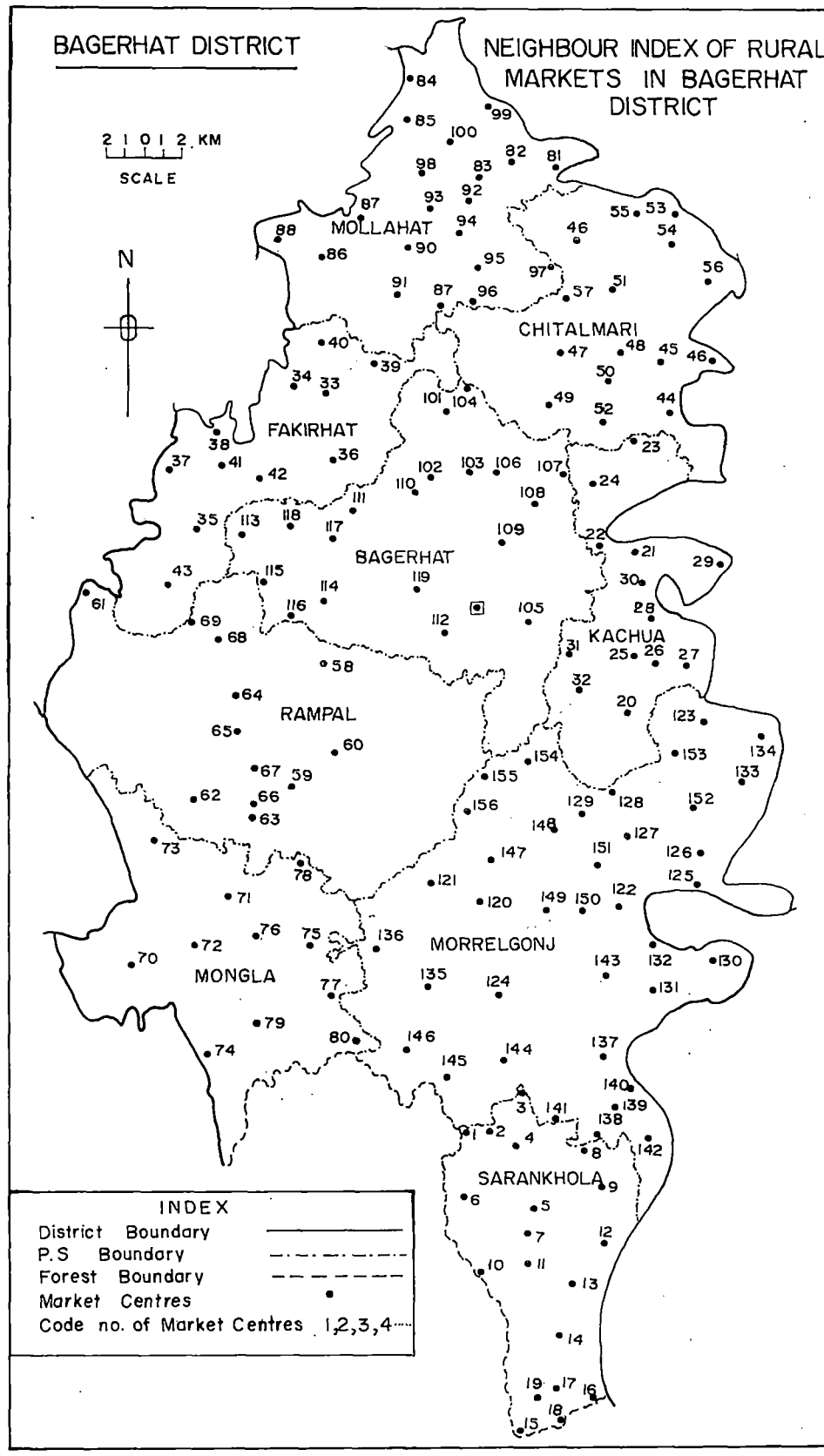

BAGERHAT DISTRICT
NEIGHBOUR INDEX OF RURAL MARKETS IN BAGERHAT DISTRICT
2 1 0 1 2 KM
SCALE
N
MOLLAHAT
CHITALMARI
FAKIRHAT
BAGERHAT
KACHUA
RAMPAL
MONGLA
MORRELGONJ
SARANKHOLA
INDEX
District Boundary
P.S Boundary
Forest Boundary
Market Centres
Code no. of Market Centres 1,2,3,4....

Fig- 5·2

5.2. CLASSIFICATION OF MARKET CENTRES

The classification of market centres according to the population size and functions is essential for an understanding of the relationship between individual market place and the organisation of these markets into a system (Mackin, 1972). The classification can be appreciated through the analysis of specific information for each market centre, concerning the range of road and services available at it. It can be approached through the number of market centres in the region concerned and their scale of operation and the size, nature of the area served by the market for various functions. Uktu (1969). Skinner (1965) has conducted fascinating studies of the periodic marketing system in certain part of the rural China. Tamaskar (1966) has classified the grain markets of the Sagar Doab plateau into bazar or 'hat' and mandi and ganj, as the primary, secondary and tertiary markets functioning as retail, wholesale and distribution activities respectively. The market centres of present study are also classified on the basis of the functional activities or criteria.

Another types of classification are retail and wholesale. Retailing and wholeseling are two types of business activities. The market orientation in retail system is only horizontal, while wholsale trading represents the vertical orientation (Dixit, 1984). Dixit classified three kinds of markets on the basis of retail activities. This classifications (i) Small retail centre (ii) Medium retail but small wholesale centre and (iii) Large wholesale centres.

In this study, classification of market centres is made on the basis of daily 'hat' attendance, quality & quantity of agricultural goods arrived in the markets, bid value of the markets, transport facilities, transaction of goods, types & standard of shops, number of days of meeting in a week etc. The number of attendances has a relationship with the value of commodity transactions and other factors of market centres. Here, 156 market centres have been classified into four categories (Table-5.2) such as; (i) A class markets (ii) B class markets (iii) C class markets and (iv) D class markets.

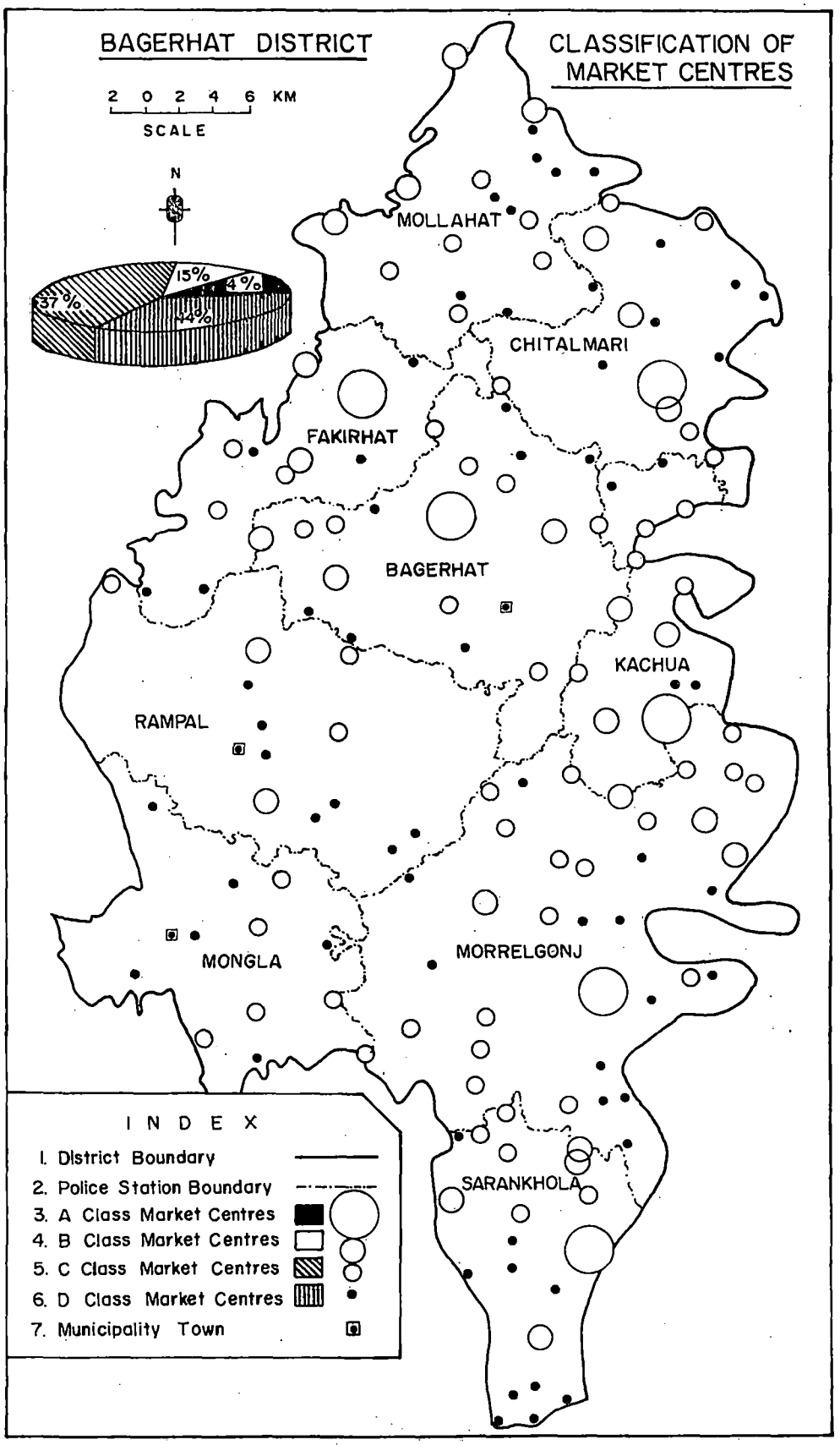

BAGERHAT DISTRICT
CLASSIFICATION OF MARKET CENTRES
2 0 2 4 6 KM
SCALE
N
15%
4%
37%
44%
MOLLAHAT
CHITALMARI
FAKIRHAT
BAGERHAT
KACHUA
RAMPAL
MONGLA
MORRELGONJ
SARANKHOLA
INDEX
1. District Boundary
2. Police Station Boundary
3. A Class Market Centres
4. B Class Market Centres
5. C Class Market Centres
6. D Class Market Centres
7. Municipality Town

Fig - 5·3

Table - 5.2 Categories of market centres according to attendance on the 'hat' day

Name of P.S.	Number of attendances				
	10,00 above	5000 - 10,000	3000 - 5000	3000 below	Total market
	(Number of the markets)				
Bagerhat	1	3	8	7	19
Chitalmari	1	3	4	6	14
Fakirhat	1	2	3	5	11
Kachua	1	3	5	4	13
Mollahat	-	4	7	9	20
Mongla	-	-	5	6	11
Morrelgonj	1	5	18	13	37
Rampal	-	2	3	7	12
Sarankhola	1	3	5	10	19
Total	**6**	**25**	**58**	**67**	**156**
Percentage to total	**4%**	**15%**	**37%**	**44%**	**100%**

A Class market centres

The markets having attendances 10,000 or more on the hat day are classified as 'A' class markets. There are six, ~~such~~ markets in the district (Table 5.2). It may be noted that the number of 'A' class market centres and their size & population have been increased during the last decade. An attendances in this market clearly means that very large volume of commodities get assessembled and naturally a large assemblege of people. Market of this category holds the rank of highest order in the market hierarchy. An increase in the number of 'A' class markets during the decade 1971-1981 is mainly due to the gradual development of transportation system. These market centres are mostly situated in the police station headquarters where transport facilities are good. Different types of commodities like cereals, vegetables, seasonal fruits, fibres etc. are bought to these markets by whole sallers, 'faries' and brokers, who are engaged in the re-distribution of commodities. 'A' class markets centres are : Morrelgonj, Fakirhat, Chitalmari, Badal, Rayenda and Jattrapur. Table-5.3.(Plate - 5.1)

B Class market centres

The 'B' class market centres make another important limbs of the marketing economy. These markets are usually situated in large village and enjoy some degree of nodality, in rural areas. They have taken an effective role in the development of the

Plate 5.1 Business transaction of chickens at Morrelgonj market centre

Plate 5.2 Birds selling at Chulkati market centre

region. These markets are mainly agricultural and dealt with goods like cereals, local fruits, vegetables, live-stocks and other products. The number of attendants in these markets varies between 5,000 and 10000 on a market day. These market centres are well connected with their hinterland. They have many permanent shops dealing with grocery, stationery goods, hosiary, cloths, and blacksmith products. Besides, there are sweetmeat and other food shops. Even the people from distance villages came to these markets for purchasing their daily needs. Businessmen and traders collect different commodities from these markets to sell in the next lower order markets. There are 24 (15%) B class market centres in the region (Table 5.2). The transportation network and the population of hinterland have played a vital role in the growth of these market centres (Plate - 5.2)

C Class market centres

The 'C' class maket centres have also developed in large village those are well connected with the surrounding areas. Attendances on the 'hat' day varies from 3,000 to 5,000 persons. A very few permanent establishments are found in each market centre.. (Plate 5·4). In some market centre flour mill, rice mill, saw mill are also found. Mainly water route with road facility are available in these market centres. A greater volume of commodities comprising mainly cereals, vegetables and livestock are transacted in these markets. The 'farias' and brokers collect various commodities from these markets to sell in the higher class markets. The producers of the surrounding areas brought their produce for sale and in exchange they purchase other commodities for their daily needs. Most of 'C' class markets are situated far from the police station headquarters. (Fig 5.3). The communication system of these markets is poorer than both A & B class market centres. But some of the C class market centres have nodal facility. About 58 'C' class market centres are distributed over the region, (Table -5.3). The highest concentration is found in Morrelgonj police station & the lowest concentrations is in Rampal Police Station (Plate - 5.3).

D Class market centres

The 'D' class market centres are mainly located in the remote village and naturally their frequency is twice in a week. The producers from neighbouring areas come to these markets to sell their products to the local people. The average attendance of these markets is less than 3,000 persons on market days.

Plate 5.3 Afternoon market near the National High way at Bhaga market centres

Plate 5.4 Vegetables selling at Goalmat market centre by local producers

Table - 5.3 Name of market centres of different classes

Name of the P.S.	A	B	C	D
Bagerhat	Jattrapur	Deypara, Chulkati Polerhat	Cianbe, Rakhalgasi, Barakpur, Madrasherhat Baburhat, Karticdia, Baroepara, Katakhale.	Badokhali, Ujolpur, Koramara, Utkul, Dhalchaka, Kalibari, Karaapara.
Chitalmari	Chitalmari	Barobaria Nalua, Bakergonj	Barasia, Seldha, Kaligonj Khaserhat	Moslendupur, Kalatala, Chinguri Hizla, Jaldanga, Karaapara.
Fakirhat	Fakirhat	Mansha, Noapara	Piljanggo, Lockpur, Betaga	Bhanganerper, Tekatia, Battala, Faltita, Joria.
Kachua	Badal	Kachua, Syenbord Talessorhat	Bairagirhat, Gojalia, Goalmat, Bagerhat,	Gopalpur, Lararhat, Rajarhat, Fultala Basharhat
Mollarhat	—	Garfa, Chungola Nogorkandi, Gangni	Borobuni, Kulia, Chalturi Charkulia, Nasuakhali, Chaderhat, Dariwala.	Mollerkul, Kahalpur, Bhanderkhola, Atjuri, Joydehe, Sorashpur, Kachuria, Paglarhat, Aruadehe.
Mongla	—	—	Khanjahan Ali, Chaderhat Madurpalta, Chila, Bashtala	Dikraj, Banishanta, Bauddomari, Goperhat, Mitakhali, Mongla.

contd...

Name of the P.S.	A	B	C	D
Morrelganj	Morrelganj	Daibaghati, Chingra-Khali, Kamlapolerhat Baniakhali, Fulhata.	Khaoalia, Gulsakhali, Herma, Moulobirhat, Sonakali Polerhat, Mongolerhat, Pachgao, Batkhali, Munshirhat, Ramchandrapur, Shaulkhali, Boulpur, Banogram, Hoglapasha	Amtole, Sannashi, Baraikhali, Sonakhali-Launchgate, Chaukidarhat Nagerhat, Taltala, Kalikabari, Douligali, Sonirjor, Kalibarihat, Amtolahat, Sonnashi.
Rampal	—	Failahat, Perikhali	Gouramba, Kaligonj Chakshere, Gilatala	Bhaga, Jonjonia, Dakra, Srepaltala, Kalibari, Awolia.
Sarankhola	Rayenda	Tafalbari, Baniakhali, Rajapur	Jahurali, Bandakata Sodukha, Khontakata, Amragasia,	Taltala, Rasulpur, Banglabazar, Lakurtala, Khuriakhali, Chalitabonia, Bogi, Jabberhat, Terabaka, Sarankhola.

Plate 5.5 Larvae Prown selling at depot in Fakirhat market (Sellers counting their 'larvae' prown in depot shed)

Plate 5.6 Bus going to district headquarter from Amragasia 'hat" (Rickshaw van awaiting market Passengers)

In these markets, shops or establishments are generally temporary. Such markets sit in an open space in certain part of the village. There are very few number of grocer's shops for supplying the daily needs of the local people. This markets are the places of primary stage of marketing. The largest number (67) of markets centres of the district belongs to this category, and their percentage is 44 to the total (Table-5.2 and Plate 5.4).

5.3. DENSITY OF MARKETS

The density of market centre per 100 km^2 is not uniform all over the district. The density varies from one area to the other as the growth of these markets is not actually uniform over the region. Growth of market centre depends upon the flow of goods, transportation system, number of buyers and sellers etc. The density of market centres on the basis of political division shows an interesting figure (5.4) in the district.

Table - 5.4 Density of market Centres in different Police Stations

Police Station	area in Km ^{2}	Number of market centres	Merket centres per 100 km^2
Bagerhat	272.73	19	7
Chitalmani	192.00	14	7
Fakirhat	160.68	11	7
Kachua	131.62	13	10
Mollahat	187.88	20	11
Mongla	186.89	11	6
Morrelgonj	460.91	37	8
Rampal	355.46	12	3
Sarankhola	162.61	19	12
Total	**20289.20**	**156**	—

The communication system has a profound effect on the growth of market centres in the district. A large number of market centres is characterized by agriculturally developed and the concentration of population is favouring the density of market centres in the study area. The district can be divided into four categories of density of markets viz. very low, low, moderate and high. The lowest density of markets is found in the Rampal Police Station (Table 5.4 & Fig. 5.4) due to poor road network and rugged terrain. Lack of accessibility has become the most important factor for the growth of the rural markets in spite of having a rich hinterland.

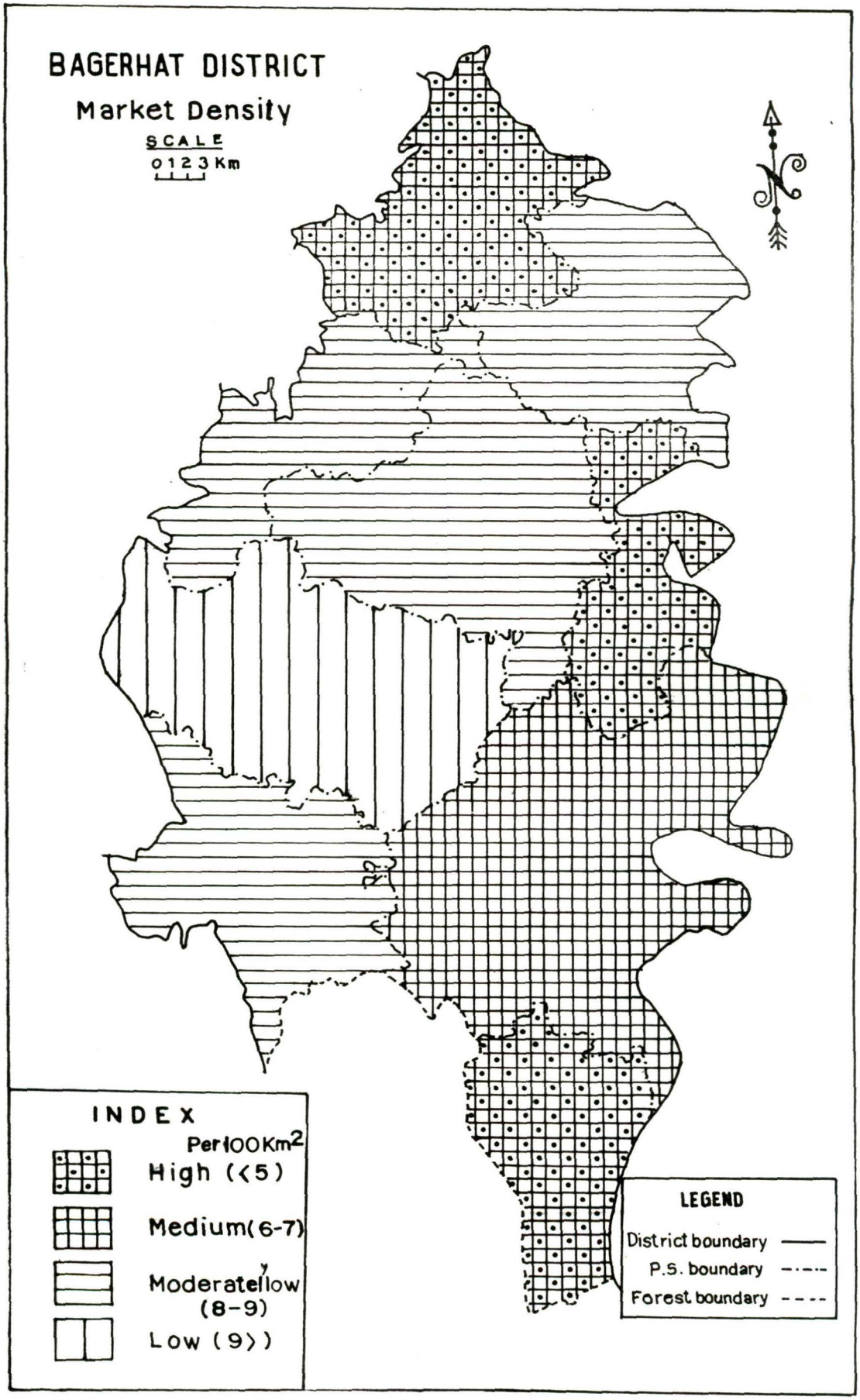


Fig-5.4 Ref Table No. 5.5

Khulna city is being located nearby so, the people avail regular marketing from the city and the buyers from rural areas have greater attraction to go to the city for various purposes. So the people avail all the opportunity from this city. The table 5.5 shows the density of market centres in nine police stations.

Table - 5.5. Number of police station in the different categories of density of the markets

Range of density/ 100 km²	Number of P.S.	Categories	Name of police stations
< 5	1	Low	Rampal
6-7	4	Moderate low	Bagerhat, Chilamari, Fakirhat, Mongla
8-9	1	Moderate	Morrelgonj
9>	3	High	Kachua, Mollahat, Sarankhola.

Morrelganj has 37 market centres and it has moderate density of markets. Good canals systems have helped the developement of market centres. Three police stations are in high category i.e. Kachua, Mollahat & Sarankhola. Sarankhola Police Station possess very high market density in the district. (Table 5.5).

5.4. ATTENDANCE OF CONSUMERS

The attendance of consumers in the market increases in August but falls a little in the other months. In October, the attendance is almost equal to that of the proceeding month. The attendence improves in November and December after the sowing operations of *boro* crops, and it reaches its maximum in January, particularly in its first week. In the rainy months of July, August and September, the movements of villagers have been restricted due to poor road condition and their pre-occupations in agricultural operations. In February also, the attendance is adversly affected by the busy season of the paddy harvest. In March, April and May, the attendance improves much as the *rabi* crops are offered for sale in rural markets. In June, the attendance dimnishes since the farmers devote themselves in preparing the field for the *kharif* crops.

Plate 5.7 Potteries shop on foot path at Nalua 'hat'

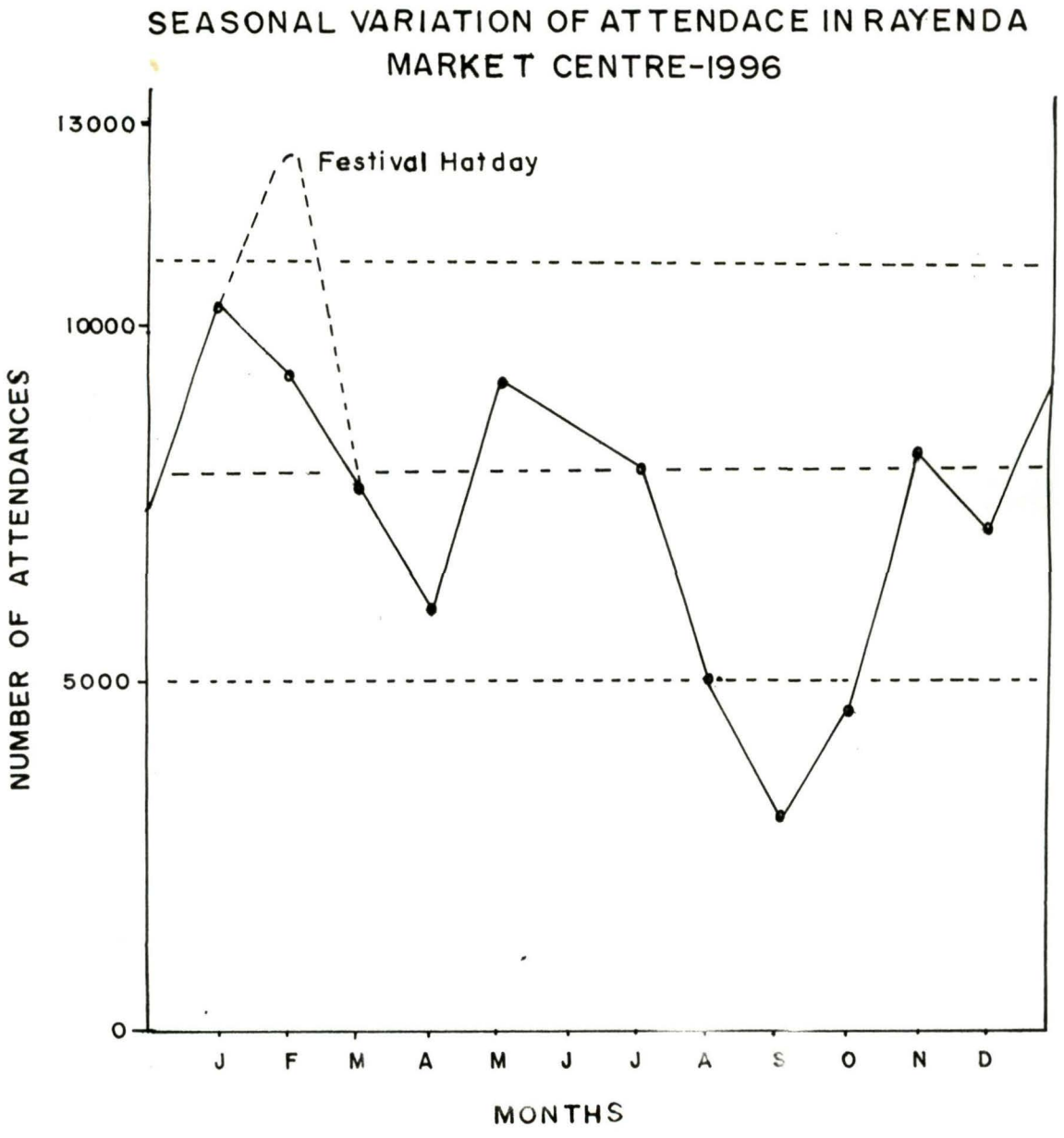
Plate 5.8 Used clothes and shoes selling temporarily at Chila market

On making a local inquiry & questionnaire, it has been revealed that the buyers, attend the markets from area covered by radius generally of four kms approximately. The villages of the peripheral zone also attend market which they feel or find convenient to themselves at any time. The hinterland of big size markets is upto five to twenty km in radius.

The attendance in markets differs from one market to other on the basis of the hierarchy or level of markets and season to season in the year (Islam, 1982). It has been seen that attendance is more in the harvesting season of crops or vegetables specially in winter, because the district is potentially rich in agriculture and varieties of crops are produced at that time. The number of attendances increases during the period of special occation or Eid festival (Diagram 5.5). The number of attendance comprises sellers, middlemen, village producers, wholesellers and small cultivators. Similarly, major portion of buyers are domestic consumers, middlemen and producer cultivators. It is found from the study that the mumber of traders and middlemen is less in lower class markets, where, majorities are small cultivators and domestic consumers. Whereas, higher class markets the number of middlemen and traders are comparatively high (Islam, 1982). The wholesellers after purchasing the commodities from higher order markets they used to brought to lower order markets for sale on the market days of the week. (Plate 5.1). In middle class markets, majority of visitors are small producers of agricultural commodities and domestic consumers. Many traders and middleman came to the markets either for sale or purchase of agricultural commodities. Some portions of the visitors in the rural markets come for social visit, recreation purposes, pleasure trips and so on. Moreover, the markets in the villages are the centres of many socio-economic functions. So, many people from neighbouring villages came to the markets for availing such facilities. From the field study in different months, it is observed that the attendance in the markets is not equal in all the seasons. The graphs & table 5.5 which show the yearly attendances of Rayenda market centre as a sample show that the attendances of Rayenda market centre fluctuate in defferent months of the year.

Table - 5.6 Seasonal variation of attendances in market centres of Rayenda.

Months	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Attendance	10200	9400	7810	6000	9400	8500	7100	5000	2900	6500	8200	7300


SEASONAL VARIATION OF ATTENDACE IN RAYENDA MARKET CENTRE-1996
13000
10000
5000
0
Festival Hatday
NUMBER OF ATTENDANCES
J F M A M J J A S O N D
MONTHS

Fig— 5·5

5.5. PROBLEMS OF MARKET CENTRES

From the study, it has been found that many problems in the market centres have been observed in the district. The major problems of the market centres may be described as follows:

Housing

Housing problem is faced by people in the market centres, especially those who migrated from neighbouring area for trading. They live in market place in lieu of monthly rent. The people, those who are working as day labours, farm service business and other activities, creating problems in the market centres. Majority of houses are semi permanent (kacha) and there are made of local wood. So there may be damaged by cyclone or storms. Some high level market centres have pacca or semi pacca houses in the market place. (Plate - 5.9).

Water supply

There is an acute shortage of fresh water in the market centres. The tube-wells are not sufficient in the market centres to cater the demand of the people. Tube-well water has salinity which cannot drink. The people also use pond & canel water. The shortage of drinking water can be solved by constructing water tank and supply filteration water at market centres.

Road condition of markets

Roads in the markets are not maintained properly. Roads in the market centres are very narrow except the National high way. Most of the roads are either metalled or kacha. So, in summer season, these roads are flooded by rain or tide water and become a muddy. It is problem for attendance (Plate 5.10).

Sanitation problems

Drainage facility is not available in the rural markets and hence has created sanitary problems. This should be solved by constructiong or providing drainage facility. Waste disposal / sewage facilities are not adequate. Public lavatories and urinal points are not available in the markets. It can be constructed close to population congestion. And, so,

Plate 5.9 'Kacha' house in Baniakhali market centre

Plate 5.10 Clay road of Rajapur market (inside lane condition)

more urinal points should be established in different parts of the market place for consumers.

Burden of review system

The 'Izarader' take lease for one year of a `hat' from Government authority. He manage the hat with the help of many sub collectors. These collectors collect the revenue from the sellers on 'hat' day. The sellers paid 4% of his total amount of sale. This 4% revenue is burden for poor sellers. Some producer -cum- sellers could not pay this revenue for his marginal profit. From the field study, it is observed that both the sellers & buyers, are not agreed to pay 4% revenue to *Izarader* and are always avoided to pay this revienue.

Lake of Planning

Vegetables, fruits, fish & temporary grocery shops are located at the same place in major market centres. So, the markets are congested. So a spacific area should be provided for individual goods. Planning to develope the market place for raw good seller is urgently needed. (Plate 5·12)

CONCLUSION

From the discussion, it can be concluded that the market centres of Bagerhat district is not sufficient to serve the entire people and the existing markets are not evenly distributed for better services to the inhabitants. The distributional pattern of market centres is not scientific plan. The physiographical conditions and distribution of river systems control the density of market centres in the region. The hierarchy of markets depends on the standard and availability of larger and higher number of functions. During the last few decades, some new markets had been grown but their standard is remained same. The growth of markets were very high during the middle part of this century. But the standard & improvement of these markets are not satisfactory due to different physical and cultural problems. During 1951-60, the number of market centres had been increased insignificantly whereas, during 1960-80 it had been increased rapidly.

Four categories of market centres have been classified in the district on the basis of various parameter. Each of this class has individual standard. These market centres

Plate 5.11 Banana shop at Karapara market centre

Plate 5.12 Fruits cum vegetables shop at Fakirhat market

serve at least three purposes, such as local exchange, internal trade and several central place functions. In this classification, majority of market centres are in low categories. In the district, the distributional pattern and spacing of the market centres suggest that all the market centres are randomly distributed. The attendance in the markets is mostly seasonal. Market attracts rural people for their traditional locational importance. It is a source of recreation to some people of the rural areas. It is the meeting place of many friends, relatives and like. All these activities are high in dry season. The rural markets are not only serve as growth or economy but also as socio-cultural centres for their surrounding areas. From the functionál character and economic status of the markets, it is found that urbanisation is lagging far behind, because most of the markets are functionally low. The rural economy is purely agricultural and there is no scope for industrial growth, due to the lack of raw materials and underdevelopment transportaions. Generally, rural economy rotates on the local markets. Yet, the rural markets serve their command areas as central places and thus, the whole district can be developed by developing these markets with the proper planning or setting up new functions in the market centres. Thus, the economy conditions of the inhabitants can be raised by developing these market centres.

CHAPTER - SIX

FUNCTIONS & STRATEGY FOR DEVELOPMENT OF MARKET CENTRES

INTRODUCTION

In this chapter, an attempt has been made to bring out problems of functional analysis of the market centres. An assessment of functional characters of market centres have more and more complex. The functional interpretation of any market centre is a significant aspect of market study, as it provides a good basis for the regional planning. The object of this chapter is to give a basis for the functional characters of the markets of Bagerhat district in relation development of the people.

The chapter has been divided into a number of parts and the functional characteristics have been discussed in each part. Broadly, in the first part, the days of market centres have been analysed and discussed. In the second part, the frequency of market days in a week are computed and analysed. The third part of the chapter deals with relationship among market centres. population, area of villages of each police station. Lastly, the identification of functional role of markets in the study area has been discussed.

6.1. GROWTH OF MARKET CENTRES

In the study area, the congregation of Government offices of different institutions has helped the market to flourish as a nerve centre of the whole area, yet, there are some factors responsible for the growth of market centres. Generally, three types of locational and four types of social factors have helped to grow a market centre (Jana-78). These following stages are :

Locational factors :

(i) The nodal points of transport network which help in quick marking of necessary commodities, including pershiable agricultural goods to the nearest market zone, outside area.

(ii) At a place where density of population is very high and aggregate demand

of goods is optimum.

(iii) At the centre of its service zone which ensures minimum aggregate travel distance.

The social factors are :

(i) The government or non-government institutions have been helped within half kilometres radius from markets.

(ii) Density of population/km^2 increases, where the new market centres would be established.

(iii) The volume of trade has increased. The number of shops and the marketing hour have increased also.

(iv) The market has got many functional centres within a close-space in the market place.

Besides the market centres in the study area have grown political factors.

The markets of different police stations at Bagerhat district had been established to obtain information and asses the general development of the markets of the region. Majority of markets have grown and developed on cultural, technological and infrastructural factors. Tremendous growth of population along with changes of growth paved way to new markets. Some of the rural markets from their modest beginning have grown to the higher order rural markets and ultimately to a stable market (Berry - 1967). Table - 6.1 shows the growth and development of markets in different police stations in the district. It is clear from table (6.1) and diagram (6.1) that the growth of rural markets is different in nine police stations. It has also been observed from the history of market centres that at the initial stage of establishment, there were only one and two shops. According to the evidence and information available regarding the origin of the market centres that the growth of markets is not significant in the 1500 - 1850 A.D. Although, the markets have been first started appearing in 1512. In a span of 110 years (1880 - 1990) a large number of markets has grown up in the district. (table 6.1). Nearly 152 markets have been established in this period. Only two markets were established during 1700 - 1800 and other two markets were grown during 1800 - 1850 A.D. The table gives an idea about the percentage of growth at different times in the district. The number of market centres increased during the last five centuries was not

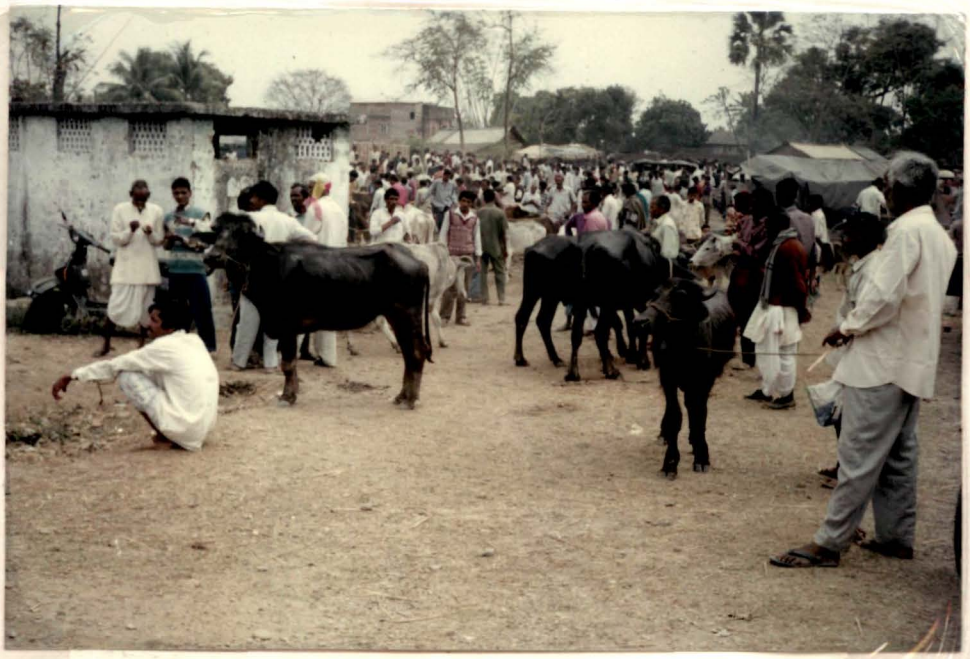


Plate 6.1 'Go-hata' (cattle market) at Chitalmari market

Plate 6.2 Farmer buying cow from Baniakhali market

uninform. Most of the markets have been developed through the inatiative of the Government and non-Government organisations.

Table 6.1 Growth of Market Centres

Year	Number of Market Centres									
	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sharankhola	District Total
>1700	1	-	-	-	-	-	-	-	-	1
1700 - 1800	-	-	-	1	-	-	-	-	-	1
1800 - 1850	-	-	-	-	-	-	1	-	1	2
1850 - 1900	5	1	-	2	4	1	2	5	2	22
1900 - 1950	3	3	3	6	4	4	13	4	4	45
1950 - 1995	10	10	8	4	12	6	21	3	12	85
Total	**19**	**14**	**11**	**13**	**20**	**11**	**37**	**12**	**19**	**156**

It is observed from table 5.1 that the highest growth rate of market took place during 1961 - 1980. During 1700 - 1995 A.D., the highest growth of markets was recorded from 1950 to 1995 A.D. About 85 markets have been established during this period. During 1961 to 70 A.D, only 25 new markets had been grown and from 1971 to 1980, 30 markets had been grown in the district. So the growth rate of new market centres had been decreased. (Fig - 6.1) From the field study, it has been found that many old markets had been abolished during the last 4 decades for political reasons and lack of communications facilities. T able 6.2 shows the index of growth of markets (in percentage) in the district.

Table 6.2 Index of Growth of Markets (in %)

Year	(in Nine Police Station)									
	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sharankhola	District Total
> 1850	100	-	-	100	-	-	100	-	100	100
1851-1900	600	100	-	300	100	100	300	100	300	650
1901-1950	900	300	100	900	200	500	1600	180	700	1750
1951-1995	1900	1400	367	1300	500	1100	3700	240	1900	3900

From the field survey, it is observed that Karapara market was established in 1512 A.D. and this market is the oldest of all the police stations. The market is about 5

Plate 6.3 River side market centre on Bhaleshwar river(Tafalbari market)

Plate 6.4 'Baishakhi' fair at Mansha 'hat'

km. away from Bagerhat district town. In this market, two large fairs are held in the winter season. (Plate - 6.1) Daypara market was established in 1880 A.D., which is located in Kachua Police Station. It was famous for potteries and cattles purchasing (Plate - 6.1). Tafalbari market was started in 1918 A.D. with only one permanent grocery shop at Sarankhola Police Station. Similarly, Goperhat, Bueddomari and Burirdanga market at Mongla Police Station are very old. These markets are situated at the bank of rivers. Some markets of the study area are located at the forest boundaries. The markets in Sarankhola and Mongla Police Stations are adjacent to the forest boundary and dependent on workers, wood-cutters and forest employees. These markets have been established before the last two or three decades i.e. after 1970 A.D.

The market centres of Morrelgonj Police Station are very prosperous (Fig-6.1). The Morrelgonj market centre was established at 1849 A.D. It owes its foundation to Messers Morrel. Morrel (land lord) started trade in the forest zone. He establised a trade center in the bank of the Panguchi river. It is called Morrelgonj market. The market commercially and traditionally important in southern part of the district. Daiboghati market is 15 km away from Morrelgonj market and it was established before 1916 A.D. This market is famous for cattle 'hat' for 4 decades. The market has a charitable hospital, established in 1917 A.D. Jewdara, Fulhata & Morrelgonj markets are very old in Morrelgonj Police Station.There were three markets before 1900 A.D. After 1950, the market centres grew up rapidly owing to road connection. Besides, the market centres were fostered by the needs of different kinds of Government offices, and institutions of this police station. Only 13 markets grew during 1900 - 1950 A.D. (Table 6.1) Chitalmari market centre situated on the bank of Madumoti river took its beginning in 1879 A.D. It is a large market of considerable importance and huge trade cattle is carried on here. The market is famous for a spectacular animal fair held in the end of March every year and the fair is as old as 100 years (Plate 6.2). Kaligonj and Jaldanga markets were established in 1920 & 1909 A.D. respectively in Chitalmari Police Station. Jaldanga market is important for coconut and nuts, during September to October months. (Plate - 6.3).

In northern part of the district, Fakirhat market is a large *bazar* and it carries on a considerable trade in rice, betel nut and coconut. This market is exceptionally important for gur (molasses). It has police station headquarters offices and triangular route of

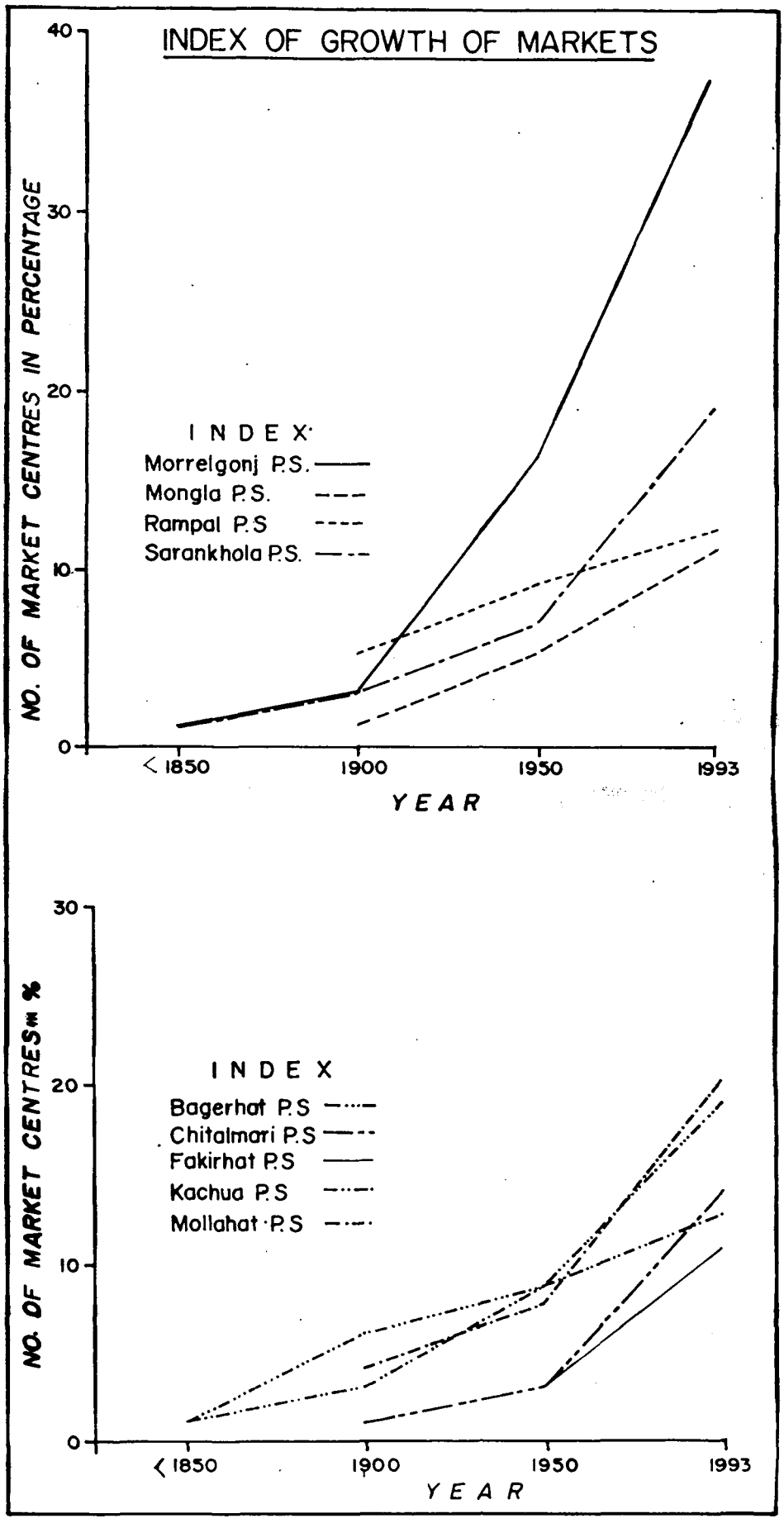

INDEX OF GROWTH OF MARKETS
NO. OF MARKET CENTRES IN PERCENTAGE
40
30
20
10
0
INDEX
Morrelgonj P.S.
Mongla P.S.
Rampal P.S
Sarankhola P.S.
< 1850
1900
1950
1993
YEAR
NO. OF MARKET CENTRES in %
30
20
10
0
INDEX
Bagerhat P.S
Chitalmari P.S
Fakirhat P.S
Kachua P.S
Mollahat P.S
< 1850
1900
1950
1993
YEAR

Fig. 6·1

Plate 6.5 Nut 'Arat' (Godown) at Chulkati market centre

Plate 6.6 Merchants purchasing coconuts at Lokpur market

junction (markets). This market is famous for retailing and whole sale trade. Another important market centre in this police station is Mansha *hat.* An old Government high School and post ofice are located in Mansha market. An Old famous temple of, 'kali' is also situated in the market. This market is important for trade of rice & Jute. Piljonggo(1913 A.D.) & Takatia (1944 A.D.)markets are important for historical place of this area. Piljongo market has an old Charitable hospital. After the formation of 'upazila' system in 1985, some new markets were established along the National High ways of this Police Stations (Plate- 6.4). The perikhali market centre is 25 Kms away from Bagerhat town, it is a very old market and local trade centre is based on river ways. A very old Charitable hospital (1906) and a famous high School are located in the market centre. Parikhali *hat* is an important for betel leaf and coconut. This market centre was established about 130 years ago. (Plate - 6.5 & 6.8).

Other old markets in this police stations are Gilatala, Failahat and Jonjonia. These were established in the 1888, 1882 and 1891 A.D. respectively. These three markets are important for famous high schools and institutions since the very beginning. Kachua market centre is an old police headquarters of the district. It is located at the confluence of the Bairab and the Madumoti rivers, it is located about 9 kms. east of Bagerhat district town. Now, it is important for police station headquarter, Kachua market owes its foundation to Mr. Hanchul in 18th century for the rules of Sundarbon zones (Bari - 1978). Most of the markets of this police stations were established in the first half of 19th century. Garfa market is located on the bank of the Madumoti river. (Plate - 6.6). It is connected to Bagerhat district town by national high ways, which is far, about 40 kms. In this market, the police camp was established in 1867 A.D. Garfa market is historically important for charitable dispensary (established 1896 A.D.) and W.H. High School (established 1938) . A college, telephone exchange, subpost office, district council, 'Dak' Banglo were established in the markets after the liberation war in 1971. Gangni, Chungola and Nasuakhali markets were established before 1900 A.D. Gangni market in Mollahat P.S. is important for a *bidi* factory in Mollahat P.S. About 3 thousand *bidi*-workers are employed in these factories. (Plate - 6.9 & 6.10).

From the field survey, it is found that a few small sized markets have grown during the last 50 years. A close analysis of table No 5.1 reveals the growth of market centres in the district during the decades 1961-1970 & 1971 - 1980. The market owes their

Plate 6.7 Engine boats carrying the commodities at Morrelgonj market

Plate 6.8 Coconut oil mills at Signboard market

development with the increase in population. Thus, it signifies a close relationship between an increase of population and market centres and also the increase of shops. This change occurred in a great span of time (Berry,1967). With the increase of population, the new markets set and existing market developed. Next, the size of market continues to grow. In another aspect modernization has exerted a different spatial features on the market growth. Modernization, according to Barry involves gradually commercialization of the agrarian economy and increasing shoping done by the house holds (Belshaw,1965). Marketing system is commercialised and the rural markets are transformed into stable markets. Such marketing process has been observed both in India and China. This process in India led Singh to formulate a stability theory (S.M. Singh,1965.) Similarly, Skinner (1964) relates this change in China as the peasants are more to more stable and larger rural markets which are connected with a higher order centres to provide food, handicrafts and other exotic goods for the growing rural population (Skinner , 1964), these characteristics are found in this area for growth of markets.

It is concluded that in the study area, the traditional change of population and growth of market centre are taking place simultaneously, Traditional change of markets according to this population growth has increased and number of shops are rapidly increasing in the police station headquarter marked centres. However, from the discussions, the growth of market centres is satisfactory in different police stations.

6.2 RELATION BETWEEN AREA AND POPULATION OF MARKET MAUZA

Relation between the area of market 'mauzas' and their population size is an important aspect in market study of a region. It tells about the distributional pattern of the population of those spaces. Scattered diagram (Fig - 6.2) showing the population and area of different market mauzas in nine police stations its reveal a good relationship between these two variables. On the basis of area and population the diagram has been divided into five levels. The population in the first level is below 2000. The second level of market centres have population in between 2000 and 3000. There are a few number of market centres in the level compared to first level. The population of third level is very high which is in between 3000 and 8000 population. And the population of 4th level is in between 8000 and 110,000. There are only four markets in this 5th level.

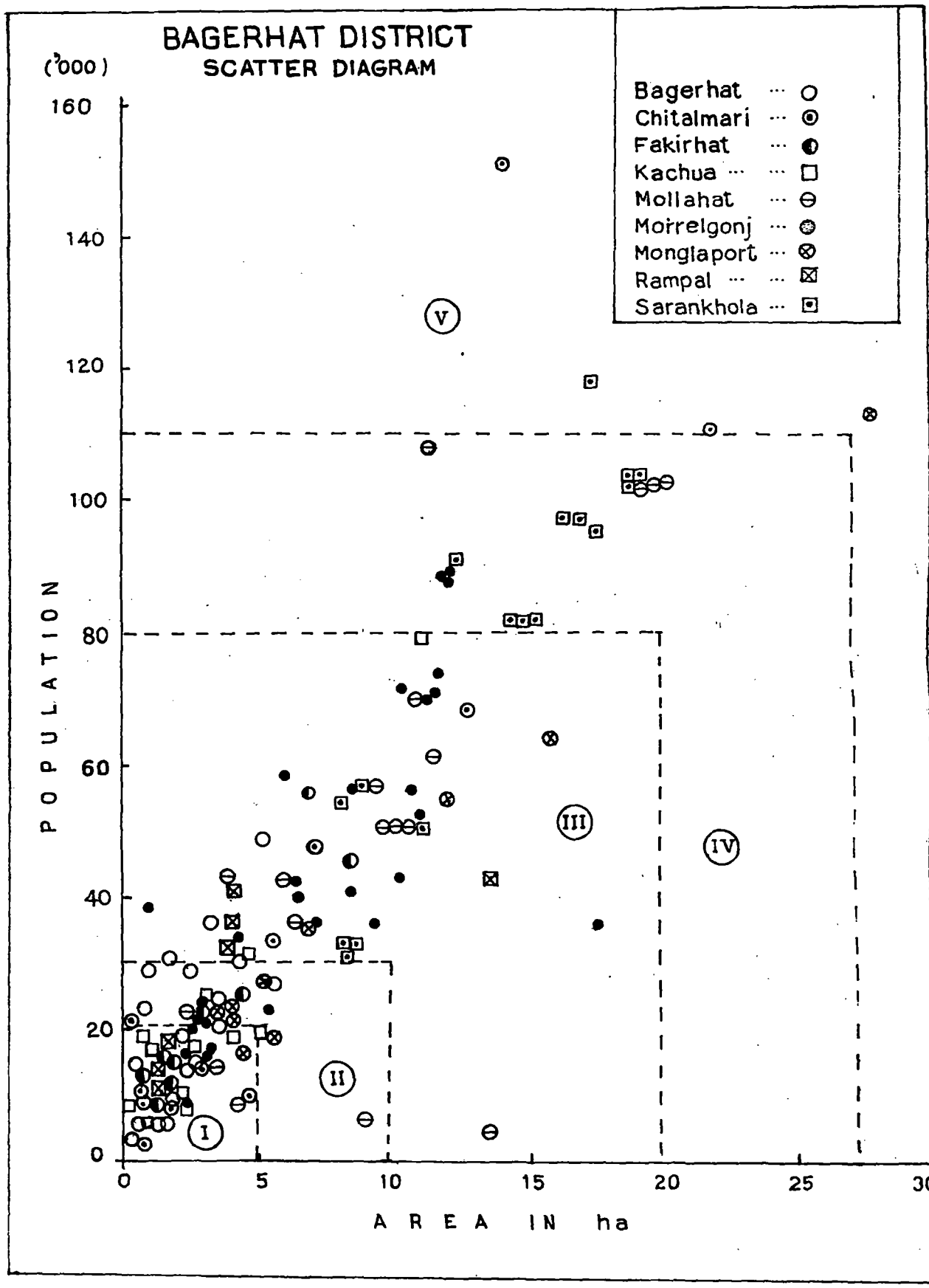

BAGERHAT DISTRICT
SCATTER DIAGRAM
('000)
Bagerhat
Chitalmari
Fakirhat
Kachua
Mollahat
Morrelgonj
Monglaport
Rampal
Sarankhola
160
140
120
100
80
60
40
20
0
POPULATION
0
5
10
15
20
25
30
AREA IN ha
I
II
III
IV
V

Fig. 6·2

whose population is in between 110,000 and 160,000. The table 5.1(Appendix table-I) gives a clear picture of the relationship between area and population of market mouzas.

Market and Population Ratio

Market grows always in a certain ratio of population. Area is always fixed but the population increased gradually. It is dependent on the trade and socio-economic functions available in the market centres. An economic development increases with the frequency of periodic market & number of permanent shops. And it comes to a daily market due to economic development. Developed areas have more frequency in market activities. (Jana,78).

In reference to Bangladesh, all over the rural areas; market centres grow in proportion of its population growth (E. Haque, 95). This proportional ratio of market & population growth have always maintained a relationship. In the study area, for measuring the markets, and population relationship the following formula is used. $P \propto m$, or $K = P/m$. here P = population, and m = market centres. $\propto$ = different factors, which increased & decreased with the number of population. The number of population varies nearly ten thousand per market centre. It is found that if the population is increased, naturally the new market centres have established. Some factors determine the number of markets or the frequency of market days. Again, growth of market centres depend on trade, commerce & business. When the trade decreases the market centres decreases on population ratio. Similarly, the socio-economic functions and occasionally placement of economical functions have been established in new market centres.

From the field study of two police stations e.g. Mollahat & Sarankhola,it has been found that the local products have grown sufficiently in different corners of the villages and in both the P.S. the market are traditionally developed. Mollahat P.S. is rich for local fish & specially shrimp. Shrimp is economical product for foreign export goods. So, the farmers sale their product in nearest processed shops. At the same time, Sarankhola P.S. is important for wood business centres. Many markets were established adjacent to the forest offices. The forest workers purchased their commodities from their adjacent market centres. Thus, this traditional & economical factors have dicreased the population ratio in the markets of these two P.S. of the district. It also reveals that in the district, the population &markets ratio is 9174, but in Sarankhola P.S. is 5677 and Mollahat P.S.

5,836. Comparing the Jalpaiguri district in India, the population & markets ratio is 10,777. It is higher than the study area. (Jana , 93).

6.4. PERIODICITY OF MARKETS

The rural markets in Bangladesh, as in most other traditional peasant society of the world are periodic (Belshow, 1965, Skinner, 1967, Hodder, 1965) and held either weekly or biweekly. Periodic market takes place in the district multiples time of two or three days in a week. Market may thus occur on the morning, evening or wholeday. It is the fact that most of the local markets sit two days in a week. There are very few daily markets in rural areas in the district. (Fig - 6.3). For the measuring of periodicity, these markets can be divided into two broad categories viz. (a) frequency of market days and (b) weekly frequency of market meetings.

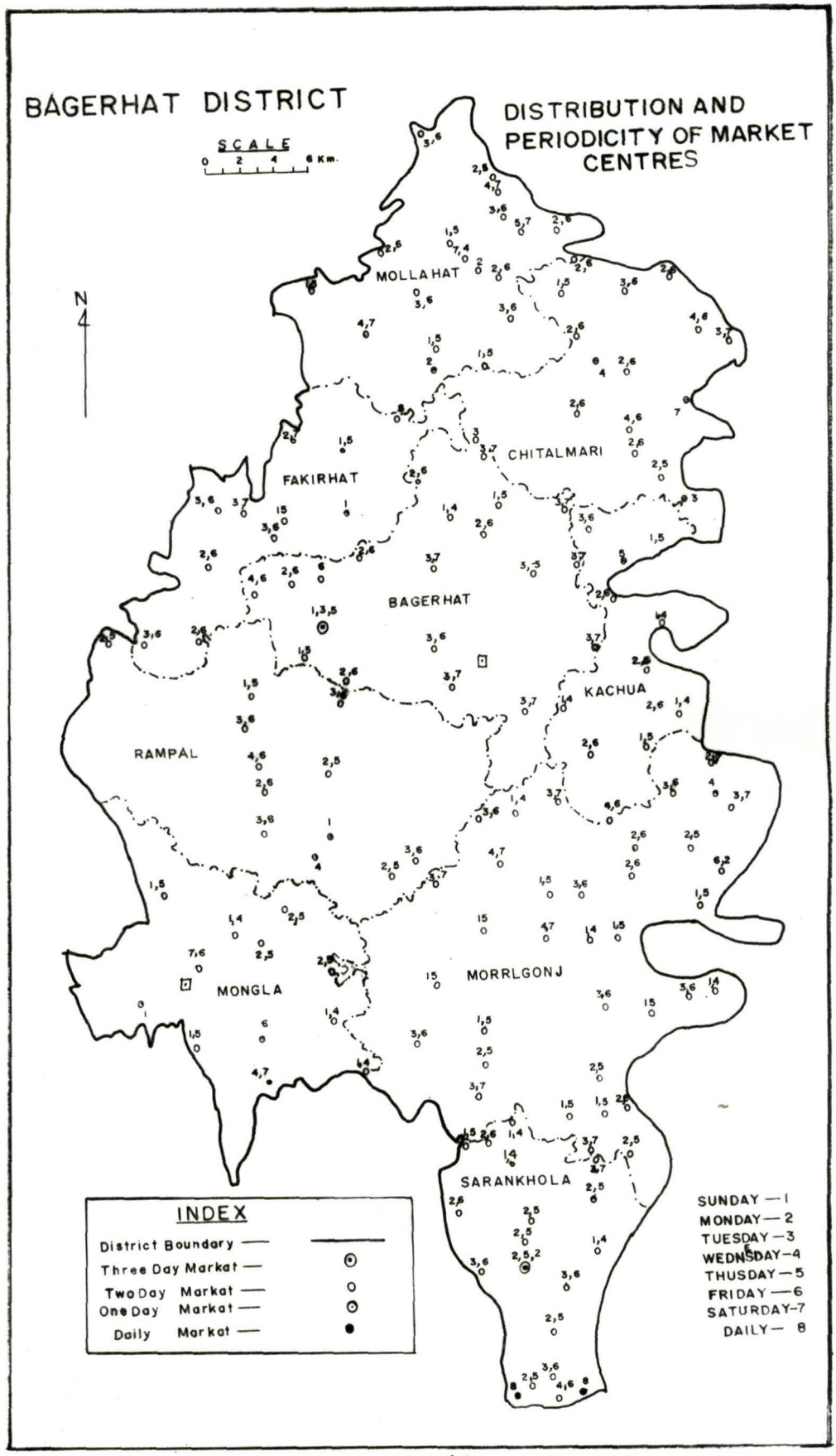
6.4.1. Frequency of market days

There is no specific character of periodicity of these markets as it is seen in other countries like U.S.A., U.K. & China. The agrarian economy of the district is very poor. The people are not able to buy their essential goods and commodities everyday so the market sit bi-weekly or more.

In the district, some of the markets sit once, twice and more than thrice day in a week. More than 80% of total number of markets sit twice in a week and nearly 8% percent of the total sit once in a week. Only 9.6% markets sit daily and 1.3% markets sit thrice in a week. The frequency distribution of markets in the study area are shown in table 5.2 and Fig. 5.2.

Table 6.3. Frequency of Market days and their distributions

Name of the P.S.	Number of market Per Week with their percentage				
	Once	Twice	Thrice	Daily	Total
Bagerhat	1(5)	15(79)	1(5)	2(11)	19(100)
Chitalmari	3(22)	10(71)	—	1(7)	14(100)
Fakirhat	1(9)	8(73)	—	2(8)	11(100)
Kachua	1(7)	10(10)	—	2(15)	13(100)
Mollahat	2(10)	17(85)	—	1(5)	20(100)
Mongla	2(16)	8(68)	—	2(16)	12(100)
Morrelgonj	1(3)	35(94)	—	1(3)	37(100)
Rampal	1(10)	8(80)	—	1(10)	10(100)
Sarankhola	0(00)	15(80)	1(6)	3(15)	15(100)
Total	**12(7.6)**	**127(81.5)**	**2(1.3)**	**15(9.6)**	**156(100)**


BAGERHAT DISTRICT
DISTRIBUTION AND PERIODICITY OF MARKET CENTRES
SCALE
0 2 4 6 Km.
N
MOLLAHAT
CHITALMARI
FAKIRHAT
BAGERHAT
KACHUA
RAMPAL
MONGLA
MORRLGONJ
SARANKHOLA
INDEX
District Boundary
Three Day Markat
Two Day Markat
One Day Markat
Daily Markat
SUNDAY — 1
MONDAY — 2
TUESDAY — 3
WEDNSDAY — 4
THUSDAY — 5
FRIDAY — 6
SATURDAY — 7
DAILY — 8

Fig—6·3

From table 6.3 and Figure 6.4 it has been observed that 127 markets out of 156 comprising 81.5% percent to the total sit twice a week. These markets are most important because they are in large number and play an important role in transactions of agriculture goods and other commodities. Moreover, the rural economy of the district is insufficient to support the markets more than twice a week. The markets which sit once a week are more in Chitalmari, Mollahat & Mongla P.S. Fakirhat and remaining 5 police stations have less number of markets those sit once a week. Both types of markets which sit twice and thrice in a week have also seen in these police stations. There is no markets which sits once in a week in Sarankhola police station. Daily markets is mainly found in police station headquarters. The frequency of market days depends on the demand and density of population. So the market sits once or twice a week are more in the rural areas. All over the area, important and large size markets are situated far from the towns. The markets which are located near the town are very low in standard. Because near the town the purchasers can buy their necessary goods from the adjacent town markets.

6.4.2. Weekly Frequency of Market Meeting

From the field study it is found that the market plays a vital role in the economy of the region. The volume of daily commodities and money circulation are large. Total number of marketing days in the district is 379 per week excluding the days of two municipal daily markets. In the district,105 markets sit every day. It is also observed that on Monday the largest number of market days occured and Tuesday holds the next important position. As a matter of fact, except on Wednesday (7%) with a minor variation of another day of a week, the markets sit more or less uniformly in other days of the week (Fig - 6.5). From the analysis of markets in different police station of the district, it has been observed that the market days in each police statinos varies from market to market. Highest number of market days is noticed in Morrelgonj Police Station.

Table 6.4 Day of Marketing in a Week

SL. No.	Name of the P.S.	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Daily	Total
1.	Bagerhat	4	5	8	2	5	5	7	14	50
2.	Chitalmari	1	6	4	1	2	4	5	7	30
3.	Fakirhat	2	3	4	0	1	3	4	14	31
4.	Kachua	5	3	2	4	2	3	2	14	35
5.	Mollahat	3	9	8	3	8	7	6	7	43
6.	Mongla	3	3	0	4	4	1	3	14	32
7.	Morrelgonj	14	9	10	9	11	8	10	7	78
8.	Rampal	2	3	2	2	3	3	2	7	24
9.	Sarankhola	3	8	5	3	8	5	3	21	56
Total :		**37**	**49**	**40**	**28**	**44**	**39**	**37**	**105**	**379**
Percentage to Total		**9.8**	**12.8**	**10.8**	**7.6**	**11.0**	**10.5**	**9.8**	**27.7**	**100**

The maximum number of 'hat' sits on Monday. The minimum sitting took place on Wednesday. It needs to be mentioned that usually the majority of important hats sit twice a week and almost in every case the full assemblage took place on one day while the assemblage is partial on the other day. This happen to be a fixed programme without any interruption. Disparity in the sitting between the major and minor 'hats' is interrelated. For instance, the major bi-weekly 'hats' sit at an interval of days in a week and generally the minor hat - days have been fixed in remaining blank day of the week. Table 6.4 gives a clear idea about the days of market meetings in a week of the district

An observation to the distribution of market days in the district reveals the fact that majority of the markets sit equally through out the week. The adjacent market days is totally controlled by the market authority and it was fixed with the consultation of neighbouring market authority. From the field study, it had been noticed that two adjacent markets are sitting on the the same day of the week and as a result the attendances in terms of both buyers and sellers fluxtuate very much. The following statement gives an idea about the distribution of market days in a week.

The choice of market days depends on neighbouring market days. There should be a chain of 4 - 5 days. Though there is no proper chain of market days in the district, but in very few cases, overlapping of market days are 4 - 5 days in some police stations. Choice of days also depends on political, social and different other factors.

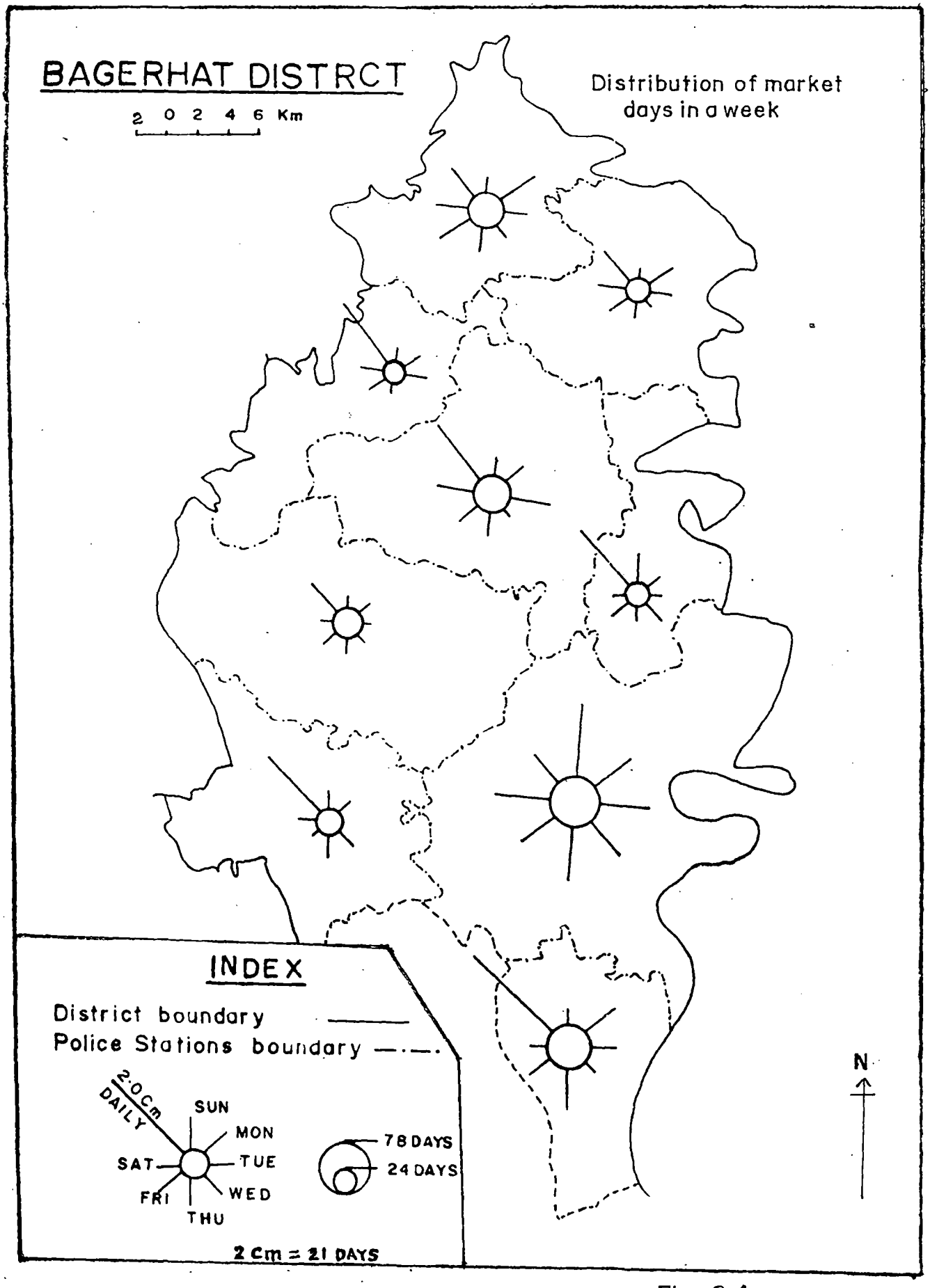
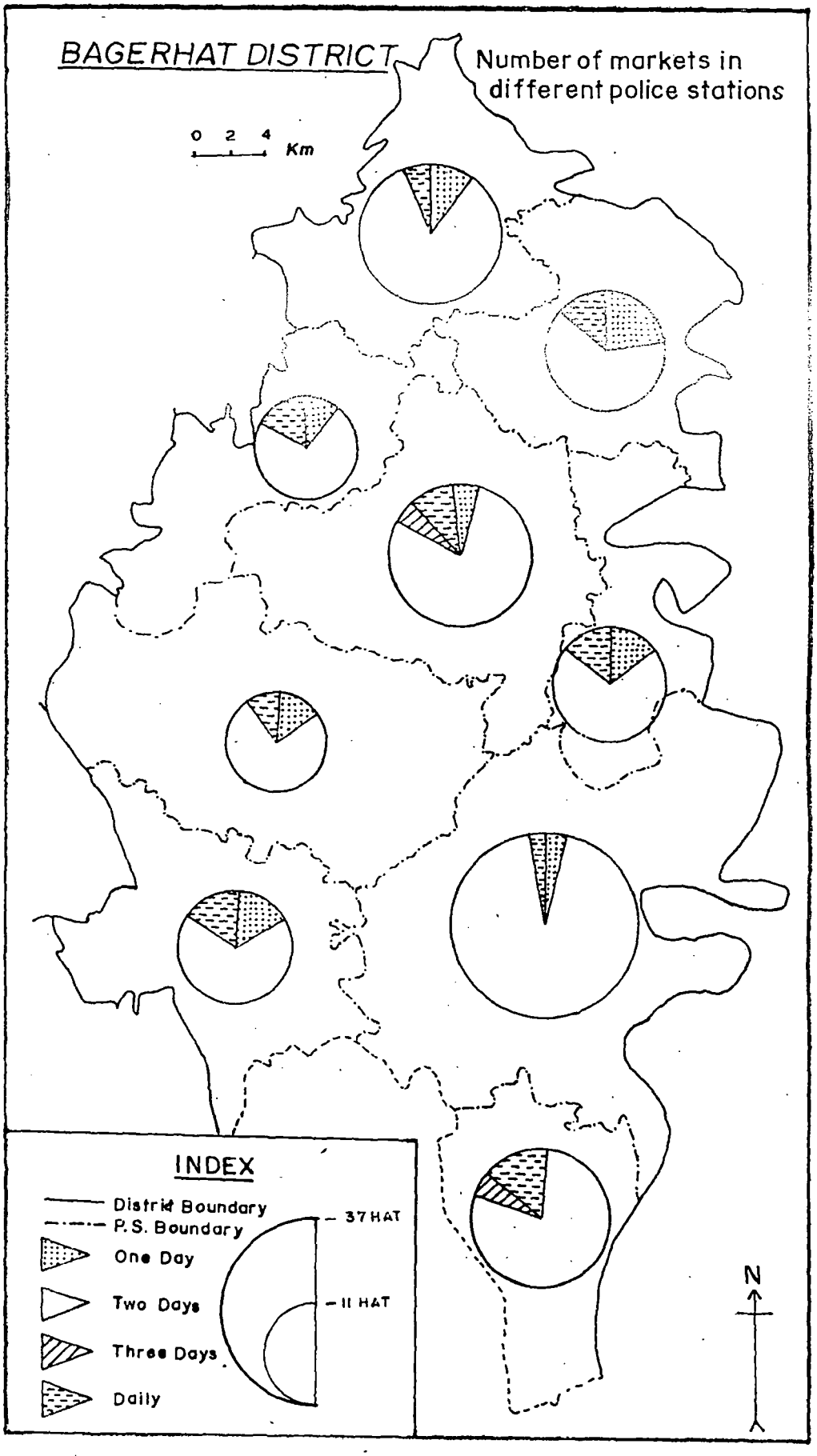

BAGERHAT DISTRCT
2 0 2 4 6 Km
Distribution of market days in a week
INDEX
District boundary
Police Stations boundary
2.0 Cm DAILY
SUN
MON
TUE
WED
THU
FRI
SAT
78 DAYS
24 DAYS
2 Cm = 21 DAYS
N

Fig-6·4


BAGERHAT DISTRICT
Number of markets in different police stations
0 2 4
Km
INDEX
District Boundary
P.S. Boundary
One Day
Two Days
Three Days
Daily
37 HAT
11 HAT
N

Fig–6·5

6.5. COMPARATIVE STUDY OF MARKET CENTRES IN DIFFERENT POLICE STATIONS

There are various perspectives in marketing, which can be studied geographically (Dixit - 1980). Market centres play a vital role of marketing activities. The market centres related with area, of villages covered and population distributional pattern of a region. Here, some quantitative techniques have been applied and computed to analyse the distributional pattern. It can be measured with the help of 3 indicators area and population of the villages & number of villages on the police station. Comparison of the result of nine police Stations, (Diagram 6.6), it shows that the rank of Sarankhola and is highest, the rank of Rampal Police Station is lowest. Moderate categories have been found only in three police stations. Table (6.5) show the number & the category of police stations.

Table 6.5 Percentage and Categories of the Market Relationship

Average Rank Class	Category	No. of Police Station & Percentage	Name of the Police Station
Below - 5	Very high	1	Sarankhola
6 - 10	High	1	Mollahat
11 - 15	Moderate	3	Kachua, Chitalmari, Morrelgonj
16 - 20	Low	3	Bagerhat, Fakirhat, Mongla
20 above	Very low	1	Rampal

Police Station-wise distributional pattern of three attributes have been shown in Appx. table - XII. From table it is found that the market centres/10 Km^2 area is 0.693 in the district in Kachua has the lowest (0.69) and Sarankhola has the highest rank among the police stations. The remaining police stations have almost uniform values (Table 6.3). Another variable, 1000 population per market centre demonstrates that the average value of the district is 0.269 and the highest rank is possessed by Sarankhola P.S. Rest of the police stations (Chitalmari, Mollahat, Kachua and Morrelgonj) have almost uniform value. The number of market centres per 10 inhabited villages in the district is highest in Sarankhola (4.31) and Rampal (0.86) police station ranks lowest. Sarankhola is more deviated from the other 8 police stations. The value of five police stations is nearer to each other. The value of remaining two police stations, viz Morrelgonj and Mollahat are 1.96 and 2.01 respectively. It is further found that the deviation is more in the case of 10

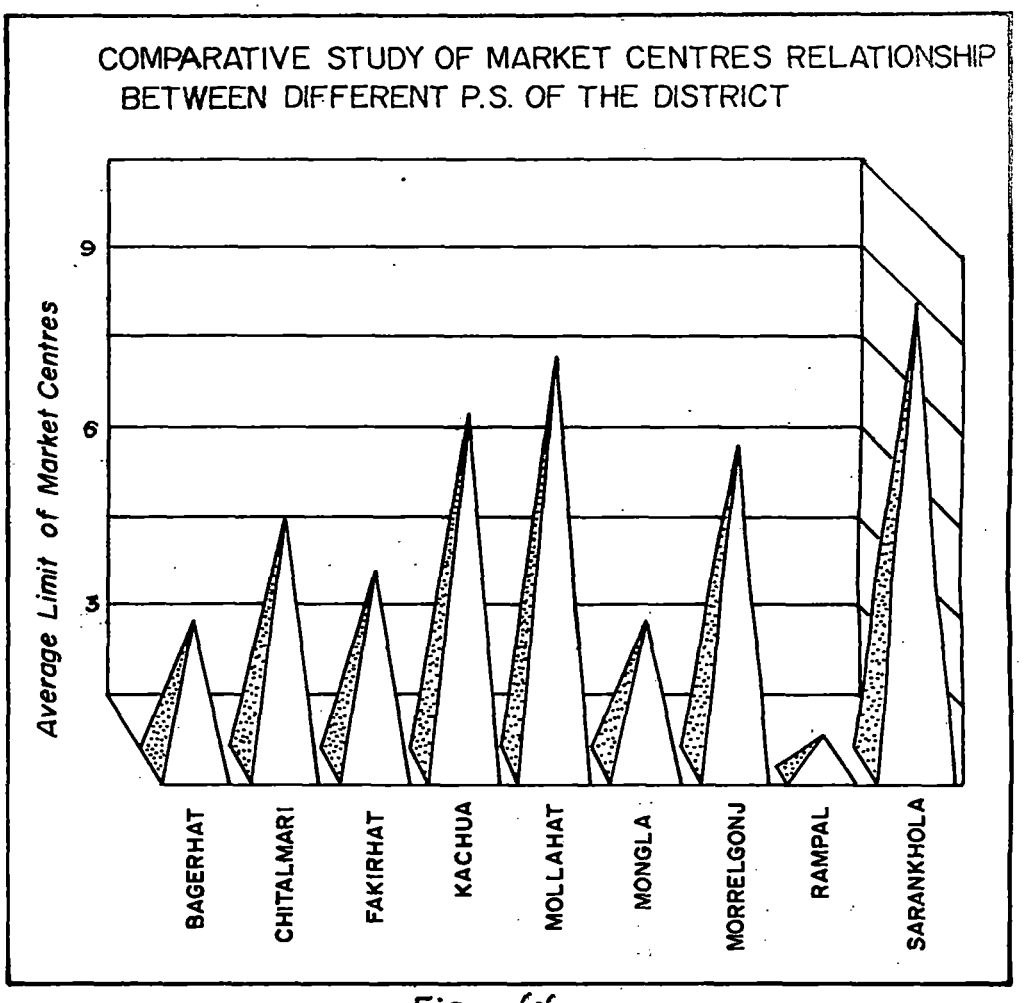

COMPARATIVE STUDY OF MARKET CENTRES RELATIONSHIP
BETWEEN DIFFERENT P.S. OF THE DISTRICT
Average Limit of Market Centres
9
6
3
BAGERHAT
CHITALMARI
FAKIRHAT
KACHUA
MOLLAHAT
MONGLA
MORRELGONJ
RAMPAL
SARANKHOLA

Fig — 6·6

villages per market centres in different police stations compared to other two attributes (Fig. 6.7. c).

From the observation of different graphs and diagrams, the distribution of market centres is affected by the distribution of population (Hodder, 1965) Market centres served the demand of population of their hinterland. A number of factors are responsible for the present distributional pattern. Many factors have directly affected the distribution.

The comparison of the analysed data and diagram (appendix table-XI) shows that there is a good relationship between the market centres and there three attributes. (Diagram 6.7 A). This scattered diagram apparently demonstrates that there is a significant relationship between these two variables and its co-efficient of correlation is r = 0.73.The regression line is y =2. 15 +. 065x.

Secondly, another diagram showing the number of market centres and population has been drawn (figure 6.7 B.) and it is found that there is a good relationship between these two variables. It has also been made to compute the co-efficient of correlation (r=0.79). This value is quite satisfactory. The regression line is y = 3.5 + .087x..

In the last observation, the diagram 6.7 c shows the relationship between the number of inhabited villages and the market centres of the district. From the graph it is clear that relationship among themeselves is positive. The value of co-efficient of correlation is 0.56 and regression equation is y = 9.84 +.095x.

Analysing these attributes of market centres by comparative study in nine police stations five kinds of ranks are found. There are two police station in very high and high categories. Similarly only one police station (Rampal) is in very low category. As a result most of police stations of the district are in medium category.

6.6. COMMAND AREA AND COMMAND POPULATION OF MARKET CENTRES IN THE DISTRICT

Service zone or Command area of market centre depends on the order of functions those are available in the market centre. It varies from market to market. The market serves not only its own village but also to its people. From the field study, it has been found that normally, market facility is available within 5 km from the centre. It is also observed that travelling distant of major consumers is very short. As a result, the comand

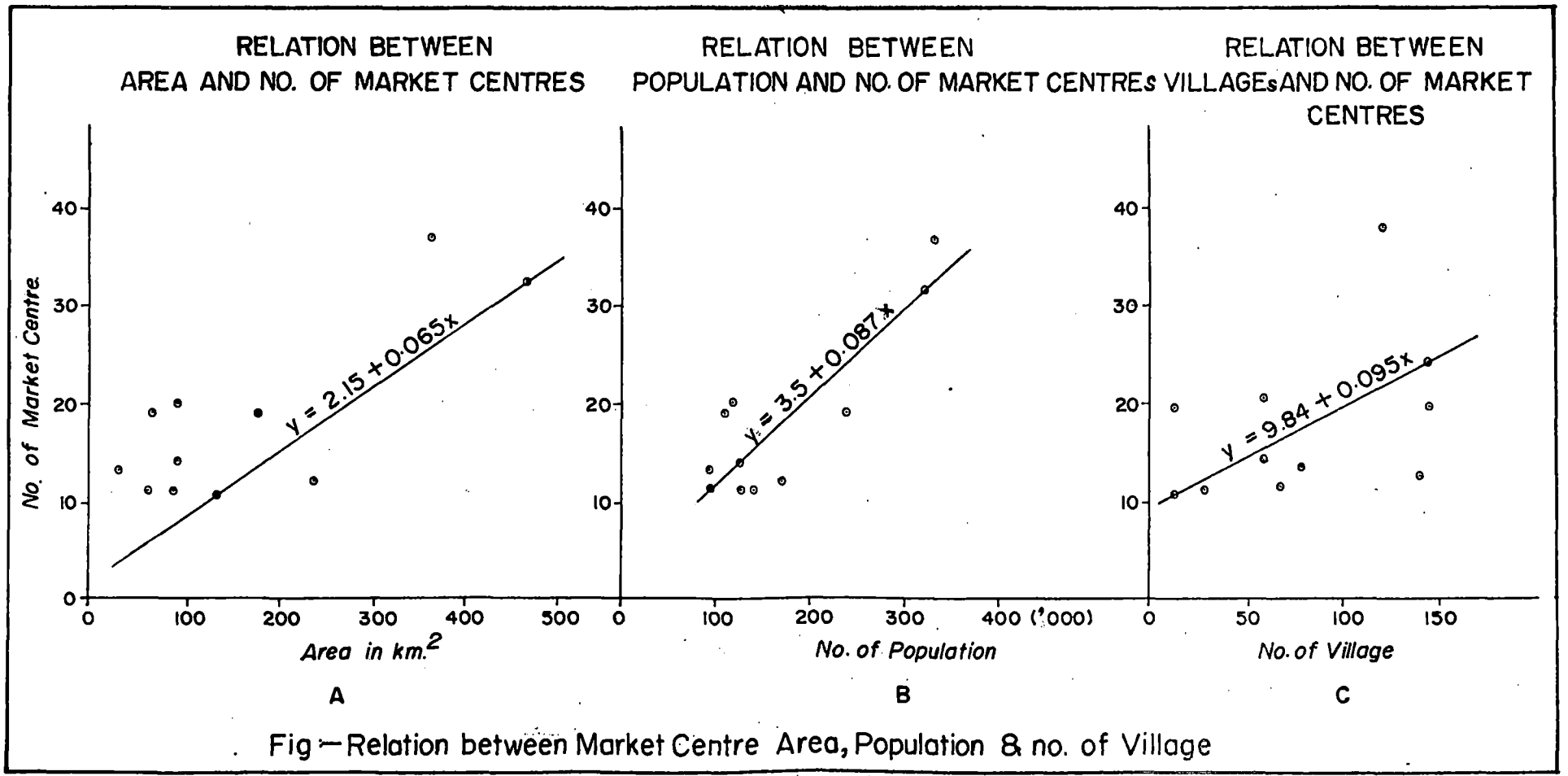


Fig – Relation between Market Centre Area, Population & no. of Village

Fig – 6·7

area of market is small. Under the uniform condition of distribution, of settlements phenomena of command area should be assumed a round shape. But the tarrain condition and transport facilities change the shape. Over and above administrative aspect of services in the region (Bangladesh) have pronounced impact in the dilemmation of common area and population (Sing,1968). The percentage of command area and population of market centres in nine police stations have been measured by the field study. Table 6.6 gives an idea about the command area of market centres in the district.

Table 6.6 Number & Percentage of command area in the markets of Bagerhat district.

Name of the P.S.	Area Percentage of the Police Stations					
	below 5	6 - 10,	11 - 15	16 - 20	20 above	Total
Bagerhat	13(68)	4(21)	2(11)	-	-	19(100))
Chitalmari	7(50)	3(21)	3(21)	1(8)	-	14(100)
Fakirhat	4(36)	5(46)	1(9)	-	1(9)	11(100)
Kachua	6(46)	4(30)	2(15)	1(9)	-	13(100)
Mollahat	16(80)	3(15)	1(5)	-	-	20(100)
Mongla	3(28)	4(36)	4(36)	-	-	11(100)
Morrelgonj	35(94)	2(6)	-	-	-	37(100)
Rampal	5(42)	2(16)	5(42)	-	-	12(100)
Sarankhola	13(68)	4(21)	1(5.5)	-	1(5.5)	19(100)
Total	**102(65)**	**31(20)**	**19(12)**	**2(1.5)**	**2(1.5)**	**156(100)**

From table 6.6 it is clear that the number of market centres in the low categories is higher than the high categories. There are 102 (65%) market centres in below 5% area of the police station and only 2 markets in each Sarankhola and Fakirhat Morrelgonj Police Stations which serve above 26% area of respective police station, which comprises, 20% of total markets in the district (Fig - 6.8). Thirty one market centres have moderate command area. Most of markets having small command area are located in the interior part of the district.

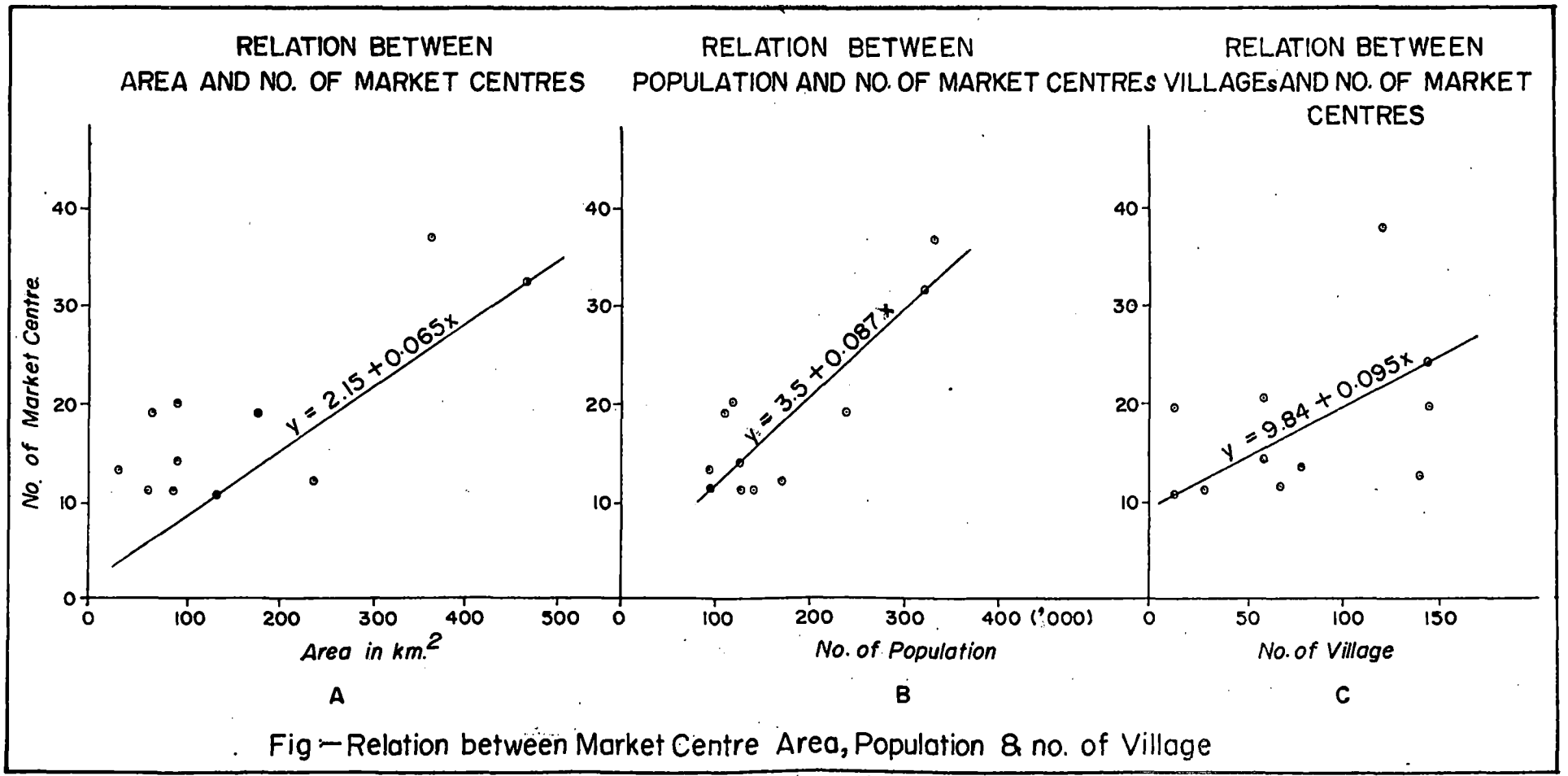
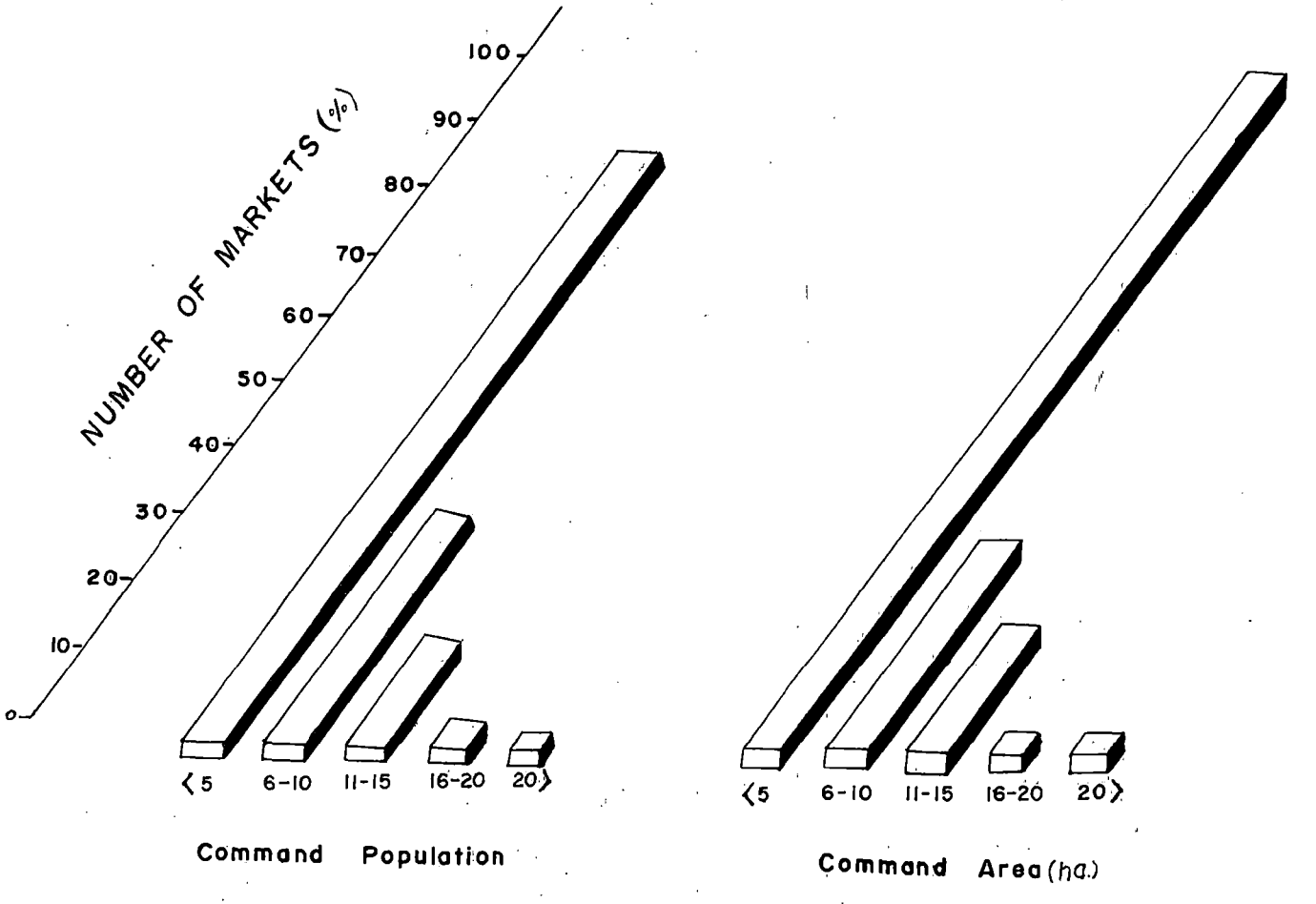


Fig – Relation between Market Centre Area, Population & no. of Village

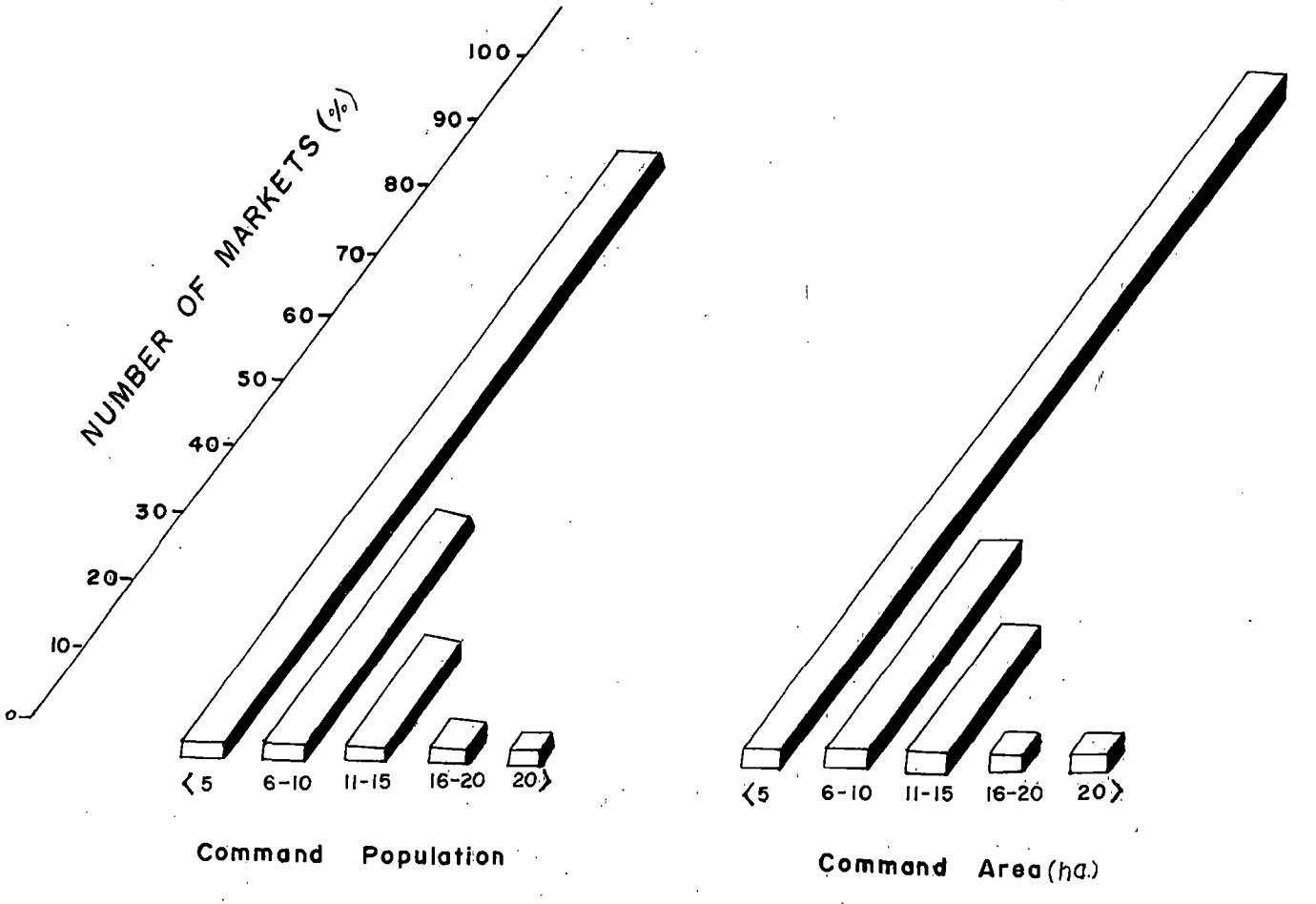
Fig – 6·7

NUMBER OF COMMAND AREA & POPULATION OF MARKETS OF THE DISTRICT



Fig·No– 6·8

NUMBER OF COMMAND AREA & POPULATION OF MARKETS OF THE DISTRICT



Fig·No– 6·8

Table 6.7 Number and Percentages of command population in the markets of Bagerhat District.

Name of the P.S.	Population Percentage of the Police Stations					
	Below 5	6 - 10,	11 - 15	16 - 20	20 above	Total
Bagerhat	13(68)	3(16)	3(16)	-	-	19(100))
Chitalmari	7(50)	3(21)	3(21)	1(8)	-	14(100)
Fakirhat	4(36)	4(36)	2(19)	-	1(9)	11(100)
Kachua	6(46)	5(38)	1(8)	1(8)	-	13(100)
Mollahat	13(65)	6(30)	1(5)	-	-	20(100)
Mongla	3(27)	5(46)	2(18)	1(9)	-	11(100)
Morrelgonj	35(94)	2(6)	-	-	-	37(100)
Rampal	5(42)	3(25)	4(33)	-	-	12(100)
Sarankhola	13(69)	4(21)	1(5)	1(5)	-	19(100)
Total	**99(64)**	**35(21)**	**17(11)**	**4(2.5)**	**1(0.5)**	**156(100)**

From table 6.7 it is noticed that :99 market centres, which comprise 64% of the total, are below range of 5 percent command population. Nearly 22 percent of total markets are in the range of 6 - 10 percent of command population. It is also found that only one market centre is in the highest range of percentage of command population, and it is situated at Fakirhat police station. The second highest percentage range (16 - 20) of command population has only four market centres. Majority of markets in the district have low command population. It is found that in the distribution of population,the percentage of lower range of command population are : 36% in Fakirhat, 27% in Mongla and 42% in Rampal Police Stations. The command population of each police station is not uniform due to the variation of population density and terrain character.

6.7. RELATIONSHIP BETWEEN COMMAND AREA AND COMMAND POPULATION OF MARKET CENTRES

By careful field and investigation, the command area & command population of market centres in each police station of the district have been identified and assessed. (Appendix table -XIII). The method to determine the command area and command population of market centres had been applied in Silabati basin in India by Jana (1978). After assessing the command area and command population of the study area of each market centre (Appendix table XIII), the total area and population have been calculated for individual police station which has been shown in the Fig 6.10 & 6.11 (A - I). The

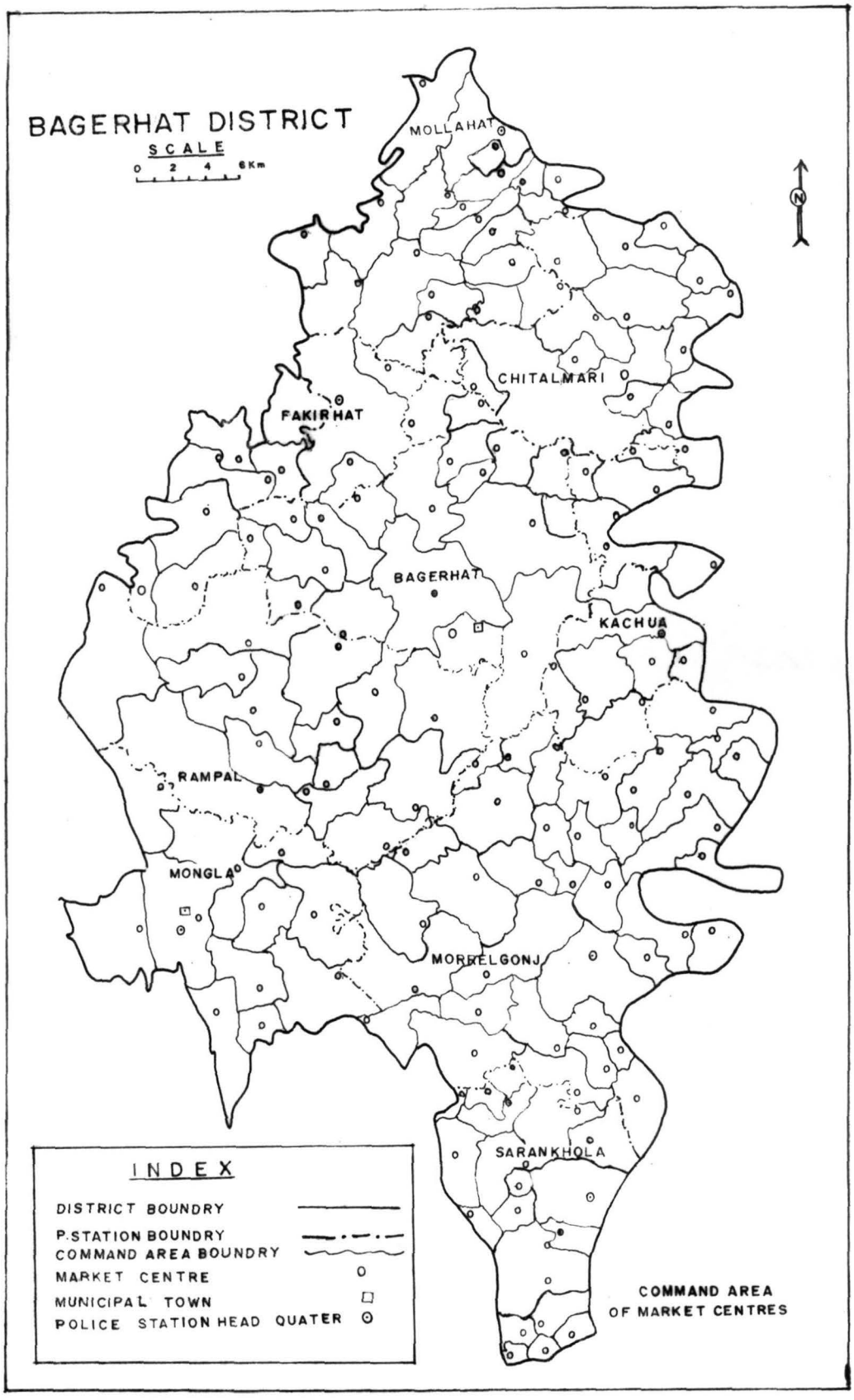

BAGERHAT DISTRICT
SCALE
0 2 4 6Km
N
MOLLAHAT
CHITALMARI
FAKIRHAT
BAGERHAT
KACHUA
RAMPAL
MONGLA
MORRELGONJ
SARANKHOLA
INDEX
DISTRICT BOUNDRY
P.STATION BOUNDRY
COMMAND AREA BOUNDRY
MARKET CENTRE
MUNICIPAL TOWN
POLICE STATION HEAD QUATER
COMMAND AREA
OF MARKET CENTRES

Fig – 6.9

relationship is very good. The correlation co-efficients between command area and command population of the police stations varies from 0.23 to 0.98. (figure 6.10 and 6.11. A - I). The regression lines between the command area and command population of total 156 market centres in different police stations are as follows.

Y_B	=	224+ 3x	Y_{Mo}	=	1328 + 1.41x
Y_C	=	2495 +1.77x	Y_{MR}	=	394 + 2.36x
Y_F	=	1064 + 2.75x	Y_R	=	2221 + 1.52x
Y_K	=	— 55+2.57x	Y_S	=	— 166 + 2.37x
Y_{ML}	=	546 + 1.94x			

Hence, X & Y are the command area and command population of each market centre, whereas B, C, F, K, ML etc. indicate the first letters of name of police station.

From the field study it is visualised that the command area and command population of any market centre depends on the function available in the market place. The higher order markets have larger command area & population (Fig. - 6.9). It is revealed (Appendix table - XIII) that most of the markets in police station headquarters have large command population. The relationship between comand area and command population is positive in most police station. Two police stations have negative results and these are Sarankhola, and Kachua. The average value of correlation of co-efficient of nine police stations is 0.87.

From Appendix table XIII it is noticed that Bagerhat Police Station has 19 market centres. The largest command area is in Madrasha market (3703 ha) and smallest is in Dalchaka market (420 ha). The largest and smallest command population of the Madrasha and Kalikabari markets are 24058 and 2479 respectively. The correlation co-efficient among the 19 markets is 0.92. The command population is high in different market centres of Bagerhat district. In Chitalmari police station, the lowest command population is in Aruaborni and highest is in Chitalmari market centre. At the same time the highest and lowest command area are found in Bakergonj and Muslendopur market centres respectively. The coefficient of correlation is 0.73 (Fig - 6.10).

Fakirhat Police Station has only 11 market centres. Highest command population and command area are 29504 and 9918 ha respectively. (Appendix table XIII) From Appendix table XIII, the command area and command population of Kachua Police

RELATION BETWEEN COMMAND AREA AND COMMAND POPULATION (B,E,F,G,I)

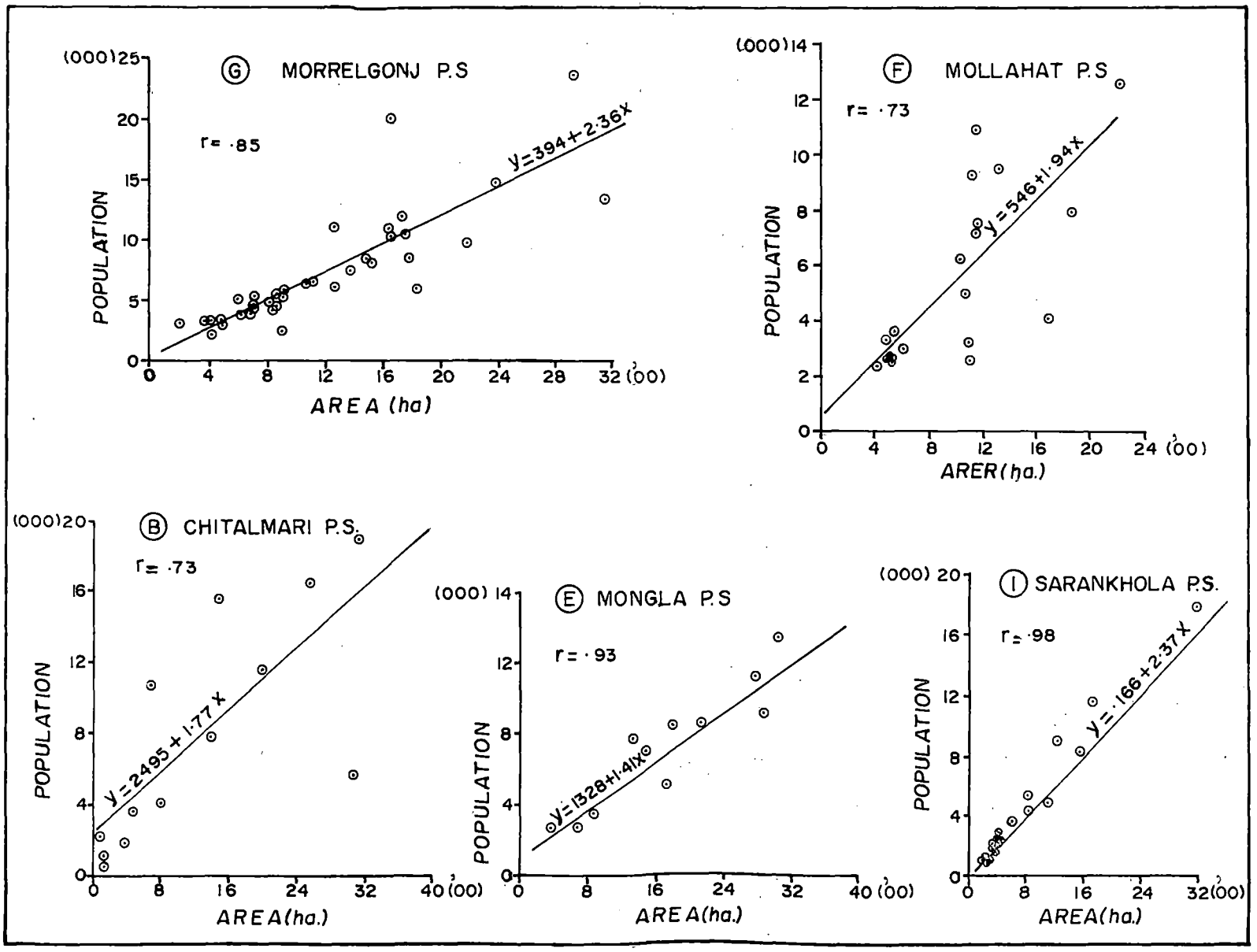
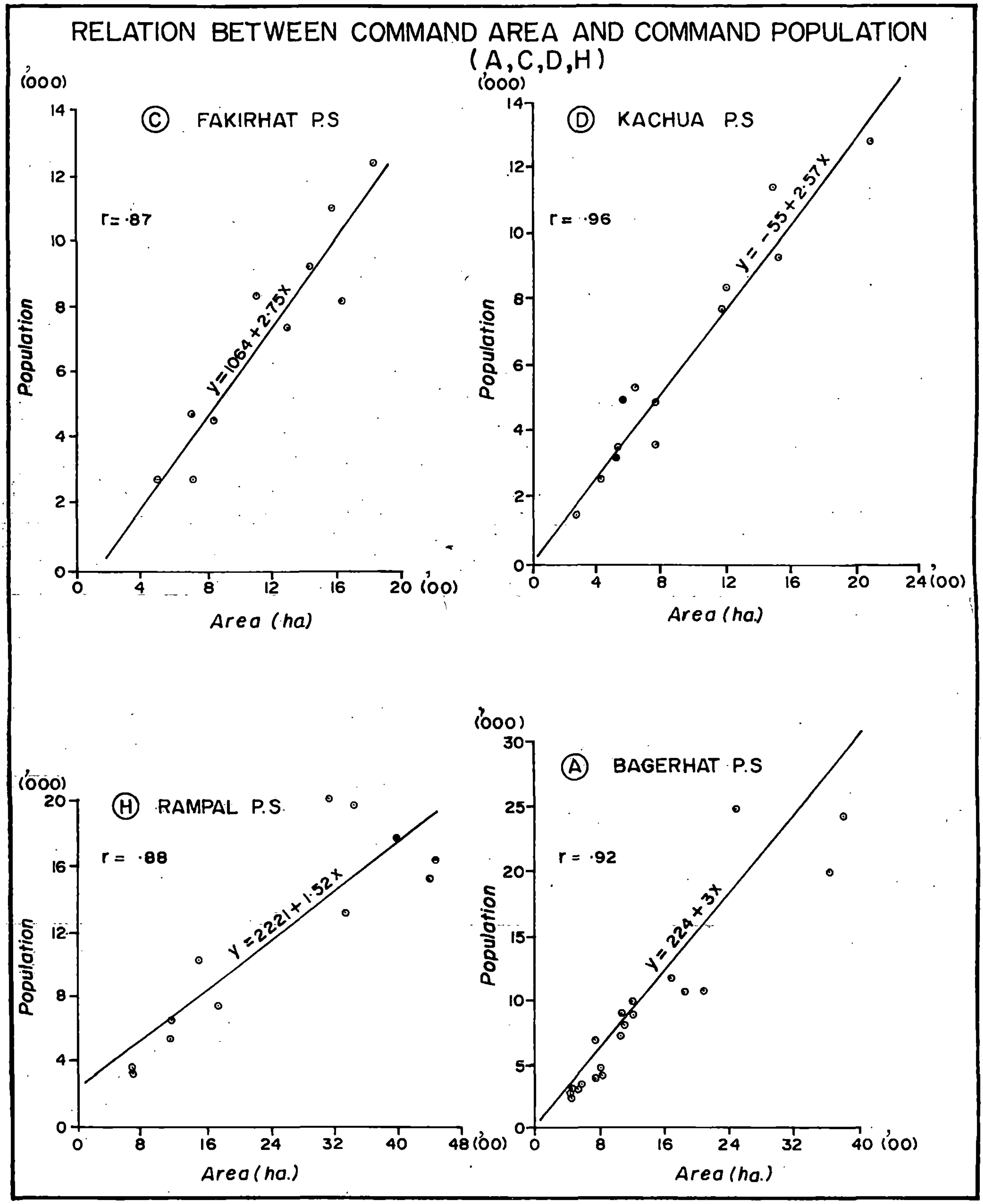


Fig. 6·10



RELATION BETWEEN COMMAND AREA AND COMMAND POPULATION
(A,C,D,H)
C FAKIRHAT P.S
r= ·87
Y=1064+2·75X
Population
Area (ha)
D KACHUA P.S
r= ·96
Y= -55+2·57X
Population
Area (ha.)
H RAMPAL P.S
r= ·88
Y=2221+1·52X
Population
Area (ha.)
A BAGERHAT P.S
r= ·92
Y= 224+3X
Population
Area (ha.)

Fig. 6·11

Station have been calculated and the largest and smallest command population are found in Badal (12612) and Lararhat (1370) market centre respectively. A close relationship of two variables (r=0.96) among the 13 markets of the Kachua Police Station is observed. The figure reveals the clear picture of relationship in the police station.(Fig. - 6.11)

The size of command area and command population (in Mongla Police Station) of 11 market centres are shown in Appendix XIII. Out of 11 market centres the highest & lowest command population and area are in Chillahat and Mitakhali markets respectively. It is noticed that Mollahat Police Station has second highest number of market centres of the district . Out of 20 markets in the police station, Garfa market has the highest command area and command population (13401). Command area and command population of major market centres are uneven. The correlation value is satisfactory.

Morrelgonj Police Station has the highest number of market centres in the district. It has 27 percent of total markets among nine police stations. From Appendix table XIII, the highest command area and command population have been found in Pachgao (5886 ha) and Morrelgonj (20,057) market centres. At the same time, lowest command area and command population are found in Daidoghati (525 ha) and Herma (1981) market centres. Average command area of the market centre is moderate In Rampal Police Station it is observed that the largest command area and command population has been served by Aawholia (4412 ha) and Kaligonj (1707) market centres respectively. The lowest command area and command population is served by Faila (19983 ha) and Kaligonj(3109) market centres respectively. Sarankhola Police Station has been served by 19 market centres. It is observed (Appendix table XIII) that the command population of majority of market centres is medium. Only Rayenda market centre has highest (17875) population. The lowest command area and command population is served by Lakurtala (204 ha) and Jahurali (995) market centres respectively. The figure (6.10) gives a clear picture of the relationship between command area and command population in these police stations.

6.8. FUNCTIONAL ROLE OF MARKET CENTRES

The market centres play an important role in the village economy. The activity of market centres is very complex and flexible in the developing countries. In the less developed countries the relationship between the market centres and their hinterlands is poor, which makes the activities of market centers are more complex (Haggett, 1967), provide the daily need to the difficit area i.e. the Urban centres. Generally, it has three ranges of functions; the local exchange, the ranges of internal trade and the central place functions of this region.

The local exchange means the subsistance economy. In this categories of functions the buying and selling operations are carried on for local consumption. This internal trade of markets from the exchange of goods between the surplus and deficit areas. It become more and more complex due to the service performed by the markets. Rural markets are covering point of excess commodity in the internal trading functions. Hence, the simple methods of buying and selling on local exchange of village product is replaced by more complex process involving the hand of 'faries' hawkers', wholeseller and mill agents. This 'faries' and 'baparishs' buy different commodities directly from the growers and sell them to the mill agents, such operations are done on the basis of commodities. The market centres, at many instances also perform the functions of a central place in that region as the markets become locally or regionally important and specialized functions are of economic, social, and political importances dealt with (Plate - 6.7).

The primary function i.e. commerce or the exchange of commodities and services of market centres lies in the category of economic functions. The social functions are education, health services and social welfare services. The political functiions comprise the activities of the Union Parishad and in some cases those of the market regulation committees etc. There diversified functions help the large rural market centres to develop into growth centres or growth poles for the surrounding villages, which is closely linked with the development of transportation. As such they become the service centres for villages lying their surrounding areas, effecting services in the field trade, transport, commerce, industry administrations, education, health etc. Through commerce helps to be the most uniformly distributed service of the market centres, the centre economic activities of the surrounding villages are focussed on the respective markets centres.

Plate 6.9 Bus and carrier truck crossing the Dharatana river by ferry

Plate 6.10 People crossing the river by Government ferry

With the development of market centres, a number of characteristics central functions gradually appear within it. The characteristics of functions gradually include a host of small industries, like cycle repairing, the automobiles repairing, the blacksmith, the potters, the rice mills, oil mills, ice factory, saw mills, goldsmith, the manufacture of agricultura l implements etc. Not only that all of them are found in every market centre acting as a growth poles, but many of them are found in most of the market centres. The function of this types provide the employment facility to the villagers.

The other characteristics function of market centres is education which plays an important place. They are educational institutions ranging from the primary to the secondary school and some cases even Madrasha and College, besides, different Governemnt and Non-Government offices i.e. post office, telephone office, etc. It is found many of them are functioning for village farmers and traders. There are different banks like Sonali Bank, Janata Bank, Krishi Bank, Agrani Bank Rupali Bank, There are co-operative bank and are operating by different traders and farmers. All these Government and non-Government bank takes an important part in the development of of market centres. There are also rural health centre, family planning centre, 50th bed hospital, Charitable dispensary etc. These were established to serve the local areas. It is also to be mentioned that all the market places do not offer all the services mentioned above and as such they have not got assumed the position of market centres. Only those which have come to attained that status are found to be specially equipped, before hand with as in every case - (i). It had such function which could serve the population of the centre; (ii) It gave rise to some commercial activities catering to the need of a larger, clientale, (iii) It has its own command area whose inhabitants had been dependent on the centre for meeting their social, economical and cultural requirements.

Market centre is lowest service centre in the hierarchy of settlements. The size of the service centre is determined by the range of central goods and services offered to its command area. The service area of a market centre under study varies from 3 to 50 Km. as a general role. But in a few exceptional cases i.e. in the case of the specialized market centres the radius comes to 10 to 20 Km. The growth centres situated at the nodal points. Such a centre having specialized activities, gradually attained the studies

Plate 6.11 Political Meeting at kachua market of pick hours at 'hat' day.

Plate 6.12 Parliamental voting meeting in 'hat' day at Rayenda market

of a mini town. This centre covered all the lower order centres with its sphere of influence, besides it has some specialized functions for which the lower order centres depends on it.

CONCLUSION

From the analysis of market centres in Bagerhat district, it is found that various functional characters exist in the marketing system in the region. Form the point of view, the functions of the markets are the responsibilities of market level. The standered of markets based on the different functional an eminities of market place. Market centre may be distinguished into two functional activities - (i) Centripetal and (ii) centifugal (P. Sing, 1968) functions. Similarly, internal and external functions are performed in market place (B. Bhattacharayya, 72). Analysing the functional characters of the study area, the periodicity gradually increased in thickly populated areas one day in a week in the 12 market centres out of 156 markets in the district. Most of the market centres held twice in a week. Only two market centres held thrice in a week. This study area has resemblance with the situation in southern China (B.J.L. Berry, 1967). The daily markets is mainly located in police station headquarters. The frequency of market days is rather higher than one and two days. Monday is having the highest frequency of the week and Wednesday is the lowest frequency. The relationship of markets with three indicators (Population, Area and no. of village) are very significant. Among nine police stations, Sarankhola is the highest rank and Rampal is the lowest rank in the district.

CHAPTER - SEVEN

IDENTIFICATION AND APPLICATION OF STRATEGY IN DEVELOPMENT OF MARKET CENTRES

INTRODUCTION

This chapter discusses the order of hierarchy of selected markets of the nine police stations. Rural market centres played a vital role in the distribution of rural economic functions. In the study area, there are different categories of market centres. The spatial analysis of market centres is determined by the functional value of the markets. The chapter has been divided into eight sections. In the first section, the selected market centres have been identified and there distribution in different police stations has been discussed. The functional units and spatial structure of market centres are analysed. The characteristics of buyers and traders and the hierarchal order of selected market centres have been discussed. Besides, the marketing hours are identified and the levels of markets centres on the basis of different parametres have been analysed by ranking.

7.1. DISTRIBUTION OF SELECTED MARKET CENTRES

In the study area, 156 market centres are distributed over nine police stations. On the basis of hierarchy of market centres, 45 markets have been identified for analysis. (Fig. 7.1). Randomly five market centres have been selected in each police station. On the basis of field study it has been found that various functions are available in the market centres. These different functional activities have been arranged according to hierarchy of the market centres. These selected market centres represent the market and marketing systems of the study area, moreover the periodicity and location of selected market centres in the district have been analysed.

7.2. DIFFERENT TYPES OF FUNCTIONS AND FUNCTIONAL UNITS OF SELECTED MARKET CENTRES.

Three types of market centres are identified on the basis of transactions which are totally dependent on the nature of surplus of agricultural production. Location of markets and aggregates demand by the inhabitants help to grow some market centres

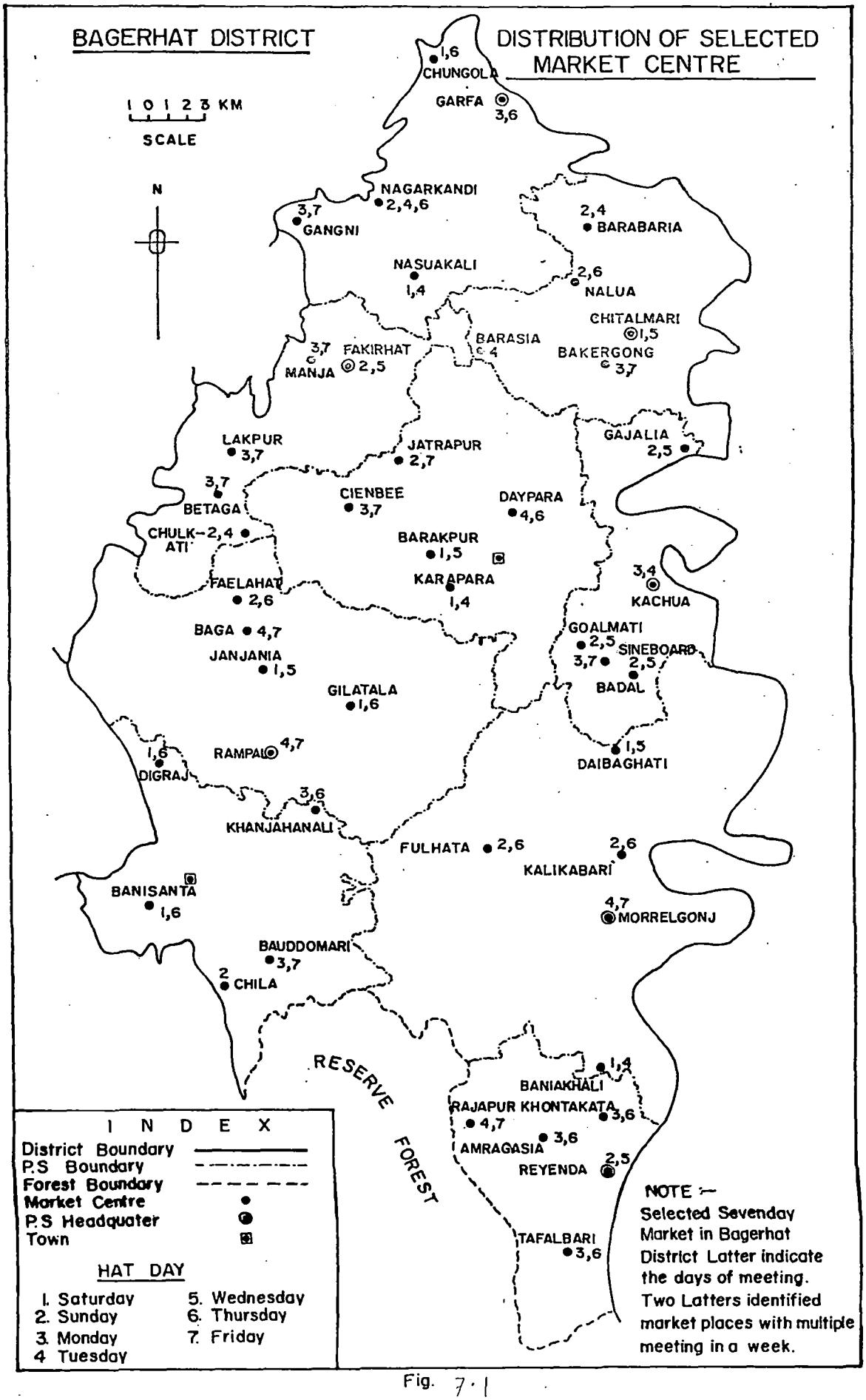

BAGERHAT DISTRICT
DISTRIBUTION OF SELECTED MARKET CENTRE
1 0 1 2 3 KM
SCALE
N
CHUNGOLA 1,6
GARFA 3,6
NAGARKANDI 2,4,6
GANGNI 3,7
BARABARIA 2,4
NASUAKALI 1,4
NALUA 2,6
CHITALMARI 1,5
BARASIA 4
BAKERGONG 3,7
FAKIRHAT 2,5
MANJA 3,7
LAKPUR 3,7
JATRAPUR 2,7
GAJALIA 2,5
BETAGA 3,7
CIENBEE 3,7
DAYPARA 4,6
CHULKATI 2,4
BARAKPUR 1,5
KARAPARA 1,4
KACHUA 3,4
FAELAHAT 2,6
BAGA 4,7
GOALMATI 2,5
SINEBOARD 2,5
JANJANIA 1,5
BADAL 3,7
GILATALA 1,6
DAIBAGHATI 1,5
RAMPAL 4,7
DIGRAJ 1,6
KHANJAHANALI 3,6
FULHATA 2,6
KALIKABARI 2,6
BANISANTA 1,6
MORRELGONJ 4,7
BAUDDOMARI 3,7
CHILA 2
RESERVE FOREST
BANIAKHALI 1,4
RAJAPUR KHONTAKATA 4,7
3,6
AMRAGASIA 3,6
REYENDA 2,5
TAFALBARI 3,6
INDEX
District Boundary
P.S Boundary
Forest Boundary
Market Centre
P.S Headquater
Town
HAT DAY
1. Saturday
2. Sunday
3. Monday
4 Tuesday
5. Wednesday
6. Thursday
7. Friday
NOTE :-
Selected Sevenday Market in Bagerhat District Latter indicate the days of meeting. Two Latters identified market places with multiple meeting in a week.

Fig. 7·1

as wholesale cum-retail, but most of them are retail. Different kinds of functions & functional units are dependent on level of market centres and demand of commodities.

(a) Types of Markets

From the field study as well as from table 7.1 it is revealed that the number of wholesale markets is only four. Maximum number of markets are retail in character Their percentages are 8.7 and 58.0 respectively. There are 15 (33%) market those are wholesale-cum-retail category. Retail markets are about 80 percent to the total in each police station of Bagerhat, Fakirhat & Sarankhola police stations. Highest number of wholesale markets are found in both Chitalmari and Rampal P. S. (Plate - 7.1)

Table 7.1 Number & its percentages of different types of shops in the selected market of the police stations.

Name of P.S.	Retail	Wholesale	Wholesale cum-Retail	Total Market
Bagerhat	4(80)	-	1(20)	5 (100)
Chitalmari	2(40)	-	3(60)	5(100)
Fakirhat	4(80)	-	1(20)	5(100)
Kachua	3(60)	-	2(40)	5(100)
Mollahat	2(40)	1(20)	2(40)	5(100)
Mongla	4(80)	-	1(20)	5(100)
Morrelgonj	3(60)	1(20)	1(20)	5(100)
Rampal	2(40)	2(40)	1(20)	5(100)
Sarankhola	4(80)	-	1(20)	5(100)
Total	**26(58.0)**	**4(8.7)**	**15(33.3)**	**45(100)**

(b) Educational Institutions

In rural areas, many socio-economic functions are concentrated in the market place. It is found that all the markets near the district headquarters have different kinds of educational institutions. From the field study, it is observed that 82 percent of total selected markets have at least one primary school and 78 percent of total selected markets have both secondary & junior high schools. About 31 percent of selected markets have college and only 16 percent of selected markets have Madrasha (religious school).

Plate 7.1 Producers selling local fish at Goalmat market

Plate 7.2 Fishermen selling crab at depot of Rampal market

Table : 7.2 Number & percentage of different types of educational institutions of selected market centres.

Name of Institutions	Number of Market Centres		
	Available	Not available	Total Market
Primary School	37(82)	8(18)	45(100)
Junior & Secondary Schools	35(78)	10(22)	45 (100)
College	14(31)	31(69)	45(100)
Madrasha	16(31)	29(69)	45(100)

It is also found table 7.2 that the educational institutions is not equally distributed in all over the market centres. In Bagerhat police station, it is seen that 80 percent market have both primary and secondary educational institutions and 20 percent market centres have no educational opportunities of any type. In this police stations 20 percent market centres have college and 40 percent of them have Madrasha. From the field survey it is also noticed that in Sarankhola, Chitalmari, Mollahat & Morrelgonj Police stations all market centres have primary and secondary schools. Educational facilities in remaining police stations are as follows : Fakirhat (40%) Kachua (71%), Rampal (83%) and Mongla (60%).Table 7.3 shows the distribution of individual educational institution in different police stations of the district.

Table 7.3 : Educational Institutions are available in percentage of selected market centres of the district.

Name of P.S.	Primary School	Secondary School	College (H.S. School)	Degree College	Madrasha/ Institutions	Other Centres	Total Market
Bagerhat	80	80	20	—	—	—	5
Chitalmari	100	100	25	—	50	—	4
Fakirhat	71	71	29	14	29	—	5
Kachua	40	60	20	—	60	20	5
Mollahat	100	100	20	—	40	100	5
Mongla	60	—	—	—	—	20	5
Morrelgonj	100	100	75	25	25	—	4
Rampal	83	100	50	33	33	—	5
Sarankhola	100	100	50	25	75	—	4

(C) Different facilities : Out of the 45 selected market centres of the district, electricity is available in 36 (80%) market centres. About 60 (27) & 80(38) percent of the total market centres have ponds and tube well facilities. It is also noticed that 73 and 31

percent market centres have retaining shed and pacca drains. Remaining 64 percent market centres have lavatory facility. (Table - 7.4).

Table 7.4 : Number and its percentage of market centres having different facilities in the selected market.

	Number of Market Centres		
Name of the facility	**Available**	**Not available**	**Total**
Electricity	36 (80)	9 (20)	45 (100)
Pond	27(60)	18(40)	45 (100)
Tube-Well	38 (84)	7(16)	45 (100)
Pacca Drain	14 (31)	31 (69)	45 (100)
Laboratory	29 (64)	16 (36)	45 (100)
Retailing Shed	33 (73)	12 (27)	45 (100)

(D) Mills & Factories

From the field study it is observed that small of mills & factories are located in the market centres. The percentage of mills & factories are shown in the table 7.5.

Table 7.5 : Number & percentage of mills & factories in Market centres

	Number of the Market Centres		
Name of the Mills & factory	**Available**	**Not-available**	**Total**
Rice & Flour Mills	36 (80)	9 (20)	45 (100)
Shaw Mills	25 (56)	20 (44)	45 (100)
Ice Mills	9 (20)	36 (80)	45 (100)
Oil Mills	12 (27)	33 (73)	45 (100)
Confictionary factory	10 (22)	35 (78)	45 (100)

Analysing the table, it is reveals that 80 percent of total market centres have rice mills and 56 percent of them have saw mills. Ice, oil, & confectionary mills are found in 20, 27 & 22 percent of selected market centres respectively.

(E) Permanent shops

Table 7.6 : Category and percentage of permanent shops.

Category	Range of shops	Number of market centres	Percentage
Very low	Below 100	31	68.9
Low	100 - 200	8	17.9
Moderate	200 - 300	2	4.4
High	300 - 400	2	4.4
Very high	400 above	2	4.4
Total	—	**45**	**100**

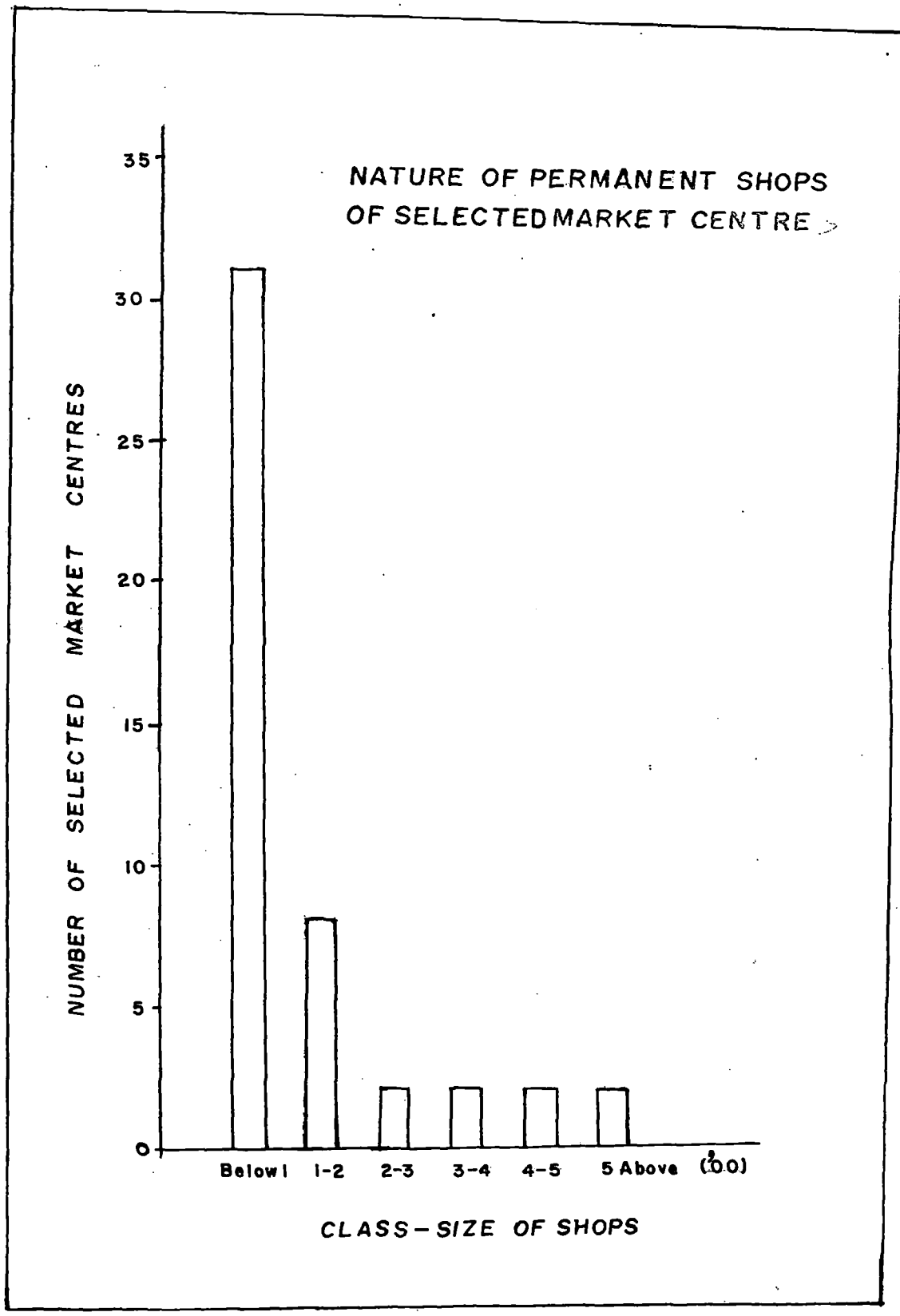
From table 7.6 it is found that the percentage of permanent shops in majority of market centres is low. Whereas, the percentage of permanent shops is high in the lower range of establishments. It is observed that 69 (31) percent of market centres have below 100 shops and remaining 17.9 percent of total market centres have 100 - 200 size of establishments. Other three higher categories have identical number of market centres which is shown in figure.7.2 (Plate - 7.3)

Table 7.7 Percentage of different types of Government & private offices in the selected markets.

Name of the Offices	Number of market centres available	% of total are available	% to total are not available
Thana Nirbahi office (Administrative)	7	15.4	84.6
Police Station Office	9	19.8	80.2
Hospital & Health Complex	21	46.8	53.2
Telephone & Telegraph Office	11	25.3	74.7
Post Office	34	74.8	25.2
Bank	20	44.0	56.0
Non Government Organization & Other Offices	18	39.6	80.4

(F) Different Offices

In rural areas, different types of offices have grown based on market. Table 7.7 shows the important Government & private offices in different market centres. Some of the markets in rural area, grow to cater the demand of employees those are employed


NATURE OF PERMANENT SHOPS
OF SELECTED MARKET CENTRE
NUMBER OF SELECTED MARKET CENTRES
35
30
25
20
15
10
5
0
Below 1
1-2
2-3
3-4
4-5
5 Above
(0.0)
CLASS-SIZE OF SHOPS

Fig—7·2

in the market. So many market centers have administrative & Govt. offices. From field study, it is found that 15 percent of total market centres of the study area have administrative office and 20 percent of the total have grown near headquarters of police sation. About 75 percent of total market centres have post office and nearly 46 percent of them have hospital & health complex. It had been found that availability of postal services is better in majority of market centres, whereas bank facility and various private offices (39%) are available in 44 percent market centres. Nearly 47 percent of total selected market centres have medical facilities. Telegraph & telephone are available only in 25% of the total market centres in the study area. It can be stated that institutional facilities in the study are not satisfactory & inadequate.

(G) Mode of Transport

Most of the markets are situated by the side of a river or road. Because transport and transaction of commodities and channel of distribution of commodities primarily depend on good transportations. The site of location of market is governed by the economic activities of the region. The level of markets also depends on the size of population of the village, the nature of communication system available in the surrounding areas and types of commodities brought to market for sale. Table 7.10 gives an idea about mode of communications in the market centres.

Table 7.8 : Number and its percentage of market, where various water transport facilities are available.

Name of communication	Facilities available		
	Number of Markets	available	Not available
Boat, engine boat, launches	7	15.4	84.6
Boat, engine boat	17	38.4	61.6
Boat	10	22.0	78.0
Launch etc.	11	24.2	75.8
Total	**45**	**100**	—

From table 7.10 it is visualised that all the markets centres in the district have been connected with water route and only 7 (15.4%) market centres have all kinds of transport facilities. It is also noticed that 38.4 percent of total selected market centres have both boat & engine boat facility and remaining 22 percent of total market centres have only boat route. About 24 percent of total market centres are connected with launches.(Plate 7.1)

Plate 7.3 Housing pattern of police station headquarter market (Rayenda)

Plate 7.4 Damaged road of Chulkati market

(H) Connecting approach road with market centres

The market place is generally connected with many other neighbouring villages by road for easy transporting of commodities. It is found that all the markets in the district are connected with either Pacca or Kacha roads and sometimes with National High Ways. Table 7.9 shows the connectivity of market centres.

Table 7.9 : Number & Percentage of approach connecting road of selected market

SL. No.	Name of the Communication	Number of the Market	Percentage
1	Railway, Motor road & metalled	3	6.6
2	Motor road, metalled road	26	57.9
3	Metalled road	16	35.5
	Total	**45**	**100**

From table, it is noticed that 57.9 percent of total market centres are connected with motorable & metalled roads. About 35.5 percent of total market centres have Kacha road. Only 6.6 percent of total market centres are connected with all three types of communications means railways, motorable roads & metalled roads. Railway connection is not available in all the police stations but only 3 market centres of Bagerhat Police Station have railway connection. Though this road transport facility is available in many markets but their facility is very limited. So bulk of commodities are transported to markets by rickshaw-van and porters (plate - 7.4).

7.3. DURATION OF MARKETING OUR OF SELECTED MARKET CENTRES

Markets are period i.e. duration of marketing on the day depends on demand of its hinterland. Thus, temporal distribution of market centres, which is related with time context is the outcome of demanding perodicity in the area (Sultana, 93). All the markets are based upon in time period : morning, noon or evening. The duration of time fluctuates the market activities. On the basis of duration of marketing, the selected markets are classified into five categories. There are :

(1) Afternoon to Evening (4 hours)
(2) Noon to Evening (5 hours)
(3) Noon to after Evening (7 hours)
(4) Late morning to Evening (11 hours)
(5) Morning to Evening (12 hours)

Plate 7.5 Foot path Stationary shop at Khontakata market in 'Eid' festival 'hatday'.

7.6 Evening market at Fakirhat (Petty traders selling hilsha fish)

Analysing the data of selected markets, the late morning to evening markets have been eight markets. It is upsurge from 10 a.m. to 2 p.mon hat days. Markets with durational fixations are shown in table 7.10. and diagram 7.3. Of the selected markets in the district, 4 markets of 5th category are situated one each in police station. headquarters. These types of markets are economically important. These markets are located in Chitalmari, Jattrapur, Fakirhat & Morrelgonj Police Stations. Maximum number of markets belongs to the lower status. The pick hour of these markets are normally 5p.m to 6 p.m. Only three markets having 3rd order category are Badal, Signboard & Boudomari.(Plate - 7.5)

Table 7.10 : Durational Class of selected market centres

Category	Class Name	Duration time	Total time (hours)	Number of markets	% to total
1st	Afternoon to Evening	3 pm to 6 pm	3	19	42
2nd	Noon to Evening	2 pm to 6 pm	4	11	24
3rd	Noon to after evening	12 am to 7 pm	7	3	7
4th	Late Morning to evening	8 am to 7 pm	11	8	18
5th	Morning to Evening	7 am to 7 pm	12	4	9
Total	—	—	—	**45**	**100**

From table 7.10 it is found that 4th category markets are : Chulkati, Mansha, Kachua, Garfa, Chila, Khanjahanali, Fakirhat & Rayenda. It is a admixture of lower & medium status markets. There are eleven 2nd category markets, which are : Daypara, Karapara, Barasia, Betaga, Jonjonia, Nagorkandi Baniakhali, Gilatala, Gangni, Khontakata & Rajapur. The durational time of markets varies, from sun rise to sunset. The diagram 7.3 shows the duration of individual 45 markets in the study area. It is concluded that on the basis of durational class of markets 5th category markets are most important in in the study area.

7.4. RELATION BETWEEN BID-VALUE AND PERMANENT SHOPS OF SELECTED MARKETS.

Government give the lease out the markets on auction or auction-bid to the Izardar or local people. The auction-bids is generally conducted by the Deputy commissioner's office (Large market above one lakh taka). The auction caller collects money from the

DURATION OF MARKETING HOURS

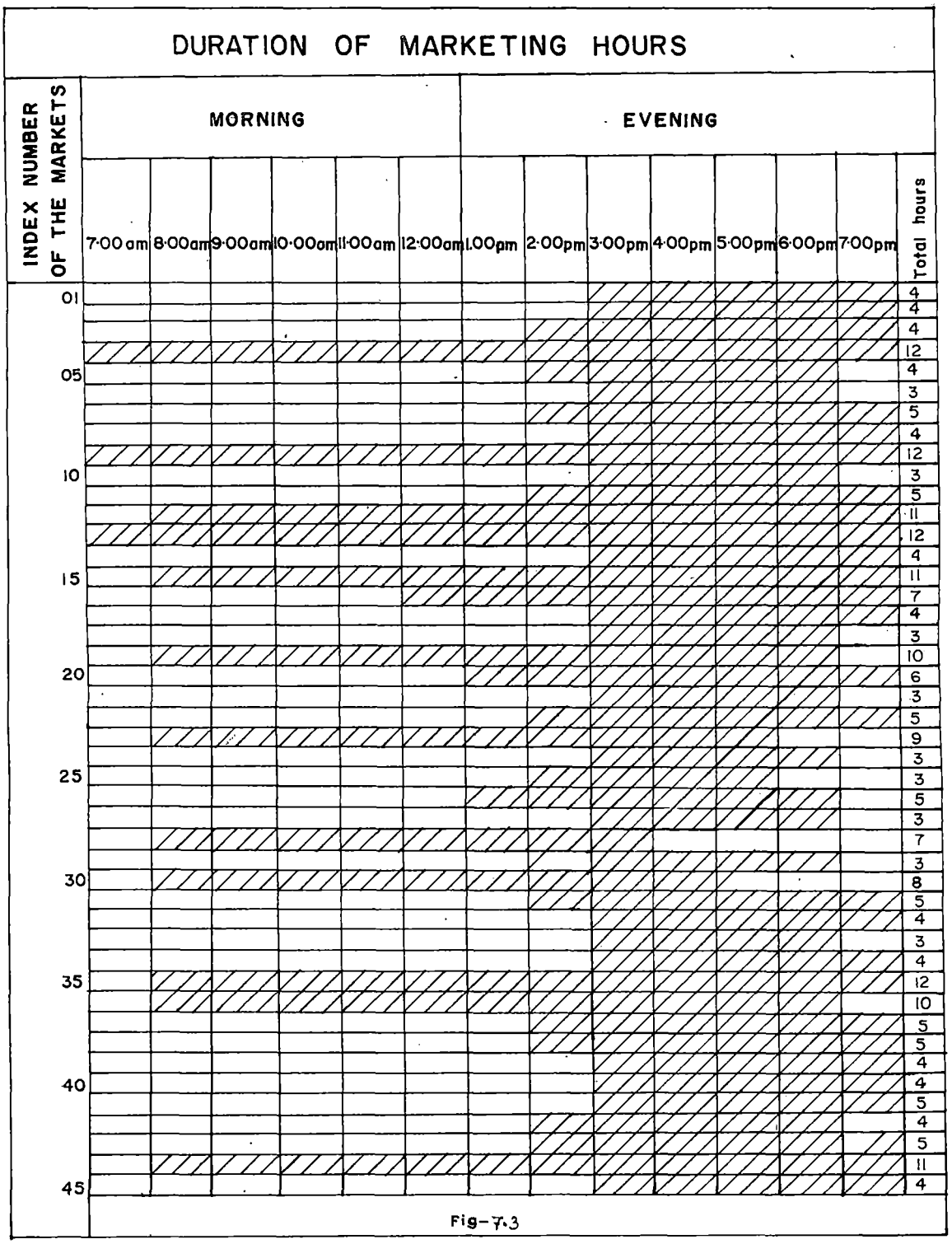


Fig-7.3

sellers on hat-day. The amount of rent collection varies from market to market. Usually, the rate of rent is 4 percent per-selling amount of goods.

The bid value is the most important factor to determine the market standard. From the field study, it is clear that there is a good relationship between the bid values & permanent shops of market centres. It is observed that market centres having lower bid-value have fewer shops and vice-versa (Fig 7.4). The value always depends on the transaction of money & number of shops. Most of the market centres having bid value of one lakh 'taka' have permanent shops in the range of below 200 shops. The temporary shops varies on seasons. The relationship between total number of shops (permanent and temporary) and bid values is not satisfactory. (Fig 7.4) Because number of temporary shops always varies from season to season and local production.

From analysing the data, it is observed that bid value or revenue collection from market centres is most important sign for measuring the transaction of market commodities.It reveals that the bid value of market centres determines the grade of hierarchy of markets. The level of market centres and the range of bid value are shown in table 7.11.

Table 7.11 : Level of selected market centres according to bid-value

(Bid-value ' 000' taka)

Rank	I	II	III	IV	V
Name of the P.S.	>1	1 - 50	50 - 100	100 - 200	200 above
1. Bagerhat	—	2	—	2	1
2. Chitalmari	1	1	2	—	1
3. Fakirhat	—	—	2	1	2
4. Kachua	—	—	2	2	1
5. Mongla	1	4	—	—	—
6. Mollahat	—	5	—	—	—
7. Morrelgonj	1	2	1	—	—
8. Rampal	—	5	—	—	1
9. Sarankhola	—	2	1	1	1
Total	**3(7%)**	**21(49%)**	**8(18%)**	**6(13%)**	**6(13%)**

It is found that only three market centres have bid value below one thousand 'taka'. Bid value of 21 markets, (49 percent) are in the range of 1000 to 50,000 'taka'. Only 6 market centres (13 percent) are in the range of between 2 lakh and 8 lakh (Fig - 7.5). It can be concluded that the majority of markets have moderate bid-value due to there poor infrastructure. (Appendix table -XIV)

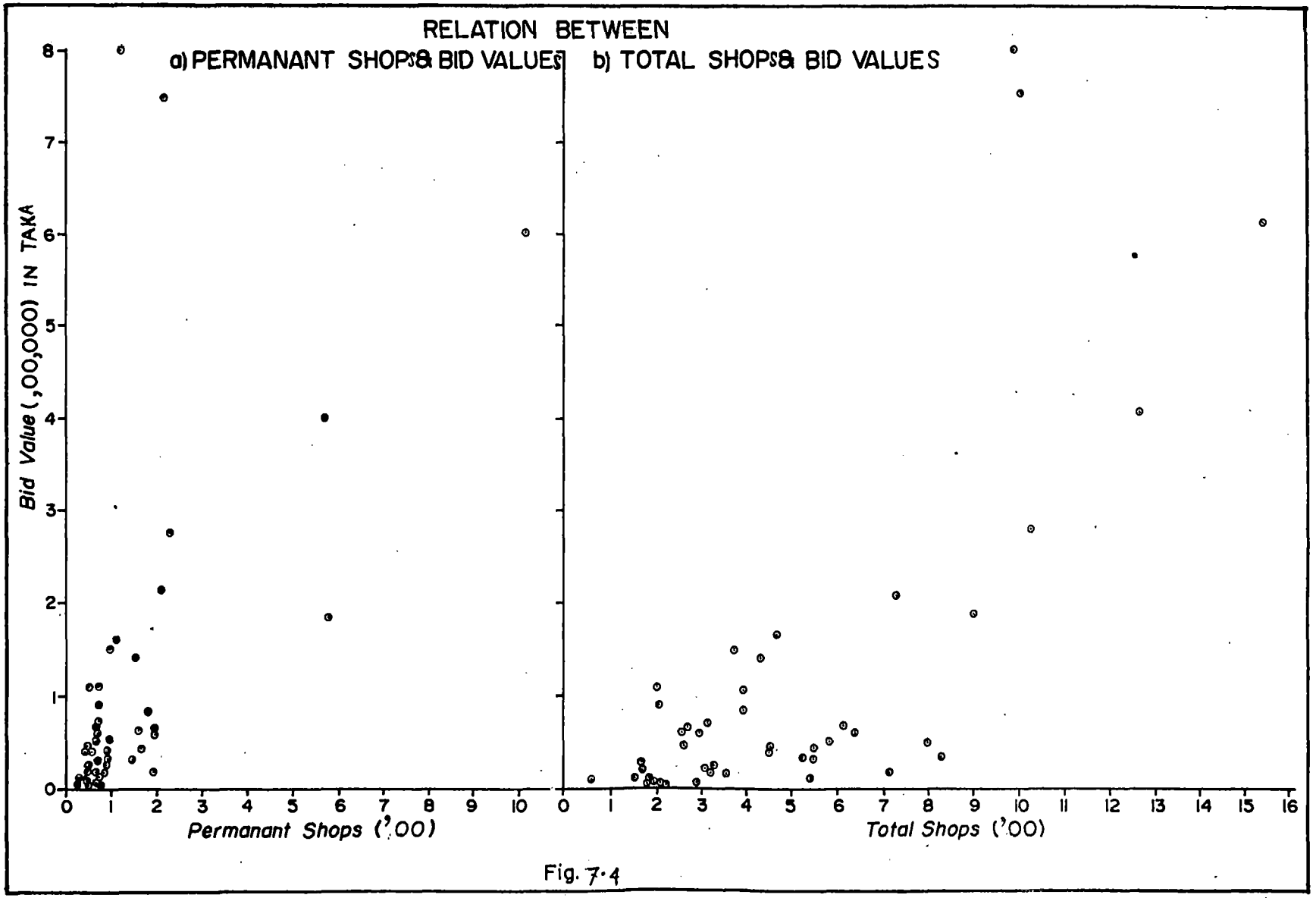

RELATION BETWEEN
a) PERMANANT SHOPS & BID VALUES
b) TOTAL SHOPS & BID VALUES
Bid Value (,00,000) IN TAKA
0
1
2
3
4
5
6
7
8
Permanant Shops ('00)
0 1 2 3 4 5 6 7 8 9 10
Total Shops ('00)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Fig. 7·4

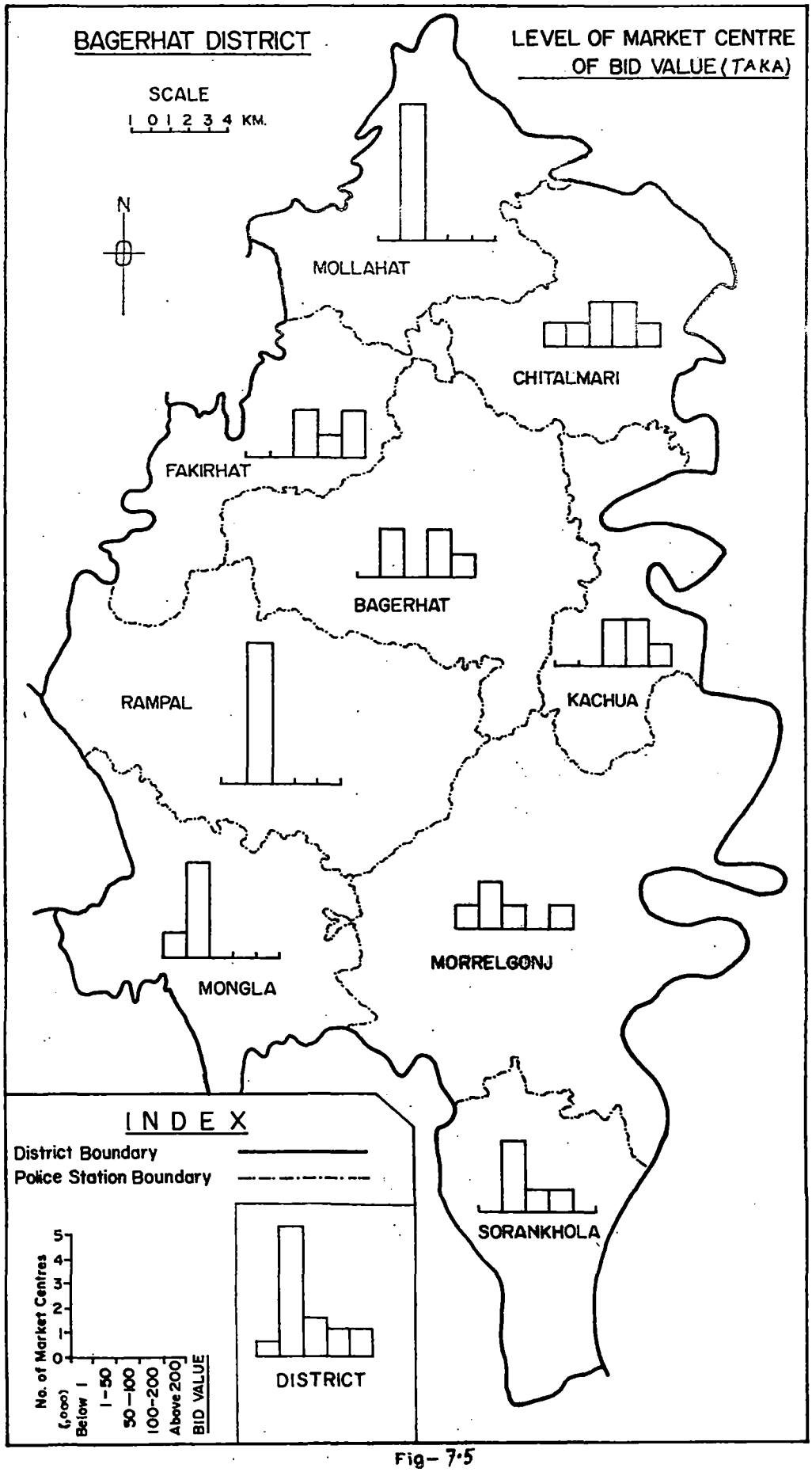

BAGERHAT DISTRICT
LEVEL OF MARKET CENTRE
OF BID VALUE (TAKA)
SCALE
1 0 1 2 3 4 KM.
N
MOLLAHAT
CHITALMARI
FAKIRHAT
BAGERHAT
RAMPAL
KACHUA
MONGLA
MORRELGONJ
SORANKHOLA
INDEX
District Boundary
Police Station Boundary
No. of Market Centres
0
1
2
3
4
5
(,000)
Below 1
1-50
50-100
100-200
Above 200
BID VALUE
DISTRICT

Fig- 7·5

7.5. LEVEL OF MARKET CENTRES IN DIFFERENT PARAMETRES

From analysis it is observed that the market centres are poorly developed in the region. On the basis of seven parametres, the market centres of the district can be categorised into five level to assess their level of development . On the basis of there parametres of the markets in a police station the standard and level of police stations in the district have been assessed. All the parametres of the market directly or indirectly help to grow the market centres as service centre and indirectly play an important roll in development of police station. The selected parametres are as follows :

(i) Permanent shop per market.
(ii) Temporary shop per market
(iii) Attendance on hat day per market
(iv) Command Population served per market
(v) Command area or Zones of influence of market
(vi) Bid-value or cash collection in a year per market and
(vii) Hat days of market in a week.

Each parameter has been categorised into different functional score value. Different gradings have been gives in the parameter value of market centres. From the field study, it is observed that all the market centres are not of equal functional values. Combined values of seven parameters have been utilized to identify the differential level of score value of market centres (For detail refer Appendix table XV). They differ in number of functional variety. So growing of each parametre of market centre into hierarchical levels has been made on the basis of total values. And the score value of individual market centre has been assessed. Broadly, the lowest value of permanent shops e.g. 1 - 100 shops are given one weightage score and the highest value of weightage i.e. 10 is given to 500 & above shops. (Appendix table XV). In this way the weightage of each parameter is given according to the number of functions e.g. temporary shop, attendance of market,command area command population, market days and bid values of market centres. After calculating the total weightage value of each selected market centre there have been categorised in different hierarchical levels. (table 7.12). (Barry, 58). Out of 45 selected markets, 6 have high score value and three markets have very low score value. It is also found that most of the selected markets (24) are in the range of 15 - 25 score (Diagram 7.6). It is noticed that two market centres (Fakirhat

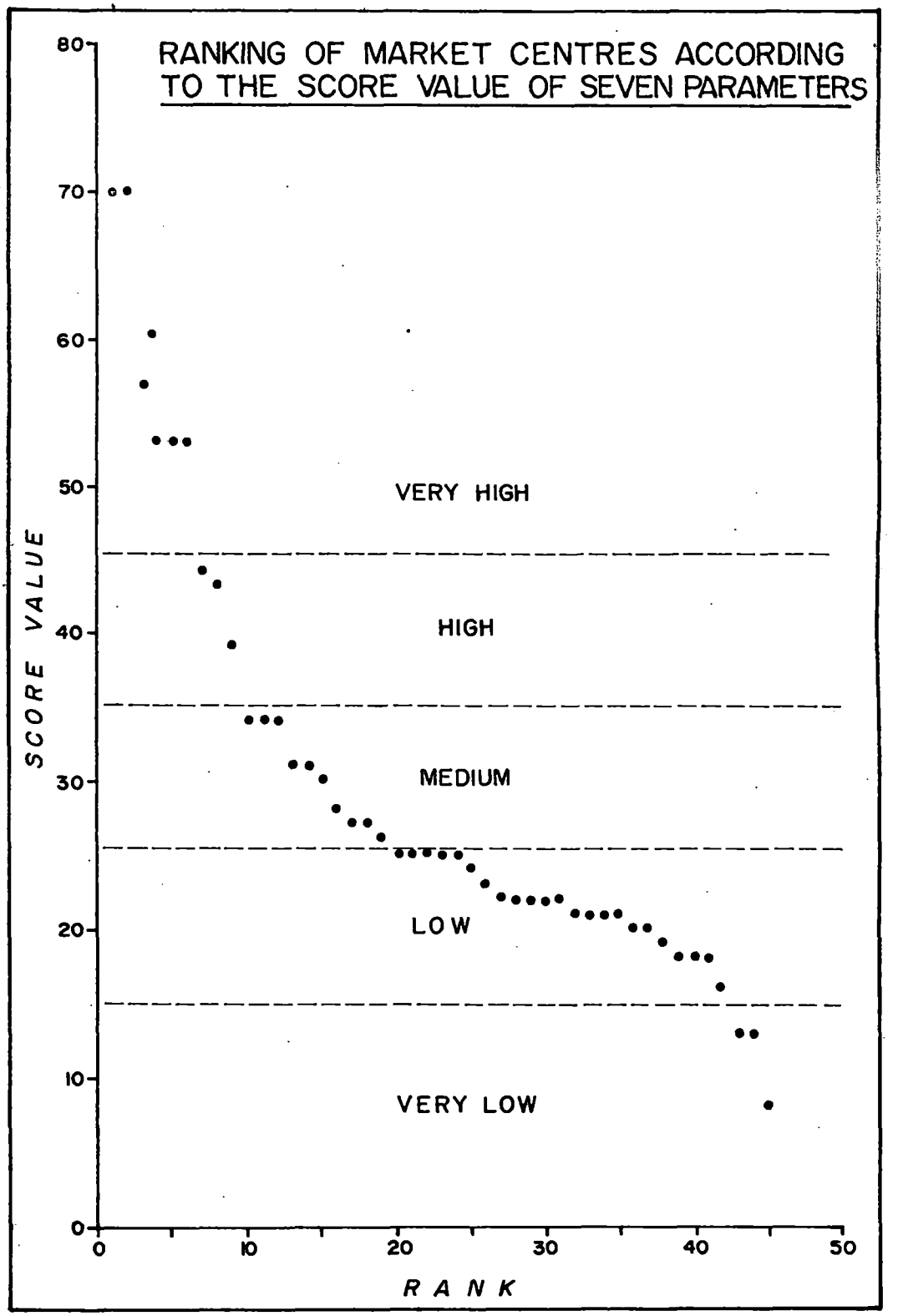


Fig.-7.6 Ref Table No 7.12

& Morrelgonj) have very high score value. The categories of the markets are shown in table 7.12.

Table 7.12 Number and percentage of market centres in different categories of weightage.

Category	Score range	Number of market cemtres	Percentage
Very low	0 - 15	3	7
Low	15 - 25	24	53
Medium	25 - 35	9	20
High	35 - 45	3	7
Very high	45 & above	6	13
Total	—	**45**	**100**

Table 7.12 reveals that 60 percent of market centres (27) are in the low category (low & very low). Out of 45 market centres, 20 percent are both high and medium category. It is also found from the field study, that the category of market centres depends on functions, those are directly help in the development of command area of market. Studying the market centres of the district it is found that Fakirhat has the high score value among the selected market centres. On the contrary all the market centres of Mongla police station are low score value. In case of Rampal police station, the score value of Bhaga market centre is very low (only 8) (Appendix table - XVI).

7.6.1. LEVELS OF SELECTED MARKET CENTRES OF FUNCTIONAL UNITS

For the purpose of assessment of potentiality of market centres, several functional attributes are selected. The different functional attributes with their weightage score are tested. (Table No. 7.15). Then score value ranges from 1 to 10 in a progression variation. The highest value of function is identified in accordance with their importance and the purpose of threshold or command area of the market function. Broadly, the lowest level in the category of educational institutions is a primary school and that of a higher level is a Degree College. Between these, there, are junior school, high school and intermediate college. So if the weightage value of 1 is given to primary school, the Degree college is given 10 weightage. In this way the weightage of each function is given according to its degree of importances and interaction with others (Jana, 78). The values have been arranged in Appendix table -XVIII. Based on this scaling technique all identified functions have been scored in each market centre. The market centres of

Bagerhat district 67 categories of functions (Appendix table - XVII). Finally, calculated score values are worked out to ready assessment of individual market centre and total. Selected market centres (45) are grouped into different grades (Biswas, 77, Nagabusanum, 86). The hierarchy of market centres and their number are shown in table - 7.13.

Table 7.13 : Level of market centres

Level of Market Centres	Score range	Number of market Centres
First	Below 200	12
Second	200 - 400	18
Third	400 - 600	6
Fourth	600 - 800	5
Fifth	800 - above	4
Total	—	**45**

Table 7.13 shows that the number of market centres has been decreased with an increase of their hierarchy. (Fig 7.7). The number of market centres at highest level is only 4, whereas in the second highest level their number is 5. Number of 3rd & 4th level market centres are 6 and 18 respectively. Remaining 12 markets centres are in the lower level e.g. first level. An interesting facts emerging from the study that the government offices influences on determination of the hierarchical level of market centres. The distribution of market centres on different levels in different police stations have been shown in the table 7.14

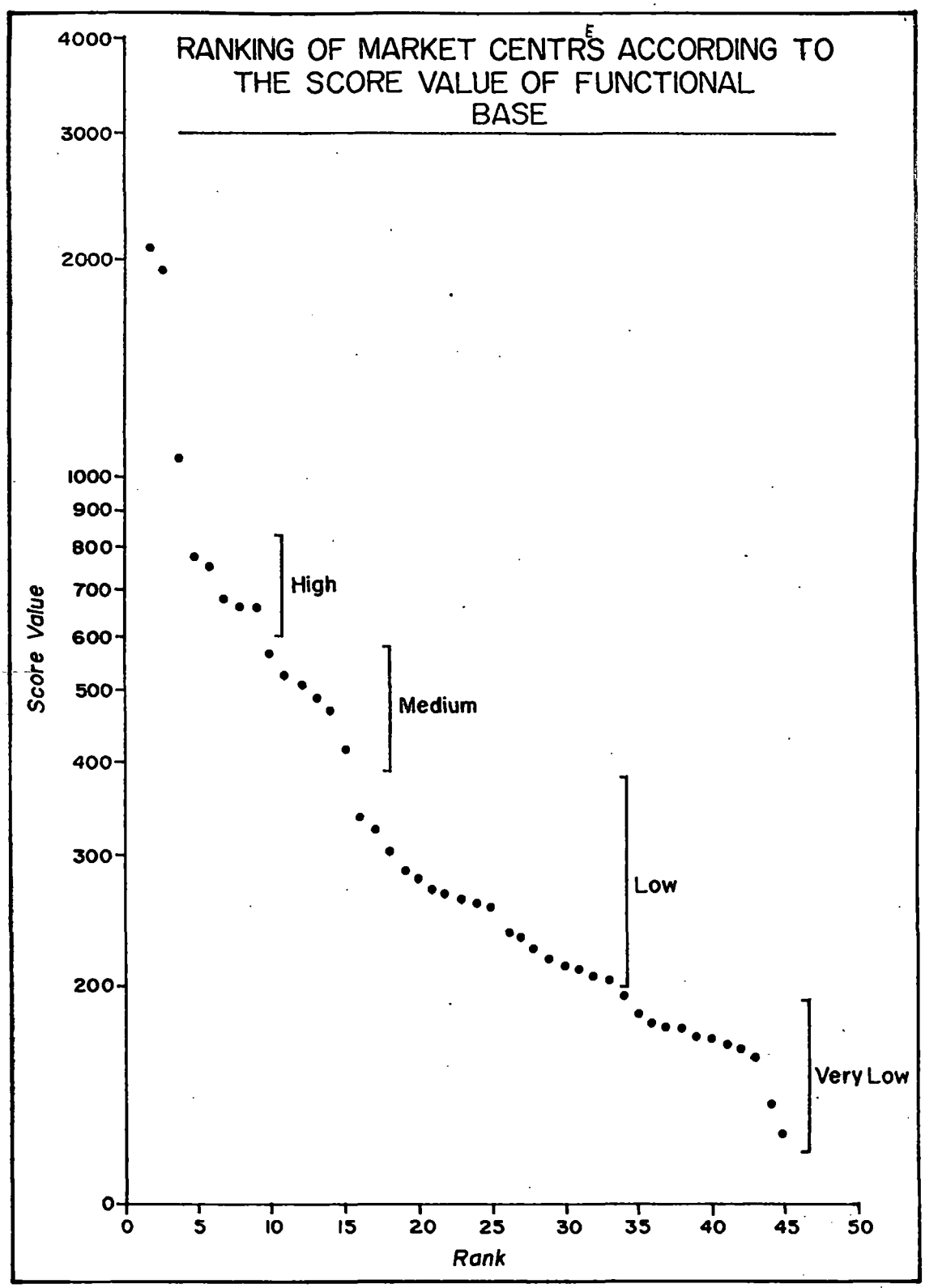

RANKING OF MARKET CENTRES ACCORDING TO THE SCORE VALUE OF FUNCTIONAL BASE
Score Value
Rank
4000
3000
2000
1000
900
800
700
600
500
400
300
200
0
0
5
10
15
20
25
30
35
40
45
50
High
Medium
Low
Very Low

Fig. 7-7

Table 7.14 : Police Station wise distribution of market centres

Sl No.	Name of P.S.	Levels First	Second	Third	Fourth	Fifth
1.	Bagerhat	Cienbe, Barakpur Karapara	Daypara	x	Jattrapur	x
2.	Chitalmari	Barashia	Nalua, Bakergonj Barobaria	x	x	Chitalmari
3.	Fakirhat	Betaga	Lakpur	Mansha	Chulkati	Fakirhat
4.	Kachua	x	Signboard, Gojalia, Goalmat	Badal	Kachua	x
5.	Mongla	Banishanta, Chilahat	Baiddomari, Digraj Khanjahan Ali	x	x	x
6.	Mollahat	x	Chungola, Nagorkandi, Gangni, Nasuakhal	Garfa	x	x
7.	Morrelgonj	Kalikabari	Banishanta	Daiboghali Fulhata	x	Morrelgonj
8.	Rampal	Janjania, Baga	Gilatala	x	Rampal Failahat	x
9.	Sarankhola	Rajapur, Khonta-kata	Amragasia	Tafalbari	x	Rayendra

From table, 7.14 it is found that the 5th level markets ~~(7.14)~~ are situated only at the police station headquarters. These are Chitalmari, Fakirhat, Morrelgonj & Rayenda. Five market centres of 4th level are distributed in 4 (four) police stations. Out of these 5 centres 2 are located in large villages. It is also noticed that 6 market centres of 3rd level are identified and one of them is located at P.S. headquarters. A large number of 2nd level market centres (18) are unevenly distributed in the study area. Finally, it is found that 1st level market centres (12) are few compared to second level market centres.

Table - 7.15 Level of functions in the market centres of the district

Ist level functions (lowest)

(1) Primary school (2) Maktob (Private school) (3) Medicine shop (4) Homeopathi shop (5) Requested bus stops (6) Grossary (provision store) (7) Tailor (8) Sweet shop (9) Tea-stall. (10) Food hotel (11) Stationary shop (12) Foot ware (13) Pan bidi shop (14) Clothes & garments (15) Black-smith (16) Gold-smith (17) Fish depot (18) Gur shop (Molasses) (19) Carpenter.

2nd level functions (Middle)

(20) Secondary school (21) Charitable hospital (22) Branch post offices (23) Veterinary hospital (24) Bus stop (25) Cycle repairing (26) Union Parishad Office. (27) Doctor & Druggists (28) Rice-mill (29) Saw mill (30) Oil mill (31) Wood depot. (32) Saloon (33) Radio & watch repair shop (34) Shoe shop (35) Bedding shop (36) Furniture making shop.

3rd level functions (Highest)

(37) Higher secondary school (38) Family Planning office (39) Studio (40) Photo copy (Xerox) (41) Picture framing shop (42) Furnitures shop (43) Electrical goods shop (44) Book shop (48) Poultry (49) Bakery (50) Laundry (51) Pottery (52) Agricultural Input shop. (53) Motor repair shop (54) Whole sale medicine shop.

4th level functions (special)

(55) Degree College (56) Administrative office (57) Police Station Headquarters (58) Hospital (with beds) (59) Veterinary clinic (60) Telephone & Telegraph Office(61) Bank (62) Government office (63) Private office (64) Railway station (65) Bus terminus (66) Petrol pump (67) Cinema hall (68) Printers (69) Vedio shop (70) Hotel (Lodging).

7.6.2 Dominant function & functional gaps

From analysis of score value of selected market centres, it is observed that they have been grown on some specific functions (Jana,78). From field survey it is also found that all functions are not available in all selected markets (appendix table - XVIII). A few number of markets centres have various functions. It is also seen that generally lower order functions are available in all lower order market centres, but a few are in exception. As a result,both higher and lower level functions are always available in the higher order market centres. (B. Bhattacharyya, 1972). The market centres in the study area are categoried on the basis of dominant functions which can be revealed from table 7.16.

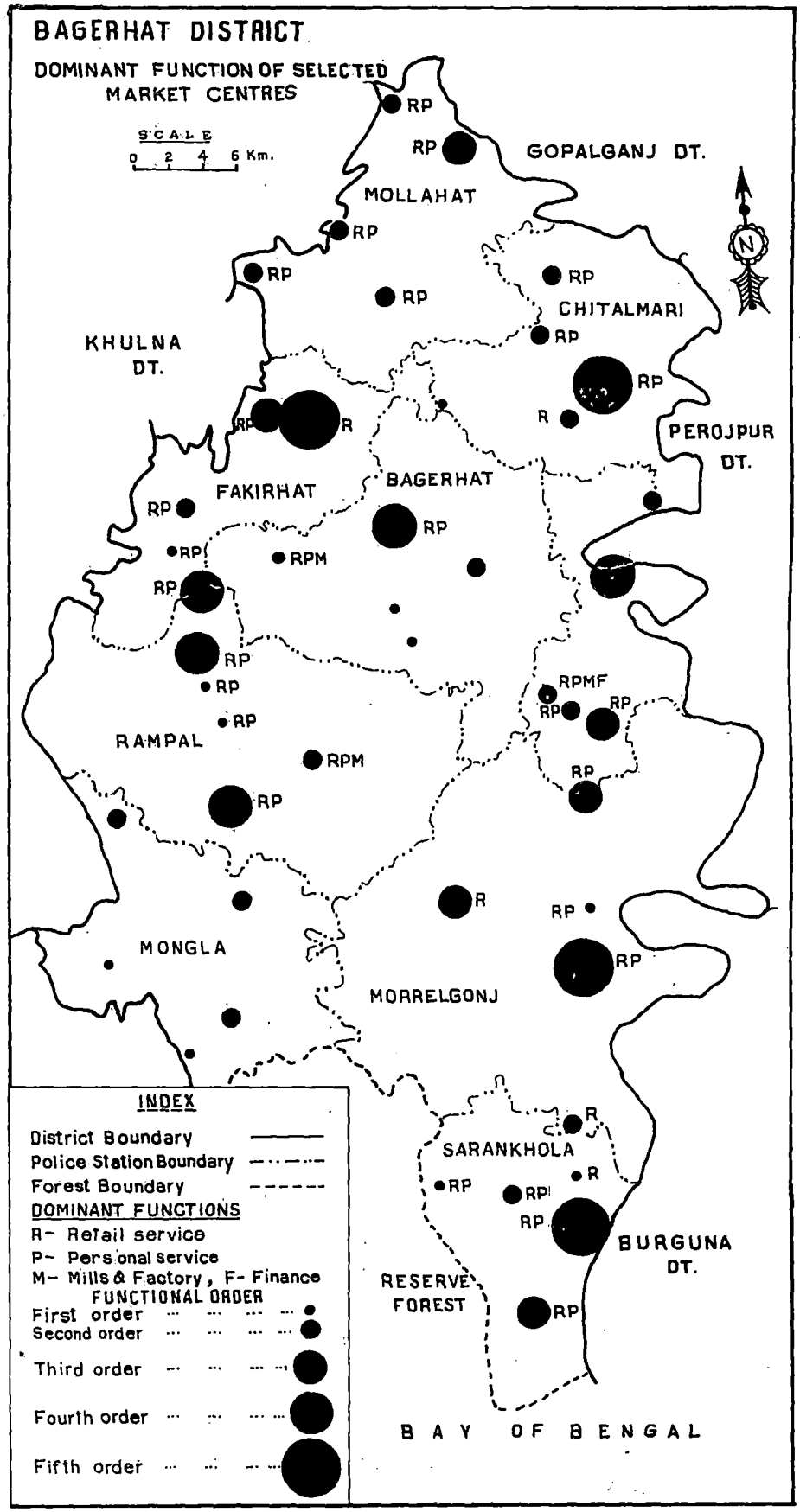

BAGERHAT DISTRICT
DOMINANT FUNCTION OF SELECTED MARKET CENTRES
SCALE
0 2 4 6 Km.
N
GOPALGANJ DT.
MOLLAHAT
CHITALMARI
KHULNA DT.
PEROJPUR DT.
FAKIRHAT
BAGERHAT
RAMPAL
MONGLA
MORRELGONJ
SARANKHOLA
RESERVE FOREST
BURGUNA DT.
BAY OF BENGAL
INDEX
District Boundary
Police Station Boundary
Forest Boundary
DOMINANT FUNCTIONS
R- Retail service
P- Personal service
M- Mills & Factory, F- Finance
FUNCTIONAL ORDER
First order
Second order
Third order
Fourth order
Fifth order

Fig-7.8

Table 7.16 Name & Percentage of dominant functions of selected market centres.

Symbol of function	Number of market centres	Percentage to Total
R	7	15.7
R,P	33	73.3
R,M	1	2.2
R.P.M.	2	4.4
R.P.F.	1	2.2
R.P.M.F.	1	2.2
Total	**45**	**100**

R - Retailing, P - Personal service, M - Mills & factory, F - Finance

It is visualised from table 7.16 that four types of dominant functions viz - retail service, personal service, mill & factory and finance are available only in one market centre. It is noticed that seven market centres have only retail service as dominant functions and 33 (77%) market centres have both retail and personal services as dominant functions. And only two market centres have three (Retail, Personal, Mills) dominant functions (Fig 7.8). It is interesting to note that Khontakata market centre has no personal service (Appendix table - XVIII). It is also found from table that transport & communication, health service, education and others functions are not dominantly available in all the market centres (Appendix table - XVIII). It can concluded that majority of market centres are dominated by retail services.

7.7. SPATIAL STRUCTURE OF MARKET CENTRES

As regards the morphology of markets, it is a compact but linear type settlement, extending with half km^2 area. The market place is the centre place for neighbouring villages (Saxena, 74). It is related between man and services by functional activities. The structure of markets is comprising many functional units, i.e. offices, variety of shops and others establishments. Several varieties of commodities are available and groups of traders are found to be transacted in the market place. These major varieties shops are:

(1) Grocery (2) Clothes & garments (with tailor) (3) Hotel & restaurant (4) Grain shop (Rice, Pulse, Wheat) (5) Vegetables & fruits. (6) Ornaments & Jewellery (7) Black smith (8) Barber or Saloon (9) Drug or pesticide (10) Shoes and foot ware (11) livestock, (Cows, goat buffaloes, ships, chicken etc.) (12) Forest Products (Fire wood, timber,

7.7 Dilapidated structure house of market at Khanjahanali.

7.8 Water stagnation at the market place in rainy season in Noapara 'hat'

Furniture) (13) Mills & factories and (14) Miscellaneous shops.

Detail morphological studies have been made in nine markets, which have been shown in figure 7.9 - 7.18. It is observed from the study that small markets differ from large markets. Large markets consist of large size establishments. Majority of retailing markets are held at specific open space in the market place. There are in linear, rectangular or round shape (Plate - 7.6). Lower category markets have small number of permanent shops. From the study, it is also found that a few number of markets are located at road side (Plate - 7.7) Goalmat & Signboard markets are examples of roadside markets. In case of roadside markets, the road is made widenend and the permanent shops are located along the foot path. The river bank markets are Morrelgonj, Fulhata, & Banishanta. Banishanta market is ribbon shapped and is located in the bank of the Pasur river. Large or big size markets have multifunctional activities, which held separate market node in the same market place. The congregation of this node of shops has been concentred at mainly bus stand or Government offices. (Plate - 7.8).

From the field study, it is observed that majority of markets have permanent tin shade, for temporary traders. There are two types of shades viz., Government constructed tin shade and public made 'Kacha' shade in the market. In the lower category markets, majority of the them have in temporary & private tin shades. All the large markets (Fakirhat, Rayenda, Morrelgonj) have beenfound two & three Government tin shade. (Fig. 7.9, 7.10, 7.18). The platform sellers sit in road side or footpath in the markets. It is also found that some traders sit under the personal on private shade or temporary basis only on hat days. Toilet facility and tube well are found only in a limited number of large markets in the study area. It is also observed, small size markets have no toilet facility, for consumers. Mosques and temples are constructed inside the commercial area. It is noticed that four markets have good transport connectivity. These are Fakirhat, Morrelgonj, Jattrapur and Rayenda. fig. 7.10, 7.11, 7.12 & 7.18.

Apart, it is observed that the institutions and offices are not systematically distributed in the market place. Police Station office, Post office, Hospital, High School, Girls School — all are located adjacent or sorrounding the main business area of the market place. In Garfa & Rayenda markets the college and Government offices are located about ¼ Km away from the centre of the commercial area. (Fig 7.15 & 7.18). In Kachua market, the cinema hall is located at about 2 km distance from the market place. Bank & N.

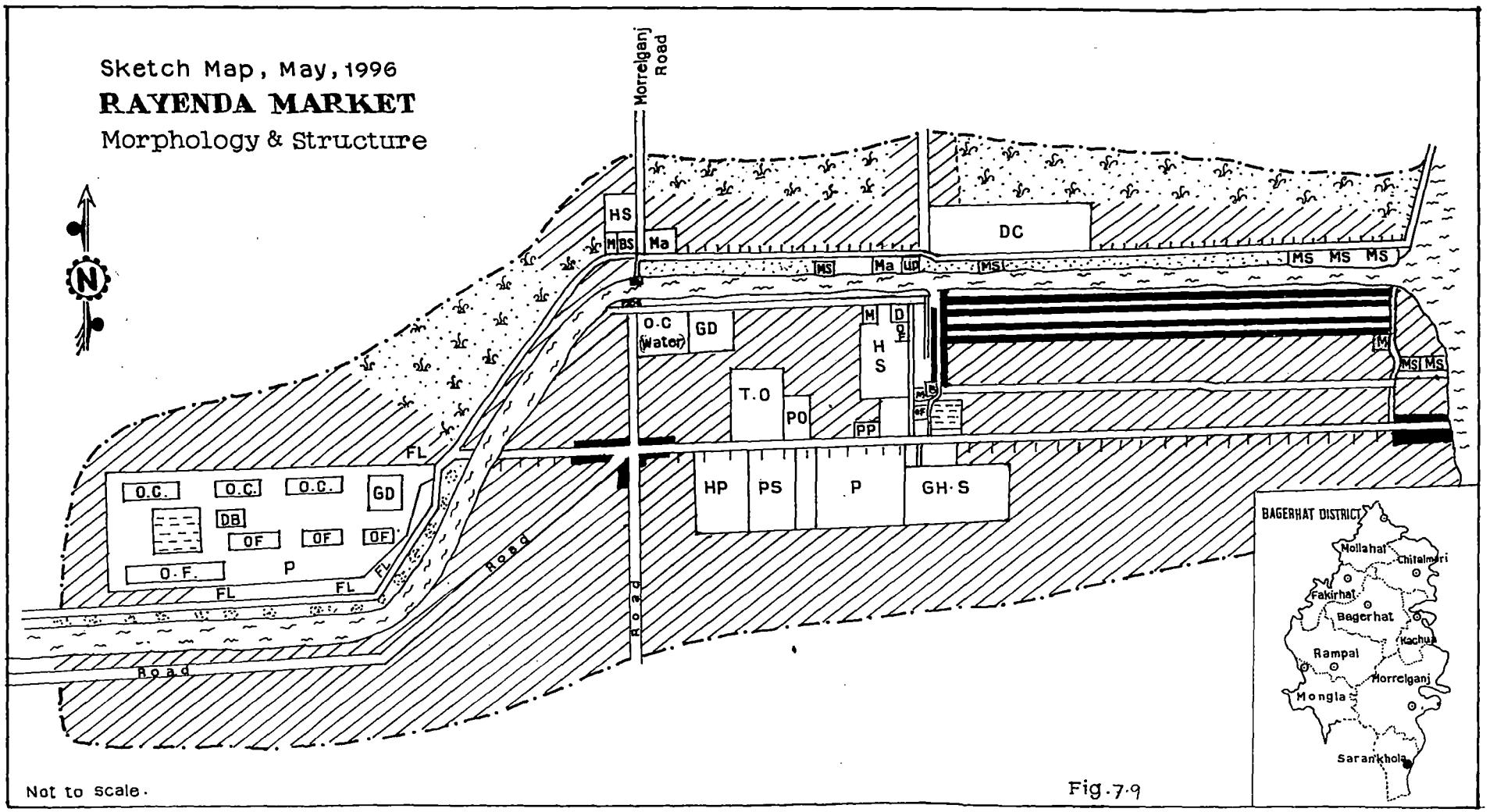
LEGEND

Permanant Shops		Fallow land	FL
Retailing Shop area	R.S.A	Alluvial land	
Retailing Shop/house	R.S	Pond	
Mills & Factories	M.S	Railway (board gauge)	
Printing Press	P.P	Rail Station	R.s.t
Police Station Office	P.S	River/Canel	
Offices	O.F	Road	
Offices & Collony	O.C	Dam	
Telephone Office	T.O	Bridge	
Post Office	P.O	Farry gate	
Bank	B	Bus Stand	B.s
Hospital	H	Rickshaw Stand	R.s
Veterinary Hospital	V.H	Rickshaw van Stand	V.s
		Degree College	D.c
Dak Banglo	D.B	Intermediate College	I.c
Godown	G.D	High School	H.s
Mosque	M	Girls High School	G.H.s
Temple	T	Primary School	P.r.s
Martyry	M.T	Madrasha	M.a
Residential Area	////		
Play Ground	P		
Agricultural land			

Sketch Map, May, 1996

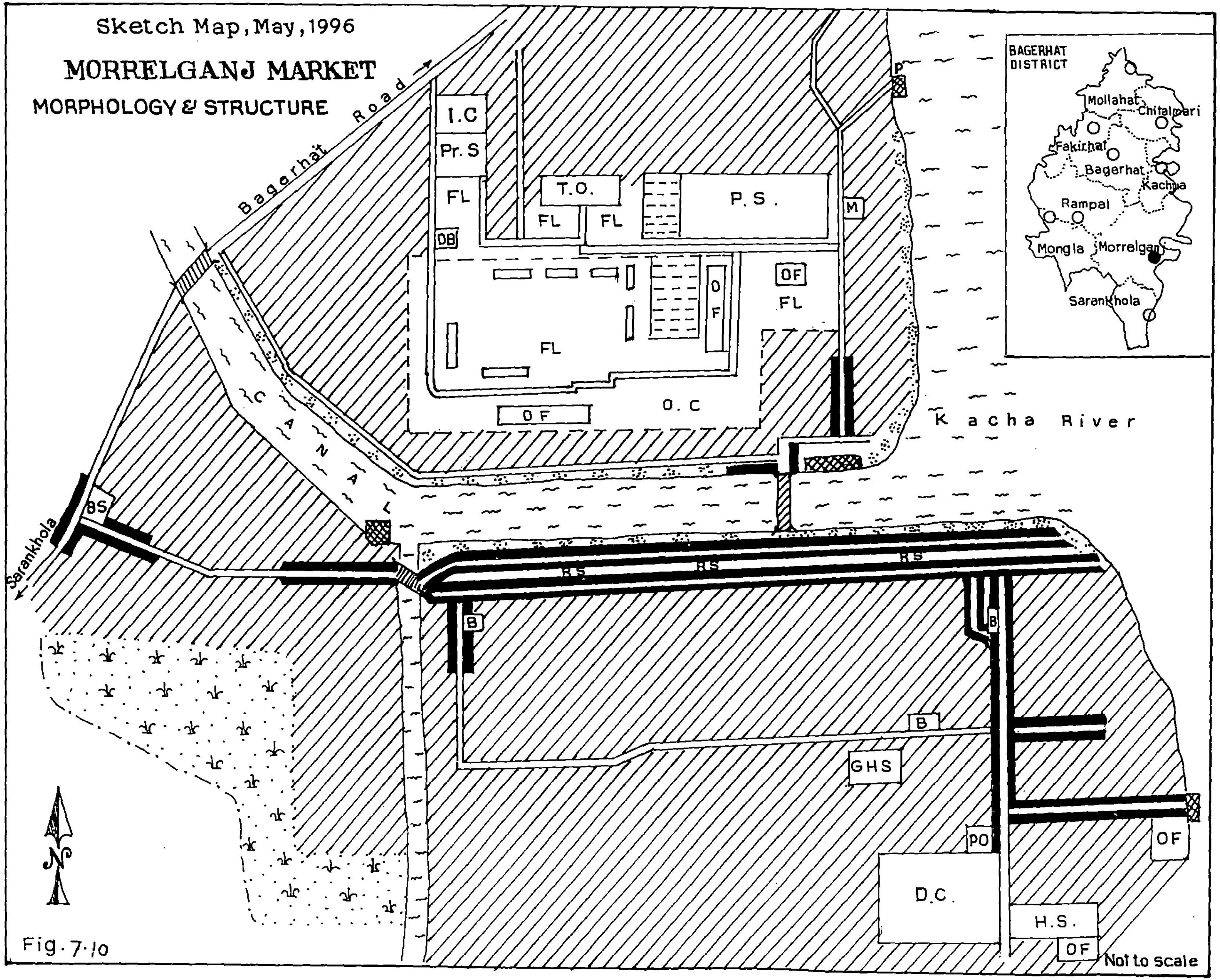
RAYENDA MARKET

Morphology & Structure



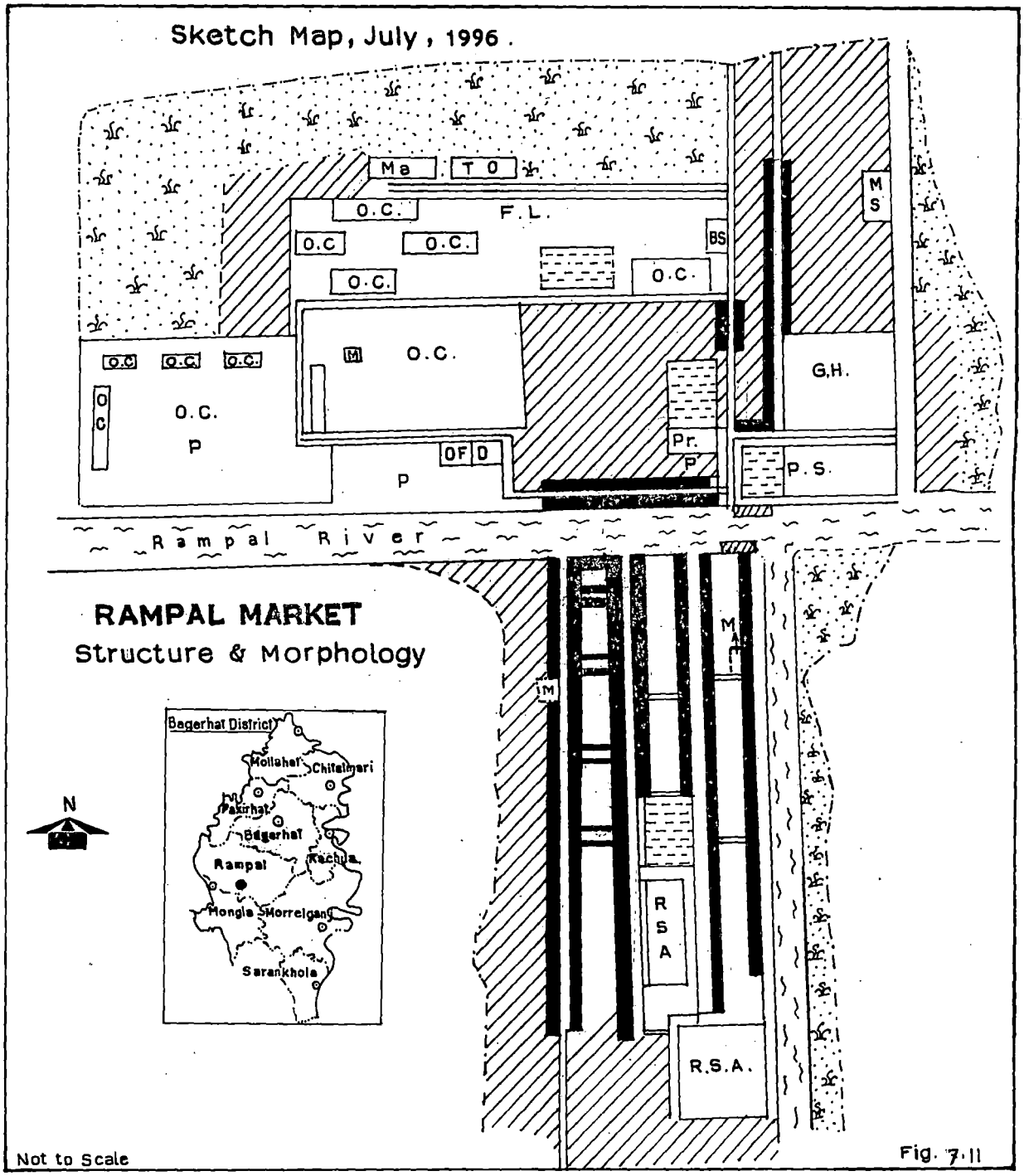
Not to scale.

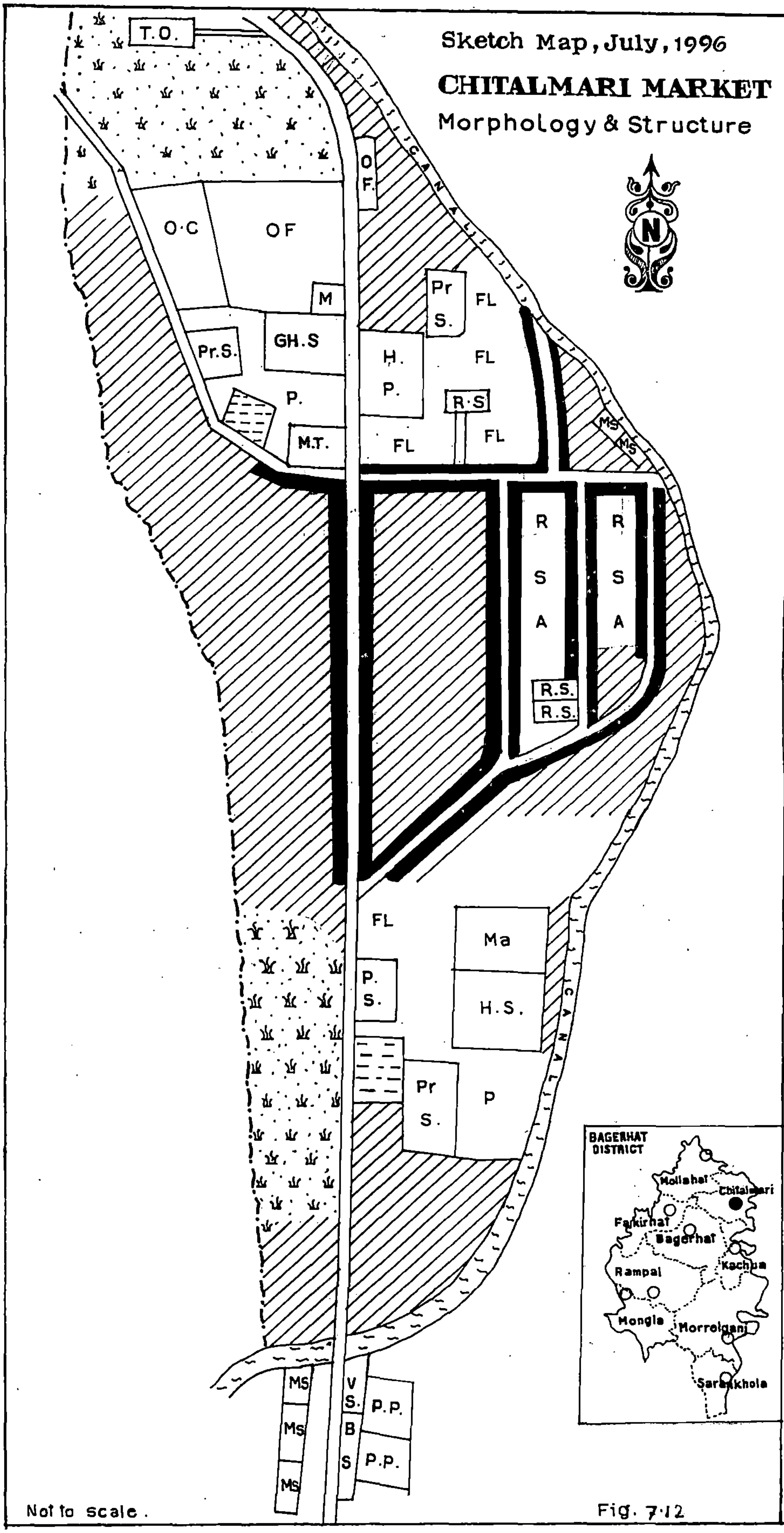
Fig.7.9



Sketch Map, May, 1996
MORRELGANJ MARKET
MORPHOLOGY & STRUCTURE
Bagerhat Road
I.C
Pr. S
FL
DB
T.O.
FL
FL
P.S.
M
P
OF
FL
O
F
FL
OF
O.C
CANAL
Kacha River
BS
Sarankhola
RS
RS
RS
B
B
B
GHS
PO
OF
D.C.
H.S.
OF
Not to scale
BAGERHAT DISTRICT
Mollahat
Chitalmari
Fakirhat
Bagerhat
Kachua
Rampal
Mongla
Morrelganj
Sarankhola
N

Fig. 7.10


Sketch Map, July, 1996.
Ma
T O
O.C.
F.L.
O.C
O.C.
O.C.
O.C.
BS
M
S
O.C.
O.C.
O.C.
O.C.
O
C
O.C.
P
M
O.C.
G.H.
Pr.
P
OF
D
P
P.S.
Rampal River
RAMPAL MARKET
Structure & Morphology
Bagerhat District
Mollahat
Chitalmari
Fakirhat
Bagerhat
Kachua
Rampal
Mongla
Morrelganj
Sarankhola
N
M
M
R
S
A
R.S.A.
Not to Scale
Fig. 7.11


Sketch Map, July, 1996
CHITALMARI MARKET
Morphology & Structure
N
T.O.
O·C
OF
O F.
M
GH.S
Pr.S.
P.
M.T.
Pr S.
FL
H. P.
R·S
MS
CANAL
R S A
R.S.
Ma
H.S.
P. S.
Pr S.
P
MS
V S. B S
P.P.
BAGERHAT DISTRICT
Mollahat
Chitalmari
Fakirhat
Bagerhat
Kachua
Rampal
Mongla
Morrelganj
Sarankhola
Not to scale.
Fig. 7·12

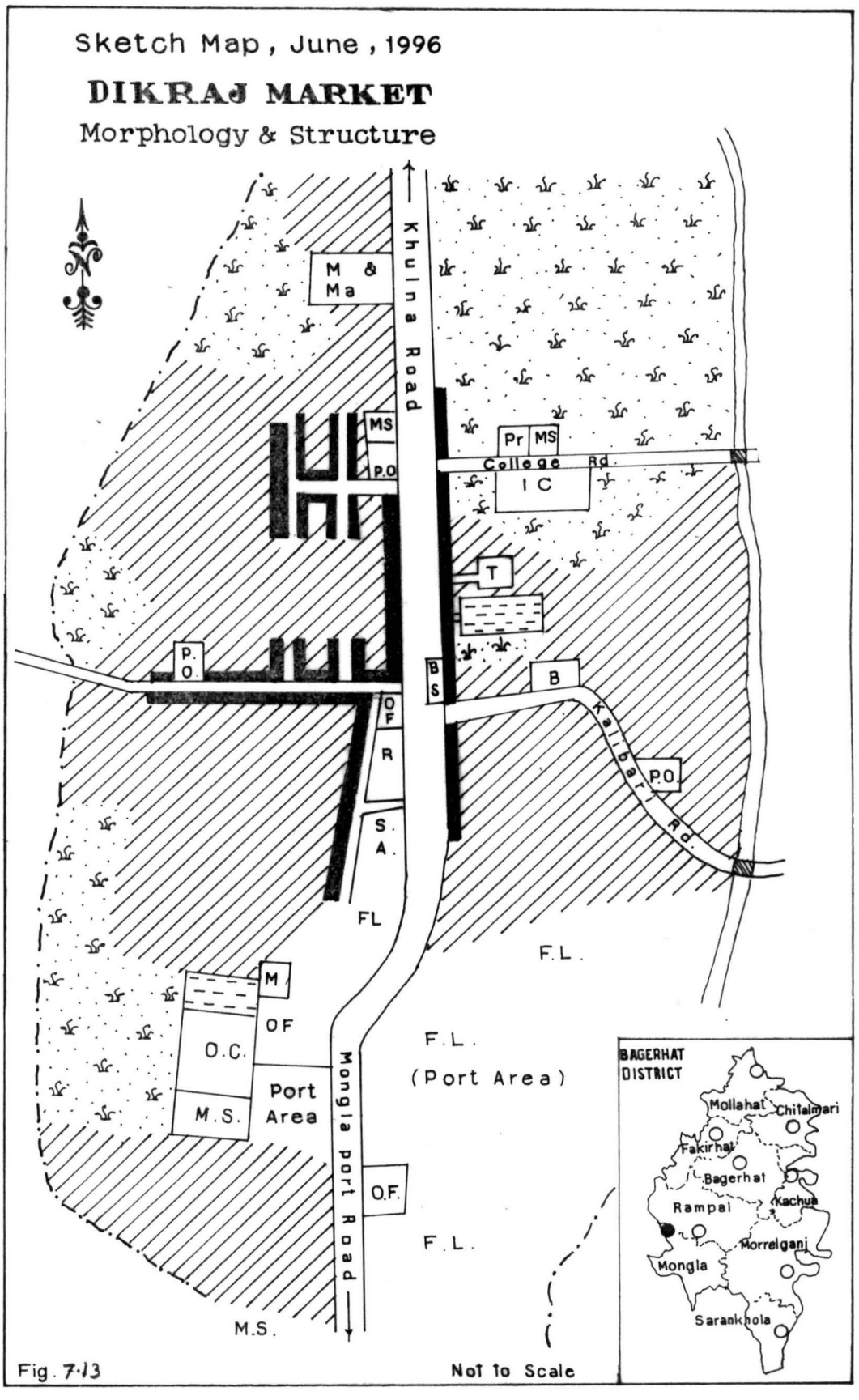

Sketch Map, June, 1996
DIKRAJ MARKET
Morphology & Structure
Khulna Road
M & Ma
MS
P.O
Pr
MS
College Rd.
I C
T
P. O
BS
B
O F
R
S. A.
FL
Tallbari Rd.
P.O
F.L.
M
OF
O.C.
Port Area
M.S.
F.L.
(Port Area)
Mongla port Road
O.F.
F.L.
M.S.
Not to Scale
BAGERHAT DISTRICT
Mollahat
Chitalmari
Fakirhat
Bagerhat
Kachua
Rampal
Morrelganj
Mongla
Sarankhola

Fig. 7·13

Sketch Map, July, 1996

JATTRAPUR MARKET

Morphology & Structure

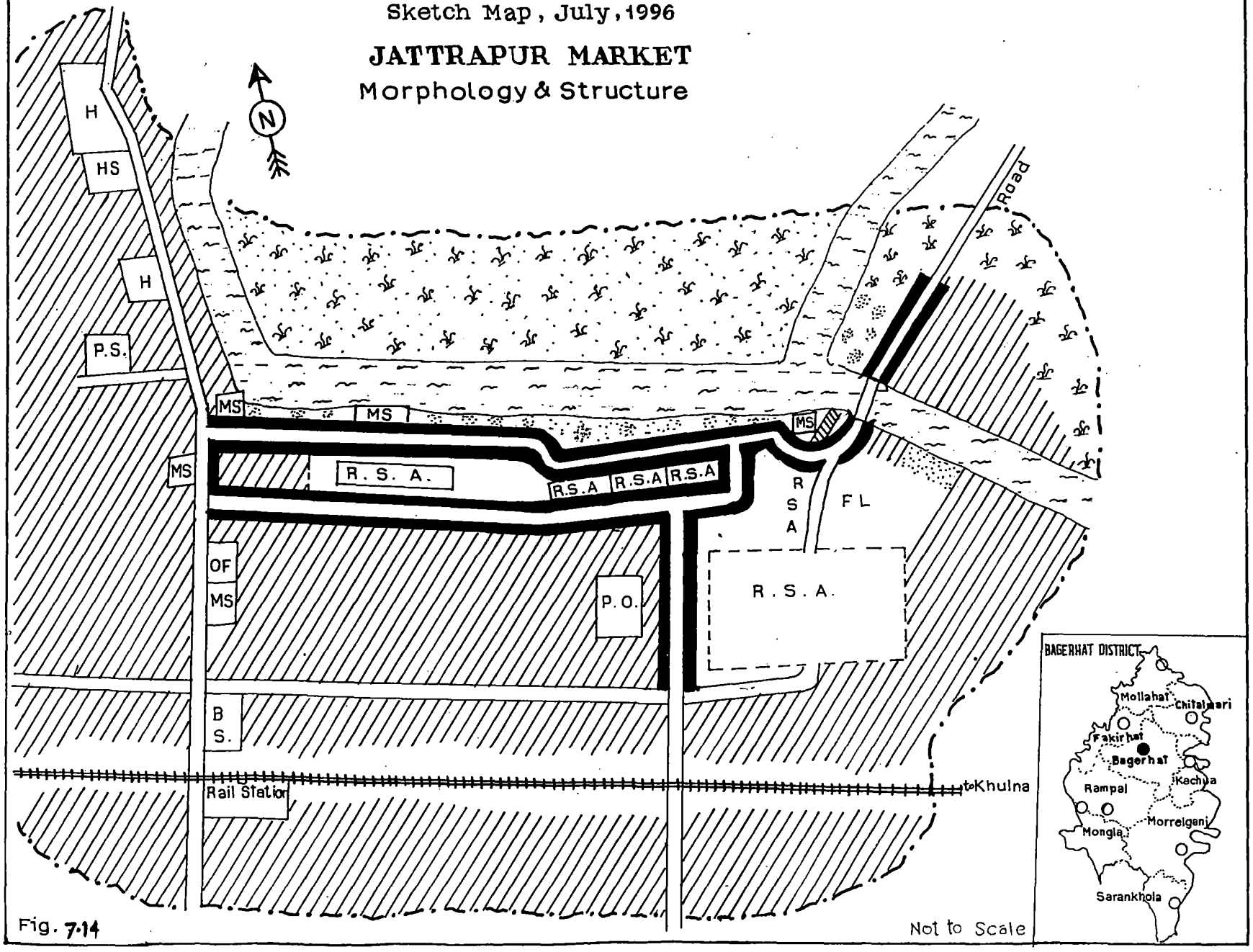


Fig. 7.14

Not to Scale

7.9 Fruits shop at Morrelgonj market

7.10 Shrimp selling shop at Fakirhat market (Shrimp processing with ice.)

G.O.s. offices have been located inside the commercial area. It is said that shops & different offices are located in the market transection area and make a mixed structure. Some pacca houses are seen in large market centres. But in most of the markets have 'Kacha' houses. Those kacha houses are made of local wood and tree leaves. The pottery shops are located in the periphery of market place. The wholesale shops are always located in the central place of business area. Three retailing open space and five retailing tin-shades are found in the Fakirhat market (fig 7.18). Perikhali market is located on the Rampal river and it is far from the Government offices. (Fig - 7.11). The distributional pattern of different functional units at Garfa market is uneven and the distance between them is wide. (Fig 7.15). Because the functional services are located of their own convenience in the market place. A number of different mills & factories have been located at the river side or on main road of the market centre. A number of markets have saw mills, rice mills, oil mills & ice cream fctories. Their number are 31 in Morrelgon market, 20 in Rayenda and 24 in Fakirhat PS. All the large markets are surrounded by residential area of the villages

The traders arranged the market space occupied by several permanent shops in the market area. The following principles of arrangement are used here —

1. The traders of cloths, stationary, ornaments & grocery, usually band together to form a single section in each group. These shops occupy desirable locations at the central part of the market or near the heart of business area.

2. The hotel & reataurant and the some kinds of services tend to group together and form a section of their own in some part of the market place. Such an arrangement is convenient for the purchasers. The arrangement is sometimes deveated due to several reasons. So they have grown haphazardly in the markets.

3. The biggest and most distinct section is of vegetables and seasonal fruits. Sometimes it is further divided into two sections. In Morrelgonj & Kachua markets, this section is divided into one for vegetables & another for fruits. (plate 7.9).

4. The seller of condiments, (salt, spices, tobacco, lime, molasses etc) sit on the fornt side of permanent big shops of the market-lane. Most of traders are temporary sellers. These traders are sit under the Government tin shade. (Plate - 7.10).

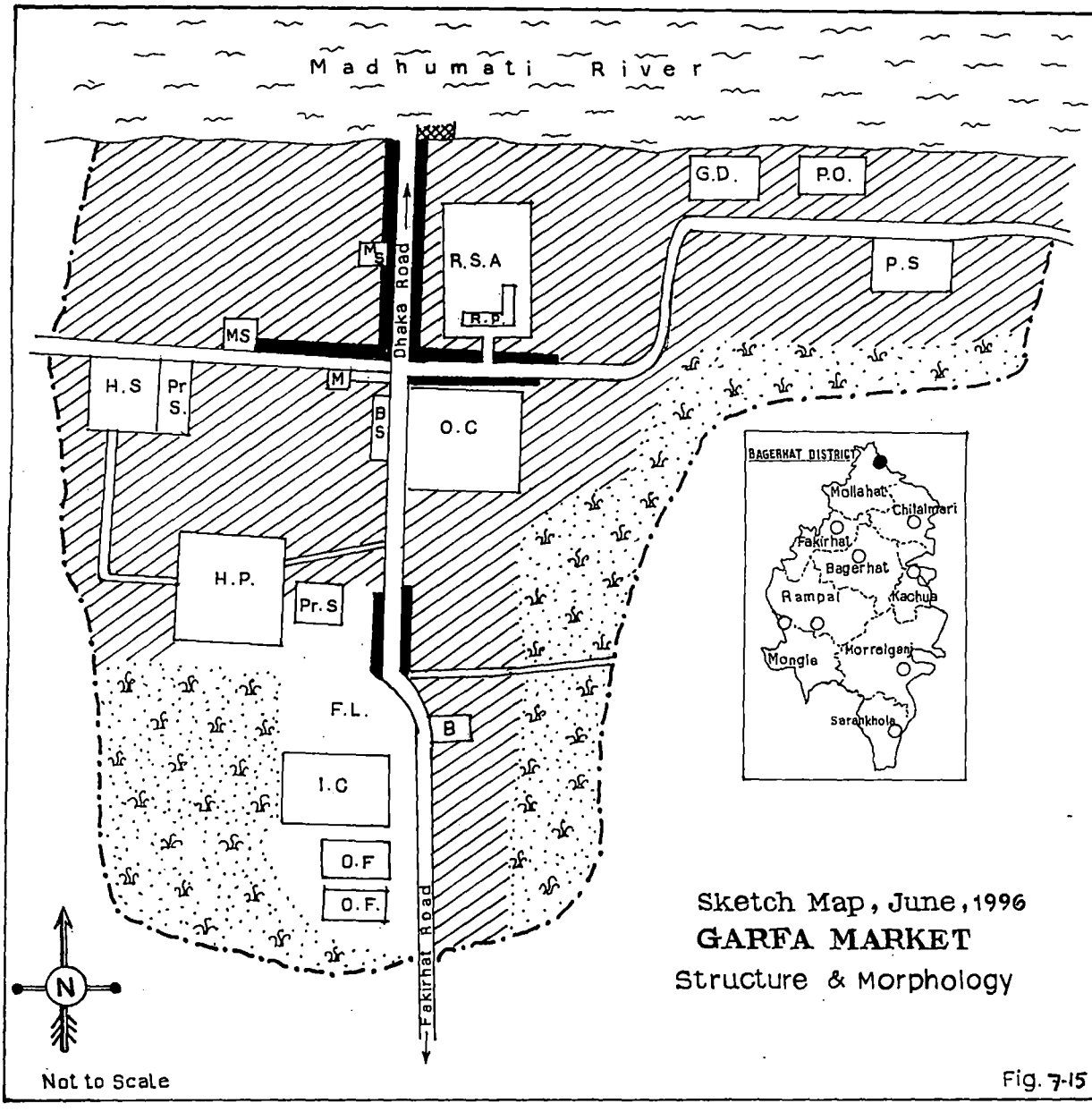
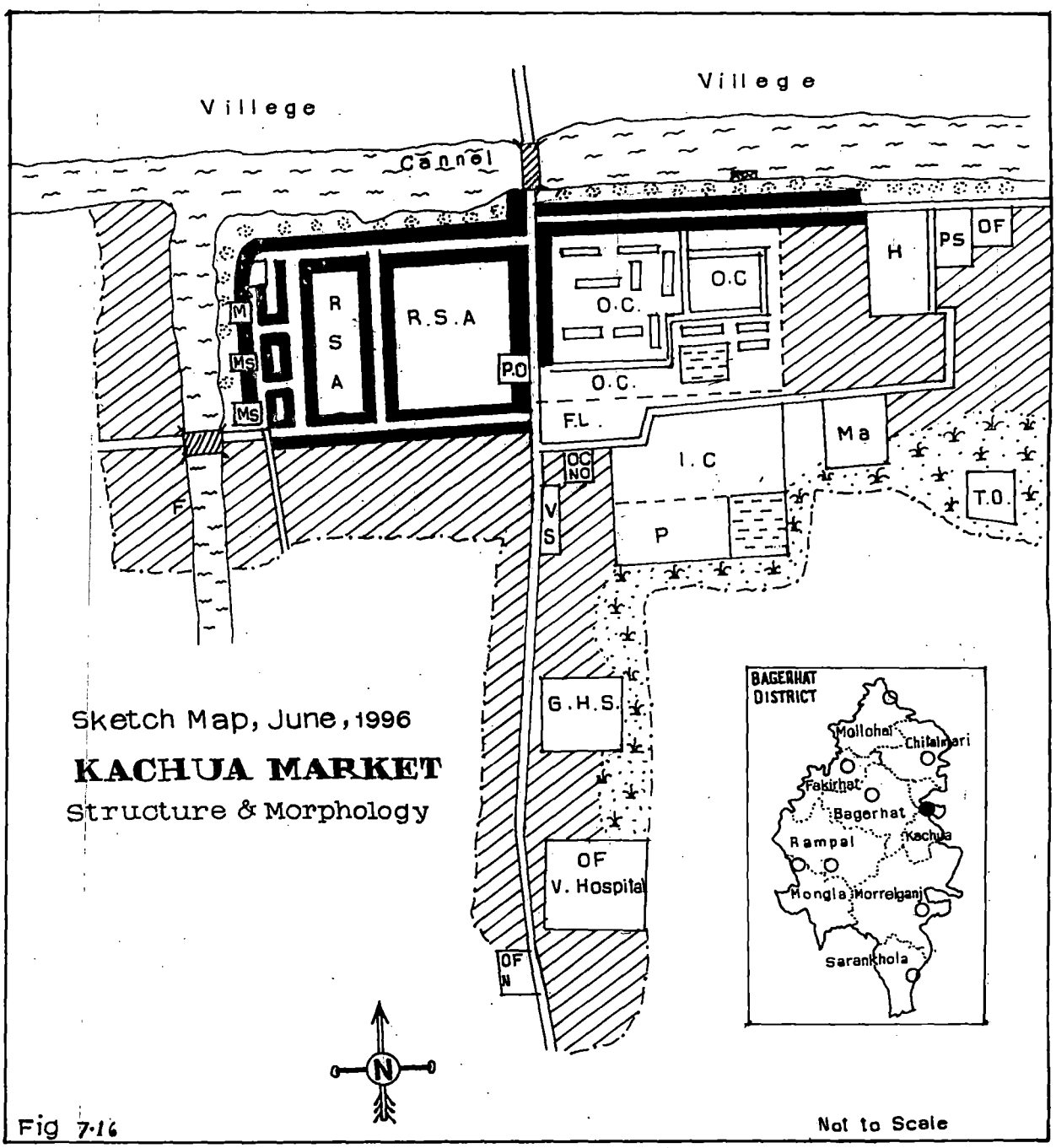

Madhumati River
G.D.
P.O.
P.S
R.S.A
R.P.
M
MS
Dhaka Road
H.S
Pr S.
BS
O.C
H.P.
Pr.S
F.L.
B
I.C
O.F
O.F.
Fakirhat Road
N
BAGERHAT DISTRICT
Mollahat
Chitalmari
Fakirhat
Bagerhat
Rampal
Kachua
Mongla
Morrelganj
Sarankhola
Sketch Map, June, 1996
GARFA MARKET
Structure & Morphology
Not to Scale

Fig. 7-15


Villege
Villege
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R
S
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R.S.A
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MS
P.O
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PS
OF
F.L.
I.C
Ma
T.O.
OC
NO
V
S
P
F
G.H.S.
OF
V. Hospital
OF
N
Sketch Map, June, 1996
KACHUA MARKET
Structure & Morphology
BAGERHAT
DISTRICT
Mollahat
Chitalmari
Fakirhat
Bagerhat
Kachua
Rampal
Mongla
Morrelganj
Sarankhola
N
Fig 7.16
Not to Scale

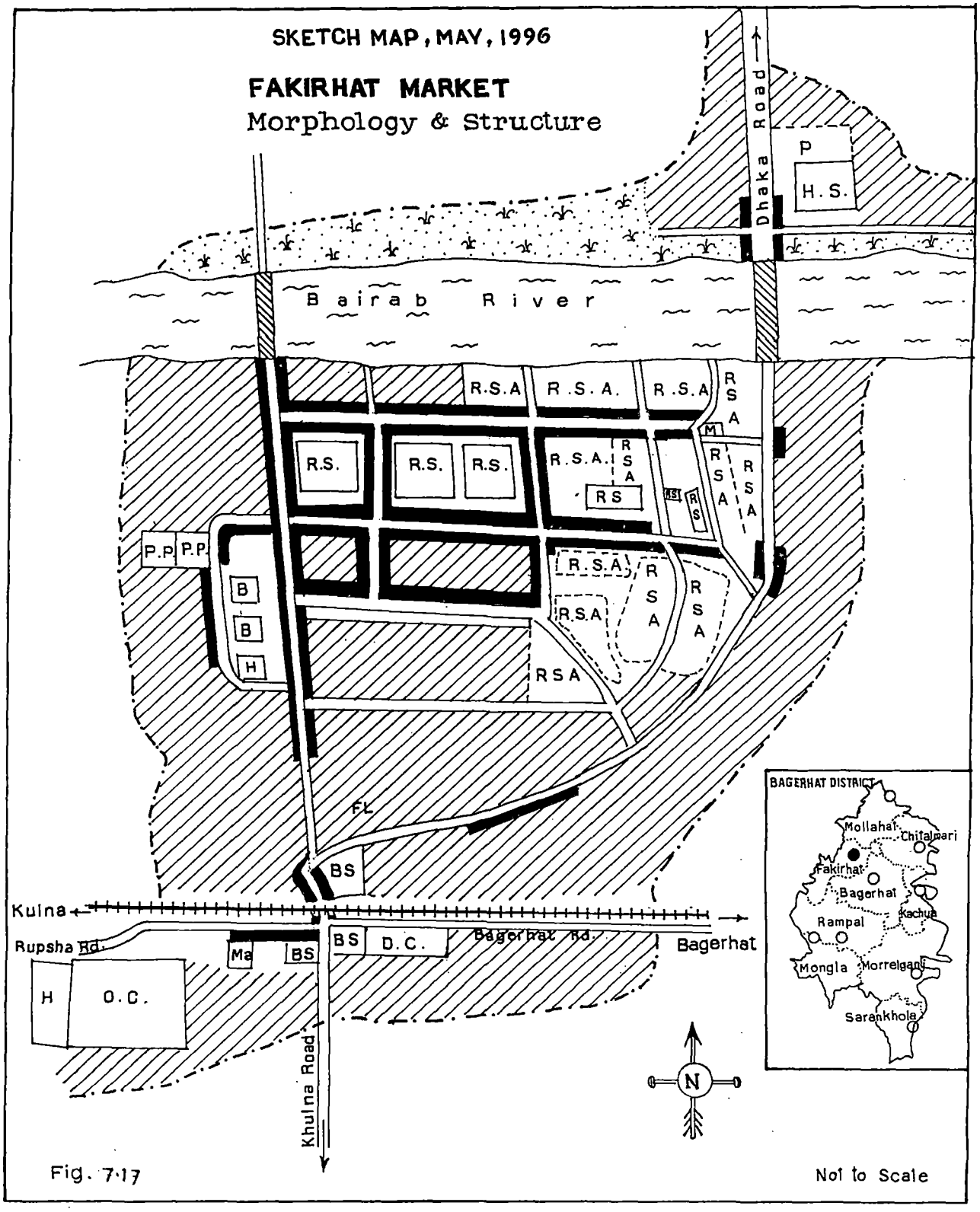

Fig. 7.17

Not to Scale

7.11 Cobler working in 'hat' day at Tafalbari market

7.12 Villagers fishing net at Rayenda market on footpath

5. The sellers of grain (pulses, rice, wheat etc.) mats, bambooware, firewood, timber are located in outer zone of the central place of the markets, because, these are bulky and they require auction. These kinds of goods are in large quantity and their price are fixed on per unit of weight or volume.

6. Barber, footware & black smith groups are located in the adjacent or back-side of important place of business area. Sometimes the cobblers sit in front of the permanent shops and the black smiths are sit far from the market crowding (Plate 7.11).

7. The livestock markets sit in open space. The traders sit on government wasteland or private places. Livestock market sits temporary and seasonal. Chicken, duck & pigeon sellers are permanently sit in open space in the fallow land of market centres. (Plate - 7.12).

The shops and number of Government offices are related to market centres. Most of the congregation of institutions & offices have helped the market centres to flourished as a nerve centre of the whole command area. (Mandal, 85) Studying nine police stations it reveals that the market centres are not uniform in morphological character. The maps of nine market centres have been preparred to indicate the place where important establishments are located in different market centres.

7.8. CHARACTERISTICS OF BUYERS OF MARKET CENTRES

Study of status of markets in different police stations, according to size & functional activities of markets are essential for understanding of relationship between the market organisations and socio-economic conditions of market participants. Questionnaire were used and interview were made to ascertain the behavioural pattern of buyers and traders in the market centres. (Skinner 1964 - 65, Tamasker 73).

In the study area, there are 45 selected markets. Randomly, 940 buyers were interviewed in different markets of nine police stations. Questioneers were completed by buyers and the result are shown on tables.

(1) Age-Sex Composition

From Table 7.17 it is found that out of the total interviewers, 43.5 percent of buyers are in the age group of 21-40 years and only 4 percent buyers are in the age group below 20 years.

Table - 7.17 Age & Sex distribution of Buyers

	Percentage of buyers to total									
Age group	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	Total
0 - 20	3.9	2.1	5.6	3.7	2.5	2.0	7.6	9.0	3.1	4.4
21 - 40	32.4	37.9	44.4	45.5	43.0	48.0	34.3	47.0	52.8	43.5
41 - 50	32.4	35.8	32.2	30.6	30.4	28.0	29.5	22.0	21.7	28.5
51 - 60	16.7	21.0	13.3	13.0	16.5	9.0	16.2	11.0	14.3	14.5
60 <	14.6	3.2	4.4	7.4	7.6	13.0	12.4	11.0	8.1	9.0
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Table 7.17 also found that the percentages of buyers have decreased beyond 40 years. It is noticed that 28.5 percent buyers are in the age group between 40 and 50 years. And the age groups of 50 to 60 years buyers are found to be 14.5 percent of the total interviewers. The percentage of old age buyers is very few. Studying sex-wise composition of buyers, it is revealed that female buyers are not found in any market because of their 'Pardha' system in Muslim community.

(2) Literacy of Buyers : The percentage of average literacy of the district is high (38%) compare to national average (32%).Table gives an idea about the educational status of the consumers of the district.

Table - 7.18 : Educational level of buyers (in%)

	Percentage to total buyers									
Education	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	Total
>S.S.C	64.7	62.1	78.9	74.1	82.2	80.0	56.2	66.0	68.3	70.4
H.S.C	14.8	20.0	11.1	18.5	11.4	10.0	20.0	17.0	19.3	16.3
Graduate	17.6	15.8	8.9	6.5	5.1	2.0	17.1	14.0	9.9	10.9
Post Graduate	2.9	2.1	1.1	0.9	1.3	8.0	6.7	3.0	2.5	2.4
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

It is observed from table 7.18 that 70.4 percent buyers are below S.S.C. level and 16.5 percent are H.S.C. level of the total interviewers. Graduates and post graduates are 10.9 percent and 2.4 percent respectively. Infine, it can be concluded that majority of the buyers in different markets in the district have very low educational level.

(3) Occupation of buyers : In rural areas most of the buyers depend on agricultural products. The purchasing power of the buyers increased during harvesting period of crops. It is found from table 7.19 that about 34.7 percent of total interviewers are engaged in agricultural activities. Nearly 22.3 percent of buyers are marginal cultivators and agriculture labourers and 13.3 percent are agriculture-cum-businessmen. Comparing different occupational pattern of buyers, it is found that a very poor people are engaged in services and other activities.

Table - 7.19 Occupation (Main & subsidiary) of buyers

Occupation	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District Total
Agriculture	26.5	42.1	38.9	37.9	50.6	28.0	35.2	24.0	33.5	34.7
Agricultur+Labour	25.5	9.5	20.0	17.6	34.2	35.0	23.8	36.0	6.3	22.3
Agriculture+ Business	14.7	22.1	12.2	11.1	6.3	9.0	9.5	19.0	14.0	13.3
Agriculture+ Service	4.9	11.6	—	—	2.5	4.0	2.9	—	13.0	4.9
Business	8.8	4.2	13.3	17.6	1.3	15.0	4.8	12.0	10.6	10.0
Service	13.7	6.3	5.6	12.0	1.3	2.0	13.3	8.0	11.8	8.7
Agr. + Bus+Ser.	4.9	2.1	3.3	1.0	—	2.0	8.6	1.0	7.0	2.6
Others	1.0	2.1	6.7	2.8	3.8	5.0	1.9	—	6.8	3.5
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

(4) Nature of Buyers : It is noticed that different categories of buyers are observed in the markets.

Table 7.20 : Nature of buyers in the district (in %)

Types of buyers	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District Total
Traders	3.9	12.6	6.7	22.2	—	3	11.4	8.0	6.8	8.5
Consumers	82.4	66.3	82.2	65.7	84.8	88	75.4	80.0	83.9	78.8
Traders +Cons.	10.8	10.5	10.0	9.3	11.4	6	2.8	10.0	6.8	8.4
Others	2.9	10.5	1.1	2.8	3.8	3	10.4	2.0	2.5	4.3
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

From the field study (Table 7.20), it has been found that 78.8 percent of buyers are consumers and only 8.5 percent of buyers are traders. Remaining 8.4 percent are traders-cum-consumers and 4.3 percent are miscellaneous category.

(5) Category of Buyers: From table 7.21, it has been found that there are five categories of buyers in the markets. Majority of them are retailers.

Table 7.21 Categories of Buyers

Categories	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District Total
Small Retailer	77.5	57.3	77.8	73.1	65.8	79.0	82.9	73.0	73.9	74.9
Large cum										
Whole seller	12.7	17.9	10.0	9.4	27.8	14.0	9.4	13.0	12.7	13.6
Whole saller	3.0	15.8	6.7	4.6	—	4.0	1.9	6.0	2.5	4.8
Retail & W.sale	4.0	9.0	5.5	12.9	3.8	3.0	1.0	7.0	1.8	5.0
Others	2.8	—	—	—	2.6	—	4.8	1.0	2.1	1.7
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

A few number of buyers are wholesellers. About 74.9 percent of buyers are retailers and 13.6 percent are large retailers. Only 5 percent are wholeseller-cum-retailers. A very few (1.7) percentage of buyers are other category. A certain number visitors come to market for inquiry of market price of different commodities and some other works.

(6) Travelling Distance

The buyers come to market by walking 2 km to 4 km from their villages. It is observed from table 7.22 that 10 percent of buyers come to market from a distance above 5 km. Majority of percentages of buyers attended hat within a distance of one and two km are 26 & 19 percent respectively. It is also found that 24.5 percent and 12 percent buyers covered a travel distance of 0.5 km and 3 km respectively. Majority of markets sit in the afternoon and they close after sunset. So the important aspect of travel pattern adopted by selles and buyers is that they are returned to their home at night after attending the market on-foot or by personal vehicle. Some markets are located at a distance of one day work from their place of residence.

Table 7.22 Travelling distance of buyers from home to market (in %)

Distance	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District Total
>.50 Km	23.5	32.2	20.0	30.6	34.2	25.0	19.0	39.0	30.1	24.5
1.0 Km	29.4	23.6	24.4	24.0	25.3	30.0	25.8	22.0	23.6	26.0
2.0 Km	23.5	20.0	28.9	18.5	13.9	19.0	19.0	8.0	19.9	19.0
3.0 Km	10.9	12.6	8.9	9.3	15.2	13.0	8.6	14.0	14.9	12.0
4.0 Km	9.8	6.3	5.6	7.4	5.1	8.0	8.6	11.0	9.9	8.2
5.0 Km <	2.9	6.3	12.2	10.2	6.3	5.0	19.0	6.0	8.6.	10.3
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

(7) Mode of Transport : The percentage-wise distribution of buyers according to the mode of transport is given in table-7.23

Table - 7.23 Mode of transport of market centres (in%)

Transport mode	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District Total
Rrchshaw	10.8	18.9	12.3	27.8	10.1	4.0	9.5	8.0	14.3	13.1
Bus	16.7	8.4	22.2	18.4	16.3	8.0	18.1	17.0	4.3	13.8
On foot	60.7	53.7	44.4	40.6	65.8	65.0	41.9	54.0	67.0	55.0
Engine boat/boat	3.9	3.2	—	6.5	7.8	15.0	2.9	19.0	1.6	5.2
Richshaw + on foot	7.8	8.4	2.0	3.7	—	8.0	4.8	1.0	10.6	6.7
Bus + Richshaw	—	5.3	8.9	0.9	—	—	5.7	—	0.6	2.2
Launch	—	—	—	—	—	—	17.1	—	1.6	2.2
Others (Cycle,M.Cyl.)	—	2.1	10.0	3.7	—	—	0.9	1.0	—	1.8
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Out of 940 interviewers, about 55 percent of the buyers do not use any kinds of vehicles for transportation and they come to market on foot. They carrying goods on their shoulder and head-loads goods in the markets. Remaining buyers used the vehicles like bus, rickshaw & boats. Nearly13 percent buyers used rickshaw. Only 13.8% came by bus and 5.2 percent came by boats & engine boats. In some cases, the buyers used two types of transport, partly by rickshaw and partly by bus. These types of buyers are 6.7 & 2.2 percent. (Table 7.23). Launch services are available in only two police stations viz Morrelgonj & Sarankhola in the study area. (Plate - 7.13).

(8) Major Purchase of goods

The market made a multiple functions and various components, which are needed in daily life of people. The people purchase various types of goods from market. The table shows that the buyers are major purchasers from the market place or 'hats'.

7.13 Artitians selling handicraft at jattrapur market

7.14 Ratail traders selling dry fish at Kachua market.

Table - 7.24 Major purchase of goods from markets.

Name of the goods	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District Total
Food+others	24.5	23.2	37.8	21.3	29.1	30.0	10.4	37.0	3.3	22.5
Food+Sf+olo	0.9	4.3	3.3	7.4	5.1	4.0	20.9	6.0	4.9	6.3
Ma+Others	4.9	7.4	8.9	1.9	7.6	8.0	3.8	9.0	7.4	6.6
St. +Others	17.6	14.7	5.6	4.6	—	—	9.5	1.0	24.2	9.8
Veg+Fi+Spices	39.4	28.4	34.4	37.0	50.6	55.0	27.0	42.0	39.8	39.0
Fi+St+Others	—	3.2	—	16.7	—	—	2.9	—	8.1	3.9
Fi+St.+Ma+Clo +Others	0.9	5.3	—	—	2.5	—	17.1	—	2.5	3.4
Food+St+Ma+ Clo+Others	4.9	4.2	6.7	2.8	—	—	7.5	2.0	3.2	3.6
Food+St	6.9	9.3	3.3	—	5.1	—	0.9	3.0	5.6	3.8
Others	—	—	—	8.3	—	2.0	—	—	—	1.2
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

St, Stationary, Ma-Madice, Fi-fish, Veg-Vegetables, Clo-Cloth.

From table 7.24 it is also found that 23.5 percent interviewers buy cereals and other goods. Majority of interviewers (39.7%) purchases vegetables and spices. About one percent of buyers attend the market for recreation or other miscellaneious purposes. It is also revealed that 10 percent buyers purchase stationary goods and others items. Nearly 6.1 percent come for medicine & others. About 6 percent purchase food cum stationary, cloth from the market. The percentage of different purchaseres in police station may be clear from table 7.24.

The characteristics of buyers are shown in tables (7.8 to 7.24) of selected markets. From the field study, it is observed that the behaviour of buyers of different markets varies from one to other. The high percentage (35%) of middle aged (21 - 40 yrs) buyers is found in the Sarankhola Police Station. The low percentage of aged purchasers (60+) is seen in Chitalmari Police Station. Buyers are local people. They purchase their merchandises from nearest market. It is seen that only in three police stations (Fakirhat, Morrelgonj & Sarankhola) a very few number of buyers come to market beyond 5 Kms distance. The percentages of graduates & postgraduate consumers are more in Morrelgonj & Mongla Police Stations and a very few in Fakirhat & Kachua Police Stations. Most of the buyers is below secondary school certificate level in Mollahat Police Station. The purchasers are engaged in various kinds of occupational activities beyond the market hours and a high percentages (51%) are engaged in agricultural activities in

7.15 'Sagol hata' (Goat market) at Rayenda market

7.16 Farmers selling goats at Morrelgonj market.

Mollahat Police Station. The percentages of caltivators and agricultural labourers are high in three police stations, namely, Rampal (36%), Mollahat, (34%) and Mongla (35%). A few service holders & businessmen are observed in the Mongla & Chitalmari markets. The traders of lower markets, buy their merchandises from higher order markets. High percentage (22%) of traders-cum-buyers are found in Kachua market. In the study area, most of the buyers are consumers. Among the selected markets the highest percentage of consumers are found in Mongla market, in same police station. Majority of the buyers are retailers. Further it is found that high percentage of retail buyers are observed in market of Morrelgonj P.S. The percentage of wholesale traders and retail-cum-wholesale traders are very few in all markets in the district . In the study area, the communication system is very poor. The buyers come to the market by different mode of transports. Majority of buyers come to markets on foot and a few number of consumers use different kinds of transport. About 22 percent of buyers used bus in Fakirhat Police Station and 17 percent buyers are used launches to go market in Morrelgonj Police Station. In the district, the highest percentage of buyers (67%) coming to market onfoot in Sarankhola Police Station The attendance of buyers decreases in the rainy season. From table - 7.24. it is also found that most of the buyers purchase goods from their local markets. From the field study, it was seen that majority of people in villages live below poverty line. So, the buyers mainly purchase the daily necessary items like rice and vegetables.

7.9. CHARACTERISTICS OF TRADERS OF MARKET CENTRES

In the study area, the nature of attendances varies from market to market. Out of 156 markets, 45 markets were covered for study with the questionnires. From the field study, it is observed that traders and sellers of different kinds are found to sell various types of commodities in the market place. On the basis of the nature and the commodities of trading the traders are divided into two categories. They are : (1) Producer-cum-sellers and (2) Non-producer sellers (Middlemen). Again each types is divided into: (a) temporary sellers & (b) permanent sellers.

There are many permanent & semi-permanent shops in the market centres. Number of permanent shops has played an important role in the marketing of different commodities throughout the year. Here, permanent sellers are available for transaction

7.17 Rural people selling home product sweets at Bharobaria market

7.18 Barbar servicing on the 'hat' day on foot path

of goods through the whole day. As a result, the amount of transactions is high and regular. Temporary sellers are part timer's and they sale the goods during a specific time on market day. Producer cum sellers, purchase their daily necessity by selling their products. Their main purpose of attending the market is to buy rather than to sell. The characteristics of all kinds of traders in different markets are shown in defferent tables.

(I) Age & Sex Composition of Traders: The age-wise composition reveals that 3 percent of traders are in the age group of below 20 years. Majority of sellers are in the age group of 21 - 40 years and their percentage are nearly 56 in almost all the markets in the study area. Those who are between 41 - 60 year accounted for 33 percent, while only 8 percent of the sellers are beyond 60 years of age. Table 7.25 sex-wise composition of sellers reveals that there is no female seller in any of the markets in the study area.

Table : 7.25 Age Groups of Traders (in %)

(Percentage to total)

Age Group	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
Below 20	1.9	2.0	1.0	2.0	2.0	1.0	8.0	3.0	6.2	3.1
21 - 40	65.7	51.0	53.0	53.0	58.0	49.0	53.0	62.0	5.5	55.4
41 - 60	21.9	39.0	35.0	38.0	33.0	35.0	32.0	31.0	32.2	33.2
60 +	10.5	8.0	11.0	7.0	7.0	15.0	6.0	4.0	8.1	8.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(II) Travel Distance of Traders

Percentage wise distribution of traders according to the travel distance from market place is given in table 7.26. It is found from table that about 34.9 percent of traders come to the markets from a distance of below ½ km. The traders those cover a distance of one km are nearly 32.7 percent. Out of 947 interviewers. It is also revealed that 15.5 percent of traders came from a distance of 3 km from the market place. On the other hand atleast 18 percent of traders in the rural markets travel about 2 km from the place of residence.

Table : 7.26 Distance from Traders home to market centres (in %)

	(Percentage to total)									
Distance	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
< ½ km	27.6	41.0	24.0	26.0	32.0	61.0	24.0	53.0	16.9	34.3
1 Km	31.4	36.0	40.0	35.0	41.0	15.0	33.0	31.0	32.1	32.7
2 Km	15.3	13.0	22.0	24.0	16.0	9.0	24.0	12.0	23.3	17.5
3 Km >	25.7	10.0	14.0	15.0	11.0	15.0	19.0	4.0	24.7	15.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(III) Educational Status of Traders

From table 7.4, it is revealed that most the traders (interviewer) of markets are below primary level of educational attainment. Out of 947 traders, 82 percent are matriculates and below S.S.C. level and 13 percent are Higher Secondary (H.S.C) level. The proportion of graduates is almost negligible (4 percent) and 1 percent is post graduate status. It is indicated that overall educational status of the traders is primary level. It is concluded that trading is not bound for certain qualification, so any people can easily work in trade without much educational qualificatiions.

Table : 7.27 Educational Status of Traders (in %)

	(Percentage to total)									
Education	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
S.S.C.	82.8	84.0	88.0	82.0	76.0	90.0	77.0	83.0	74.1	81.9
H.S.C.	10.5	10.0	10.0	11.0	16.0	7.0	16.0	11.0	22.3	12.7
Graduate	5.8	6.0	2.0	7.0	6.0	2.0	4.0	5.0	2.7	4.4
Post Gradua -ate & above	0.9	—	—	—	2.0	1.0	3.0	1.0	0.9	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(IV) Occupational Analysis of Market Traders

The occupational pattern of traders in rural markets are multiple. Most of the traders are directly or indirectly related to agricultural activities. The occupational pattern of traders are found in six groups. (table 7.28). From table it is observed that 44.4% traders are only businessmen and 44.4 percent traders do agriculture-cum-business. It is also revealed that 4.8 percent traders have been doing three kinds of (Agriculture-agriculture labour-business) occupational activities and 4.2 percent have both services and business

profession. Remaining one percent is engaged in agriculture, business and services profession. It is note worthy that most of the traders are extensively engaged in agricultural work (Plate - 7.14).

Table : 7.28 Occupational Pattern of Traders (in %)

Occupation	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
Agri+Busi	2.9	8.0	6.0	1.0	6.0	6.0	5.0	6.0	1.8	4.8
Agri.Labour										
Agri+Busi+Serv	0.9	—	—	3.0	—	—	5.0	—	67.9	1.2
Agri + Busi	58.0	61.0	30.0	31.0	32.0	23.0	59.0	39.0	2.7	44.2
Serv. + Busi	2.9	5.0	6.0	4.0	5.0	5.0	6.0	3.0	2.6	4.2
Business	35.3	24.0	57.0	61.0	53.0	66.0	25.0	50.0	23.2	44.4
Others	—	2.0	1.0	—	4.0	—	—	2.0	1.8	1.2
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Agri = Agriculture, Busi = Business, Serv = Service, Agri. labour = Agriculture Labour

(V) Monthly income of Traders

Table : 7.29. Monthly income of the Traders (in %)

Range of income	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
0 - 500	3.8	5.0	2.0	3.0	1.0	1.0	11.0	3.0	14.0	5.0
501 - 1000	10.5	25.0	6.0	5.0	7.0	10.0	19.0	6.0	18.0	12.0
1001 - 2000	26.7	35.0	24.0	20.0	35.0	24.0	25.0	15.0	41.0	27.0
2001 - 3000	21.0	17.0	24.0	20.0	28.0	20.0	10.0	16.0	10.0	18.0
3000 above	38.0	18.0	44.0	52.0	29.0	45.0	35.0	60.0	17.0	38.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Many traders are reluctant to disclose their incomes or profits. But most of them told that their net profit, is very low. Table 7.5 shows the percentage of traders in different range of profits in different police stations of the district. Average monthly income of traders is not sufficient to meet the expenses in daily life. From Table 7.29. It has also been found that 38 percent traders are in the income group of above 3000 taka per month. Only 5 percent traders have income between 1000 to 2000 and 2001 to 3000 taka respectively. Generally, the stationary traders make the highest profit of all the sellers in the markets.

7.19 Bus-stand near crossing at Signboard market

7.20 Cloth sewing at open space on 'hat' day at Garfa market

(VI) Capital Invest of Trade

Table : 7.30 Capital Invest per traders of his shop (% of traders to the total interviewers)

Range of investment	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
1 - 500	16	6	2	—	8	—	12	1	23	8
1001 - 5000	13	26	4	5	17	14	14	10	21	13
5001 - 10,000	11	9	7	6	9	14	10	9	15	10
10001-50,000	49	31	46	37	20	44	33	31	23	35
50,000 above	11	28	41	52	46	28	31	49	18	34
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

From table it is found that capital investment by 35 percent traders are in the range 10,000 - 50,000 taka. Majority of the traders have capital investment beyond 50,000 taka. The investment range between 1000 - 5000 take accounted for 14 percent traders and 8 percent traders invest below 1000 taka for their business.

(VII) Types of Seller

Table : 7.31 Categories of seller of the markets (in%)

Types of sellers	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
Retail	88	83	71	77	84	88	71	79	85	81
Whole sale	3	4	12	5	2	1	2	1	2	3
Retail cum whole sale	9	13	17	18	14	11	27	20	13	16
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

In the study area, there are three types of traders. They are retailers, wholsellers & retail cum wholesellers. The whole sellers are smaller in number than retailers. The percentage of retailers are more than other two categories. From table 7.31 it is found that 81 percent of retail traders are generally trading in the market place. Only 3 percent and 16 percent traders are whole sellers and whole-sell-cum retailars respectively.

(VIII) Nature of Traders

Table : 7.32 Capital Invest per traders of his shop

(% of trader to the total interviewers)

Types of Traders	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
Merchant	8	4	18	16	10	2	15	5	13	10
Medium Shop	22	21	27	35	29	18	23	24	44	27
Small shop	70	75	55	49	61	80	62	71	43	63
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Three categories of sellers are found in the markets. Some markets consist most of the medium & small types shops. A very few number of markets are only merchandise category in the study area. The table 7.32 gives the distribution of different types of sellers in different police stations. Out of the 947 interviewers 63 percent of traders are small traders. It is also found that 27 percent are medium and 10 percent are merchant types shopkeepers.

(IX) Duration of Trading

Table : 7.33 Selling period of traders (in %)

Time of selling	Bagerhat	Chitalmari	Fakirhat	Kachua	Mollahat	Mongla	Morrelgonj	Rampal	Sarankhola	District total
Part time	37	13	12	14	32	13	43	16	50	26
Full time	63	87	88	86	68	87	57	84	50	74
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

On the basis of time of sellingtwo types of traders are found in the markets. From table 7.33 it is observed that 74 percent of traders sell the commodities on fultime basis. Remaining 26 percent of total traders is selling in the market as part time basis. The length of selling times slightly varies from season to season.

It is discussed that among nine police stations, the highest percentage of traders are found in the middle age group. It is also found from the field study that majority of traders live within one and two kilometres from market place. Most of the traders of Mongla (61%) & Rampal (51%) P.S. live within ½ km. The percentage of literacy of the traders is very low in all the markets. Fakirhat (57%) & Mollahat (68%) P.S. have the highest percentage of traders in business. The occupation of rural traders is mainly agriculture. A high percentage of traders are engaged in three types (Agriculture,

Business, & service) occupation in Sarankhola Police Station. About 80 percent of small shops are found in the markets of Mongla Police Station. It is also analysed from the tables that the majority of traders are retailers Bagerhat (88%) & Mongla (88%) Police Stations. The traders of markets in Fakirhat (88%), Chitalmari 87%) & Mongla (87%) P.S. are engaged in full times selling.

CONCLUSION

The selected market centres are distributed in different police stations. It is due to recent development of the command area or influence zone of markets. The markets are grouped into five orders according to score of 8 functions. Only four markets are in the highest order and 30 markets are of low order. About 12 markets are in very low order. The traders in the study area are composed of more male and they belong to middle age groups. For movement of traders & transportation of their goods they depend mainly on van-rickshaw, launches and engine boats. The buyers mainly purchase food & vegetables than other necessary goods. Most the buyers come to market on-foot. Analysing the duranal fixation of markets, afternoon to evening (19) and noon to evening (11) markets dominants in the study area. The relationship between the permanent shops and bid value is vigorously active. Bid-value always depends on the number of permanent shops. On the basis of seven permanenters the markets are grouped into different categories.

CHAPTER - EIGHT

SUMMARY OF RESULTS

The main object of the the study is to find out the role of market centres in the development of police stations of Bagerhat district. It has been observed that the market centres serve as the central place in rural areas. It has provided many central functions and local exchanges in village. The study aims at mainly two principal objectives : to study the various characteristics of rural markets and to examine the factors influencing the development of rural area by the market centres. It has also been tried to examine the socio-economic and other functional role of the markets in the district in some details in order to arrive at the following results.

The establishment of markets in the study area has taken place in the past without any planning. This is due to the fact that these markets were established through the institutions and offices or influential person at open spaces for their convenience of the public assemble away from the settlement.

Physiography, soil and population density have created some important spatial and distributional features of the markets of the study area. The densly populated areas have the highest number of markets than the sparsely populated areas. It has also been observed that there is a close resemblance between the intensity and distributional pattern of the markets. The densely populated police stations in the district are Bagerhat and Fakirhat. Rugged topgraphy and poor soils are the causes of sparse population and the smaller number of markets. Due to these differences in topography, soil and density of population, the overall distributional pattern of the markets has been random. The markets are widely spaced in Rampal & Fakirhat Police Stations, but closely spaced in thickly populated areas situated between them. Random distribution pattern of rural markets is also observed in Bangladesh. The district is attributed partly to the unplanned initial development of market centres according to the social leaders and partly to unplanned development of rural settlements and transport network. As observed some rural markets are located close to rurally developed area in a regular spacing pattern. They have rather developed according to the population demand and transport facilities.

The district is frequently inundated and sites for settlement is scarce along the coastline or rivers. As a result, the pattern of settlements, is agglomerated and the density of population per km^2 in the district is high on bank of the rivers. The growth rate of population is enormously high being higher than that of the neighbouring areas and the most populated area are Bagerhat & Kachua Police Stations. Thus the pressure on agricultural land, i.e. man-land ratio is high, and is increasing year by year. As the pressure of population is high, educational facilities are inadequate for serving such a large number of peoples resulting in the illiteracy of the majority of the rural people. The rate of literacy is low in the district. The growth rate of literacy during the last decade was insignificant. High concentration of backward population affects the socio-cultural set-up in the district.

As agriculture is the mainstay of the majority of the people, the agricultural lands are intensively used, but due to presence of low percentage of the cultivable waste lands, the net sown area cannot be increased further. Only gross sown area can be increased to a certain extent by increasing the multiple cropped area which depends partly on irrigational facilities and partly on agricultural inputs. Varieties of crops are cultivated in the district, but their total area and production depend mainly on the monsoons or seasonal rain and some socio-economic factors. Thus, the income of cultivators derived from agriculture ramains unstable resulting in the fluctuation of their economic conditions. As agriculture is season bound; the income of agriculture labourers depends on favourable conditions for agriculture. Crop rotations sometimes ensure extra income to the cultivators, but due to lack of irrigational facilities, manure and HYV of seeds, these are not scientifically followed by the cultivations in the district. Moreover, the farmers use traditional agricultural implements and methods of cultivation. as a result, production is not optimum.

As observed from the result, the condition of market is very poor. The roads in the interior become muddy during rainy season and dusty during dry season, making it different to travel through these roads. The drainage and swearage system is practically absent in the markets of the interior location. The largest and intermediate categories markets of the district are connected by at least one or two 'pucca' or metalled roads, though the surrounding areas are still served by poor transport and communication system, lower type markets are connected by non-metalled or cart road and during

rainy season become unsuitable. Consequently, the presence of buyers & sellers is relatively smaller in number during this period. The mode of transport is low, the charges for transporting of goods are high. As a result, the price of goods are low in the place of production. A great difficulty is faced by the rural folk of the three police stations in thieir movement and visiting market places for selling commodities.

It may be further stated that existing educational facilities and health services are inadequate for such a large population. Existing educational institutions have low infrastuctural facility with either lack of qualified teachers or students. Health services have neither medicines nor qualified doctors, but these are crowded with patients for free medical care. Other socio-economic facilities in the district are very poor and inadequate compared to demand. Besides, electricity has reached only one fourth of the market centres in the district. This has a depressive effect on the growth of secondary and tertiary activities in the rural areas. Limited recreational and other cultural facilities are responsible for extravagant habit of the inhabitants.

The periodicity of markets helps both the buyers and sellers is various ways. Due to this periodicity of markets the petty traders can move more than one market in a week and can combine this product, with sales efficiently. this also minimises the travel distance of the consumers.

In the study area, the periodicity gradually increases from the police station headquarters, towards the thickly populated zone of market centres in the district. One day in a week in the remote areas is gradually replaced by twice a week in the thickly populated areas. Thus, the study area has resemblance with the situation in the southern China (Berry, 67).

Periodicity of rural markets are examined in the term of (i) weekly frequency pattern. (ii) bi-weekly markets (iii) tri-weekly markets, and (iv) daily markets. Among these, the dominant bi-weekly market are more in number than other three types of market. The variation in weekly frequency is reflective of variable demand and socio-economic conditions influencing market meetings.

In nine police stations five categories of duranal fixation of market activities are identified (i) Morning to evening (ii) Late morning to evening (iii) Noon to evening (iv) Afternoon to evening and (v) Noon to after evening. These varieties of duranal fixation

are reflectives of diversified demand and socio-economic infra-structure of the study area. However, the dominant duranal market meeting time is morning to evening in large markets, noon to evening in small markets, afternoon to evening (short time) lower type markets. It is having highest share in afternoon to evening market in the district.

156 markets of nine police stations comprise 379 market meetings per week, which include 105 daily and 279. 'hat' day meetings. Monday has been regarding as most dominant market day of the week, when the largest numer of market meetings of other days in the study area.

In general, at least three types of markets are identitied in the area. There are retail, whole sale, and wholesale cum retail. Each of these market types has been individual levels which give rise to a spatio-temporal pattern of rural markets. Based on their functional characteristics, markets of each police station are grouped into high, medium and low categories. Only small number of large markets are located near or within the police station headquarters (belonging to highest category). Also the highest level markets offer more central place functions than the lowest level markets. This variation is depended on number and rank of markets.

Compare the market centres of different police stations, the market performs a wide range of functions, which they are graded into five categories. It is categorised on the basis of ratio's in markets with population, area and number of villages. Compare the score value, the highest level is Sarankhola Police Station and lowest level is Rampal Police Station. On the otherhand, it reveals a positive correlation between each other.

The density of population in the command areas is high, and increasing steadily. so the supply for people does not keep with demand. Consquently, availability of the existing central functions and complementary region is very poor. As a result, trade, commerce and service activities thus do not get adequate opportunity for development in the area. Road-links between towns and selected market centres and between selected markets & their dependent villages are poor. The dominant function is very low in market place. So, the spatial & functional gaps in the police stations are high . It needs some infra-structure for its development and it could only happen if proper steps are taken to plug the gaps by suitable device.

The markets are categorised into different parameters of selected market centres. The highest categories have been shown in six market centres. These markets are rich in attendences, permanent shops, temporary shops, command population, command area, bid value and 'hat' day in a week. The lower category markets are comparatively few (3 markets). In other words, the study area reveals a positive relationship between *total number of permanent shops and total number of temporary shops & bid value.*

The spatial structure of selected markets has been shown in differential distribution pattern. Majority of selected markets are dependent on offices and institutions. Which are located within the central place but the offices of highest level markets is far away from central place within half km or more in distance.

Some observations relating to the general problem of market establishment, management and development may be made here from the experience of this study. The establishment of markets, in Bangladesh tookplace in this part without any planning, but this should not be allowed any longer in the national interest in before. The establishment and growth of market must be planned and promoted for efficient social, economical and other functions in the rural area.

The observation result and multiple correlation & regression provide some important insight toward the theoretical generalization posed earlier in the study. the dominance of population pressure and transport intensity on the development of rural markets, as observed in the study area of Bangladesh provide support to Hodders concept of markets development in which Holder argued that rural markets develop out of the stimulus provided by internal forces such as the economic one demanding the establishment of an exchange system and by the external forces such as transport routes.

The result also provide the support to those works that consider population density, transport intensity, range of goods and consumers & traders income as the factors influencing size and periodicity of rural markets in developing countries (Skinner 64, 65, Eighmy, 72). It is found that the study provides support to the central place theory of Christaller (1933).

It may further be stated that the rural markets also play an important role in the growth of permanent market centres. The rural markets have undergone gradual

development and transformation by the process of both traditional and modern changes. The former works in the initial stage, whereas modern change occurs due to increasing commercialization and improved means of transportation. In the interior of the study area; particularly in Rampal and Mongla Police Stations, the growth of new rural markets and their development largely depend on the increase of population density. Larger markets stabilize, new dates are added and finally periodicity vanishes i.e. the periodic markets begin to be held on daily basis although huge buyers and seller rush to the markets, during hat days keeping the old tradition. Modern change, as observed in the densely populated area of all the Police Station headquarters, (increased services areas, greater volume of trade are done in centres). It is observed that the higher order centres continue to grow up in size and establishment.

In conclusion, it can be said that this study has several far-reaching implications. First, the study generated data set on nine P.S. located in diversified physical, demographical and economic conditions that were non-existant. Second, it tested some rudiments of the theory of marketing those were not tested before in case of Bagerhat district. Lastly, it has identified population pressure, transport system, among others, as the most important criterion influencing market centres. The study results, it is expected, will be helpful in further planning market development as well as rural development in the district.

CHAPTER - NINE

SUGGESTION AND CONCLUSION

SUGGESTION

In view of the complex nature of the problem of the area, the various national development strategies had been introduced in the past for area development in general and people in particular. It has been found that a larg number of problems are responsible for the backwardness in the district. Therefore an integrated based development strategy is required for the development of the area and economic conditions of the people. As there are certain similar features in a number of problems, so these have been categorised into: (i) spatially market centre and (ii) generally the district-wise market development. These will not only help in the suggestion measures but also help in implementing the strategies for reaching the desired goal in future.

On the basis of study, it may be suggested that the district has a large flood prone areas and its economy depends mainly on agriculture. Among physiographic constraints, drainage and flood are very acute in the district. These problems had been tackled since the four decades by the Governement development programs but no significant development was taken place.

As regards the uncertainty of rainfall & flood,it is palpably that man can not control or regulate the rainfall or cyclone but he can solve the problem of deficiency and super-aboundance of rainfall by alternative arrangements like storing of rain water and establishing irrigation projects. Vaious irrigation projects like, river lift-pumps and shallow lift-pumps have been under taken to solve the problems in the area. But these schemes are inadequate compared to demand as it is an agricultural area. Moreover, limitation of these schemes and projects, depends on an availability of supply. Arrangement for supplying diesel to the cultivators on priority basis can be made to improve irrigational facilities and to lowering the cost of irrigation. Supply of modern agricultural machineries to the cultivators is also essential due to scarcity of livestocks through village club or Union office. Agricultural laboures can be engaged throughout the year by scientific

rotation of crops. As a result, the market fulfils the commodities in all season. The people in general and the peasants in particular usually common fair purchasing power in the market centre.

From the field study, it has been observed that some parts of the district are potentially rich for starting different agro-based industries. As for example, Mollahat Police Station is rich in sugar cane production and a sugar mill has already been started at remote village, but it is not functioning properly till now. Therefore, in order to utilise the available resources mills have to be brought under production. Mongla & Sarankhola Police Stations are famous for construction of boats, for fishing, therefore, this industry should be encouraged. People of both these police stations are specialized in fishing, therefore they should be encourged by giving proper inatiative to develop this industry. The district is famous for paddy production. Therefore, rice mills in major scale can be developed in this region. As fishing is one of the main occupation of the people of these two police stations, so, fish trade industry (Hatchery, fishing project etc.) can be developed. Apart, the district has a vast area of Sundarban forest with varieties of timbers, therefore, timber and its associated industries can be opened near the forest belt. Along with all these, fish feed, poultry and cattle feed industries can prosper in the district. Industries like pottery and brick field have good prospect in Morrelgonj, Kochua & Bagerhat Police Stations. In view of long scale unemployment, it is highly essential to encourage entrepreneurs for starting the above mentioned prospective agrobased industries for solving the unemployment problem.

Agro-based industries can also be established in the romote areas having potentialities. And the agriculture workers can be engaged considerably. On the other hand, economic backwardness of the district can be solved by bringing about consciousness among the people of the district. So environmental changes in the society is urgently required.

Electricity is widely used in agriculture & cottage industries in most developed and under developed countries in the world for its easy availability and low cost. Many modern implements can be easily operated with electicity at low cost. From the field study, it is observed that the number of villages where electricity is available it very few.

Electricity is available only in police station headquarters and their surrounding areas. The development of irrigation in village area is very much hindered due to shortage of electiricity. Electricity is also essential for running cottage industries. As a result, proper supply of electricity should be ensured. The study areas should be given priorities for electricity. As regards to regularity of supply of electricity, the old transformers and extra new connections are unable to carry the load of the current, so, it is frequently disrupted, therefore, there is need for replacement of the old transformer and reduce the extra connection to keep regular power supply in the region.

The district does not possess any storage facilities for perishable commodities, like fruits, vegetables and fishes, so it is essential to have such facilities in the prominent villages. Therefore, cold storage facilities are to be provided in higher class market centres, where perishable commodities arrive in plenty. This should be taken as priority.

As regards to transport and communication, it is noted that the district does not have enough transport and communication links. so the villages of market command area have very poor linkage. Therefore, the existing kacha roads are to be made metalled or repaired. For the better communication all seasons roads at the periphery of the market are quite necessary. It is important that production zone should be properly linked with ring road. It is so then it would be possible for good transaction of commodities in the rural areas. Transport of agricultural products having been improved the producer will get higher price for their produce.

Water transport from police station headquarters to other inter-market places has to get initiation to improve the network of transport in the district. Apart, from these, fringing village of forest in the southern portion of the district having a poor transport network should be brought under good communication link. The present Mongla road which traverse Sarankhola and Chaterhat markets should be converted to metalled road. Inter village roads in the entire district require renovation. As regards to post office and tele-communication, a few villages have post offices. Therefore, at least, 80 percent of villages should be covered with inter-village for postal delivery in a shorter time. In most of the rural market centres have no telephone connections. Mobile telephone system should be provided in every higher class market centre.

It is observed that the location of the police station headquarters is not at an inconvenient place. It is the main artery through which useful information is passed to different villages. Farmers had to come at least 15-20 kms to get its facility. Therefore, the police station headquarters office should be conveniently located at central place. Mollahat & Mongla Police Station headquarters office should be located at the centre place of the police station for better services. Those offices require efficient officers who can devote most of the times for rural development. Sarankhola & Morrelgonj Police Station have the same administrative problem. It is noted that there should be proper co-ordination between the machineries of defferent departmental farming offices with rural development machineries in the study area.

It is also observed that infrastructural deficiency like financial institution, health services, educational institutions and others can be solved by increasing the number and order of these functions potentially rich market centres. As the distribution of market centres is uneven, so new market centres have to be estableshed for minimise the aggregate travel distance for better services. Thus, the spatial and functional gaps in the district can be minimised. and administrative facility can conveniently be extended.

The socio-economic factors, which lead to economic backwardness of the area in general and the inhabitants in particular are lack of employments, fluctuation of income from agriculture, low literacy rate, low level of technology in agriculture and limited occupation pattern. Some of these problems can be solved by checking the high rate of population growth by adopting birth control measures and strengthening family planning programmes. This will partly solve the problem of unemployment. A part of the population can be absorbed by reviving the cottage industries. Introduction of modern technology in agriculture will help to increase income from agriculture. The flood control and irrigation development will also help to increase production and income from agriculture. It has been observed that farmers in the district are poor and live from hand to mouth and are mostly illiterate. They prefer to engage their children in agriculture, household work and fishing rather than to send them to school. This happens mainly due to their poor economic conditions and they are mostly inhabited at the fringe area of the forests. Therefore, extension services to educate the people in the art of cultivation are required

in the fringe area and to increase the level of utilization of new agriculture technology for economic development. It is also stated that the area is more concerned with fishing, therefore, use of modern fishing implements and technique of fishing is to be developed specially in Bhanishanta, Chila, Kaligonj, Rajapur, Sarankhola and Tafalbori market places. This will bring about economic transformation and change the concept of the people.

At present most of the people are engaged in agriculture but there is necessity of bringing about changes in the occupational pattern of the people. It can be done by opening new avenues of opportunities in services, trade and commerce in the district. The district is rich only in the production of cereals & varieties of some vegetables. Therefore, the economic conditions of the farmers can be improved by quick transporting marketing of these perishable commodities.

It is further evident from the study that the market centres of Rampal & Mollahat Police Station are the most under developed in respect of differential services. The consumers, who are generally farmers face the problem of dearth of essential commodities in the area. Therefore, it is suggested to bring about more retail & co-operative centres in these market places of the district. The presence of important offices, road links in Bagerhat, Fakirhat & Jattrapur market centres, indicates that these centres are developing. Thus, spatial attention is required to develop the market centres into a self-sufficient nodes. Distribution system of industrial goods is quite poor in the rural areas of the district. The existing co-operative societies are very few and also limited to a certain market places. Therefore, it is also suggested that different co-operative societies should be opened in the rural centre place of the district rather than concentrating in the urban centre.

Finally, the suggestions which have been mentioned for the development of the study area are essential for area development and to raise the economic standard of the rural poors. The market centres of Bagerhat district are acting partly. The governmental machineries should act simultaneously with the market centres for the development of rural people.

Numerous problems regarding market morphology have been analysed. Now some major solutions to the problems are given below.

(i) Road Condition : Roads in the market are not maintained properly, Roads are very narrow & dusty. Roads connecting markets are unmetalled. These become muddy in rainy season and dusty in dry season, so, it is very tough for movement in rainy season on these roads. It can be solved by constructing new metalled road in the business area.

(ii) Water Supply : There is an acute fresh water shortage in market place Tube-well or filtered water is not available for the purchasers. It can be solved by constructing tube-wells or filtered tank at market area and their number should be gradually increased, so that the people will get enough pure water.

(iii) Housing Planning for traders : Housing problem is the main problem of the market centres among the living people i.e. those who have residence in the market place area. They are facing various problems, like space, number of rooms etc. The house is made of local wood. & straw. They live in unhygienic condition. The availability of housing loans can be ensured to solve the problem.

(iv) Sanitation Planning : Drainage & clearing facility is not available in market place and hence this has created sanitary problem. This should be solved by constructing drains in every market lane. There is no urinal & latrine in lower class markets and in higher class markets, its number is very few. Public lavatories and urinal points should be constructed especially for buyers and outsiders in the market centres.

(v) Planning of market site : Several varities of commodities are on sale in the market place e.g. vegetables, grain, grocery fruits etc. In the market place the temporary sellers sit hapazardly. Specially, these sellers should need selected place. It is also found that the temporary sellers (producer seller) sit mainly on the road side or in front of permanent shops. It is a burden for movement of purchasers. So, it is necessary to plan & selec a place for out going temporary sellers. New house should be consctructed separately for individual group of outside sellers.

(vi) Inside market trader groups plane : The permanent vegetable and fruit markets are located in a same place, which causes inconvenience for the customers. In some cases hair-cutting & grocery shops sit together on a market lane. So, market lane is congested. More area should be provided for traders in most markets, Well planned stalls should be provided as well. As a result, it would be convenient to the customers and maximum people can get the market facility.

(vii) Slum problem : Large size markets have a number of slums. The slum areas are found mainly on the backside of commercial market lane. The slum people construct semi-permanent hut by bamboo and they do not have water, drainage and latrine facilities. Slum dwellers, those are engaged in markets should be rehabilitated in Government waste land or 'Char' area.

There are many constraints and the agony of the rural people knows no bound. With proper understanding and judicious planning, the situation may be vastly improved. The perspective of this research work is of paramount importance. Because the scientific analysis of the problems of study areas may pave the way for detailed examination regarding the rural producers (who produce market goods) of our country.

CONCLUSION

On the basis of the study, it may thus be concluded that the district is one of the coastal areas of Bangladesh. Its economy depends mainly on agriculture. Many ways, markets play an important role in socio-economic and socio-cultural development of the region as a whole and an economic upliftment of the producers in particular. Yet, rural markets serve as a focus for collecting & distributing point of the rural area. These markets have social, political & cultural importance. The people in general and the shop-keepers in particular are acquainted with other people of their own village and also adjacent villages.

But the agriculture of the district has ramained under developed. The economy of market command people depends on mainly seasonal agriculture. The reason behind the backwardness and problems for development of the markets are many but are mainly due to : physical, economical and socio-cultural factors. Drainage, siltation of river, natural calamities, soil erossion slaiene-water are the constaints of rural

development. Electricity, transport, industries, unemployment, cultural institutions are the other factors of the district for development. These problems need to be examined and evaluated by experts and physical planners in order to provide and create healthy rural markets for the community.

It may also be stated that the number of markets having potentiality for development are few in the district. The geographical locations and growth of existing markets are haphazard and unsystematic. The density of population in the complementary region is high and is increasing steadily. So supply does not keep pace with demands. Consequently, availability of existing market functions and their complementary regions are poor. Sometimes the accessibility of the these markets are remote to the inhabitants. Road-links between towns & markets and between markets & their dependent territories are poor. So, the spatial and functional gaps in the district are high and it needs some infrastructure for its development.

It has been brought out in detail through this study that the district - comprises nine police stations and these are of similar category. The relief, drainage, climate and soils of these police stations are of similar character. The characteristics of the physiographic setting along with its different resources have given rise to various classes of markets, which is not generally found within of such a small region. In discussing the characteristic elements of the different types of markets, it is found that the markets reflect close relationship between the rural people and its environments.

Infine, it can be said that this study has several significance. The collected data from 156 market centres and the observed common characteristics of markets in the district we help the future researches. It is diversified the population with market centres ratio and village, and area with market centres relation etc. It is also identified the relation between command area and command population of each market centres in the district. Some theories of marketing those were not tested before in the area can be introduced in the study area. The characteristics of selected markets have been identified for development planning. Hence, the result of the study will be helpful for planning of market development as well as rural development not only in Bagerhat district but also in Bangladesh.

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APPENDIX TABLE - I

Name of the markets and mauza, their area, population & density.

Sarankhola P.S.

Sl. No.	Code No.	Name of the markets	Name of the Mauza	Area (ha)	Population	Density (per ha)
1	001	Jabberer hat	Dhansagor	882	3205	5
2	002	Banddakata hat	Dhansagor	882	3205	4
3	003	Jahur Ali	Dhansagor	882	3205	5
4	004	Sutu Khar	Nalbumia	1483	8174	7
5	005	Amragasia	Nalbunia	1483	8174	7
6	006	Rajapur	Rajapur	1093	5120	7
7	007	Taltata	Amragasia	1218	9106	7
8	008	Baniakhali	Baniakhali	857	5573	8
9	009	Khontakata	Morrolabad	1740	11630	8
10	010	Rasulpur	Dhakhin Rajapur	1513	8119	5
11	011	Banglabazar	Khada	812	5,434	8
12	012	Rayenda bazar	Rayenda	1656	9,756	7
13	013	Lakurtala	Rayenda	1656	9,756	7
14	014	Tafalbari	Sonatala	1751	9,420	5
15	015	Sarankhola	Sarankhola	1942	10,273	5
16	016	Bagibazer	Sarankhola	1942	10,273	5
17	017	Chalitabunia	Sarankhola	1942	10273	5
18	018	Terabaka	Sarankhola	1942	10273	5
19	019	Khuriakhali	Sarankhola	1942	10273	5

Kachua P.S.

1	020	Badalbazar	Badal	331	2193	8
2	021	Bagarhat	Baga	80	588	7
3	022	Basarhat	Bhasa	196	928	6
4	023	Razarhat	Bisherkhola	406	1867	6
5	024	Gozalia	Gozalia	1171	7844	8
6	025	Lararhat	Sonakander	203	821	4
7	026	Gopalpur	Gopalpur	471	3553	8
8	027	Fultala	Fhultala	77	853	11
9	028	Kachua	Kachua	128	1660	14

Contd..

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10	029	Bairagirhat	Char Sonakur	532	1945	5
11	030	Talessarhat	Mogia	268	1632	6
12	031	Signbord	Chandrapara	43	904	21
13	032	Goalmat	Raripara	424	2269	5
			Fakirhat P.S.			
1	033	Fakirhat	Attaka	92	1313	14
2	034	Mansha	Mansha	162	1683	10
3	035	Betaga	Betaga	138	802	7
4	036	Jaria	Joria	182	1127	6
5	037	Battala	Battakhamar	193	1496	9
6	038	Lakpur	Lakpur	307	2223	7
7	039	Faltita	Faltita Baniakhali	388	2015	5
8	040	Pilgorgo	Maubhog	698	5476	8
9	041	Noapara	Noapara	314	2323	7
10	042	Tekatia	Pilgonga	851	4495	5
11	043	Vagonerpar	Tekatia	448	2468	6
			Chitalmari P.S.			
1	044	Barashia	Char Baaniari	717	4774	8
2	045	Khaserhat	Kharam khali	286	1438	5
3	046	Barobaria	Barabaria	2192	11028	5
4	047	Arua barne	Arulia	88	1010	11
5	048	Chitalmari	Chitalmari Aruabarni	54	454	8
6	049	Bakergonj	Raigram	474	999	2
7	050	Jaldanga	Sursail	77	344	4
8	051	Hizla	Hizla	1289	6815	5
9	052	Kaligonj	Sontospur	413	2965	7
10	053	Chinguria	Chingari	584	3390	7
11	054	Kalatala	Kalatala	18	2042	1
12	055	Machlandapur	Machandapur	70	986	14
13	056	Saildha	Puranbari	161	874	5
14	057	Naluahat	Kallgal Dobtala	1422	15508	12

Contd.

Rampal P.S.

1	058	Chaksri	Chaksri	144	1417	11
2	059	Kalgonj	Barodia	172	794	5
3	060	Giilatala	Gilatala	398	3226	8
4	061	Gaurambha	Gaurambha	238	1751	7
5	062	Bashtali	Hukra	1365	4331	3
6	063	Perikhali	Perikhali	418	3619	10
7	064	Bhaga	Bhaga	196	907	6
8	065	Janjhonia	Jhanjhania	224	1987	10
9	066	Dhakra	Rampal	111	987	10
10	067	Shripaltala	Sripaltala	357	4038	11
11	068	Failahat	Dhaldaha	140	1030	7
12	069	Awliahat	Ujalpur	222	1789	8

Mongla P.S.

1	070	Banishanta	Banishanta	2782	11237	4
2	071	Chaterhat	Chhandpai	535	2767	5
3	072	Dikraj	Malgazi	45	1612	6
4	073	Buridangga	Buridangga	395	2159	5
5	074	Chilahat	Chila	1200	5445	6
6	075	Goperhat	Khonkererber	1591	6399	4
7	076	Mitakhali	Mithakhali	392	2324	7
8	077	Madurpalda	Sahibermet	562	1910	3
9	078	Khanjakhan Ali	Sonailtala	366	2320	6
10	079	Bashtala	Bastala	692	3480	5
11	080	Baudyamari	Bidyamari	28	244	2

Mollahat P.S.

1	081	Bharobuni	Atjuri	401	2358	7
2	082	Bhanderkhola	Bhanderkhola	688	3674	7
3	083	Kahalpur	Khalpur	1130	7108	6
4	084	Chunkhola	Chunkhola	257	2215	10
5	085	Kachna	Kachna	616	4321	7
6	086	Dhariwalla	Bill Manbhog	1403	416	1
7	087	Gangni	Gangni	114.4	10875	10

Contd....

8	088	Nagorkandi	Shiali	942	5781	6
9	089	Nasuakhali	Diaganga	362	1428	5
10	090	Chadarhat	Goala	1181	6110	5
11	091	Paglarhat	Kendua	916	695	2
12	092	Joydihi	Munizila	1050	5070	6
13	093	Chalturerhat	Munizila	1050	5070	6
14	094	Kodalia	Munizila	1050	5070	6
15	095	Sharashpur	Rangamatia	1997	10232	5
16	096	Kachua	Rangamatia	1997	10232	5
17	097	Aruadihi	Rangamatia	1997	10232	5
18	098	Charkulia	Kulia	427	4272	10
19	099	Garfa	Garfa	452	982	2
20	100	Mollarkul	Mollarkul	341	2210	6

Bagerhat P.S.

1	101	Baraipara	Baraipara	577	2755	6
2	102	Katakhali	Bagdia	140	588	4
3	103	Karttikdia	Kaklikadia	390	3726	11
4	104	Ujalpur	Ujalpur	266	1371	5
5	105	Madrashahat	Bemrata	170	391	2
6	106	Koramara	Karamara	456	3038	8
7	107	Bodokhali	Paikpara	56	1415	25
8	108	Deypara	Dabpara	102	2918	10
4	104	Ujalpur	Ujalpur	266	1371	5
5	105	Madrashahat	Bemrata	170	391	2
6	106	Koramara	Karamara	456	3038	8
7	107	Bodokhali	Paikpara	56	1415	25
8	108	Deypara	Dabpara	102	2918	10
9	109	Baburhat	Gotapara	243	1860	8
10	110	Jattrapur	Jatrapur	83	1253	15
11	111	Utkul	Utkul	432	3055	7
12	112	Karapara	Karapara	253	2830	11
13	113	Chulkati	Chilkati	22	223	10
14	114	Dhalchaka	Daskinkhanpur	534	4834	9
15	115	Kalibari	Kismat Batta	65	560	10

Contd....

16	116	Polerhat	Uttarkhanpur	375	2066	7
17	117	Rakhalgachhi	Karari	293	1488	5
18	118	Cianbe	Saidpur	368	2491	8
19	119	Barakpur	Barakpur	204	969	7

Morelgonj P.S.

1	120	Phulhata	Uttar Phulhata	1096	5715	5
2	121	Sanirjor	Sonirjor	268	1643	6
3	122	Kalikabari	Balaibunia	1202	7558	6
4	123	Banogram	Banagram	94	444	6
5	124	Tatulbaria	Dakshin Satalari	1062	7217	8
6	125	Taltala	Bara Jamua	84	700	8
7	126	Chingrakhali	Chingrakhali	678	5871	9
8	127	Amtala	Alte Burujboria	305	2406	8
9	128	Daibaghati	Daibagnyahati	46	545	12
10	129	Munsirhat	Gazirhat	373	1638	4
11	130	Hoglabonia	Hoglabonia	336	2145	6
12	131	Nagerhat	Kalikabari	283	2196	8
13	132	Choukidarerhat	Sankibhanga	455	3451	6
14	133	Shoulkhali	Baulpur	295	2188	7
15	134	Hoglapasha	Hoglabunia	569	2246	5
16	135	Madrasharhat	Dakshin Phulhata	950	3756	5
17	136	Kalibarihat	Dauatala	1160	5258	6
18	137	Khaoliarhat	Chalitabunia	1227	8929	7
18	138	Amotoli	Kumarkhal	1248	9281	7
20	139	Shannashi	Kumarkhali	1748	9281	7
21	140	Sannashilounchghat	Kumarkhali	1748	9281	7
22	141	Baniakhali	Purbachipabarikhali	603	3509	7
23	142	Chipabarikhali	Purbachipabarikhali	568	3505	6
24	143	Morrelgonj	Morrelgonj	807	10833	13
25	144	Maulovirhat	Guatala	862	4143	6
26	145	Gulisha khali	Gulisha khali	714	3682	5
27	146	Jiudhara	Jiudhara	1055	4373	4
28	147	Panchokaran	Char Panchokaran	639	4225	8
29	148	Batkali	Char Batkali	263	1749	8

Contd

30	149	Sonakhali	Chan Pulikhali	870	5520	6
31	150	Sonakhali Ferighat	Char Pulikhali	870	5520	6
32	151	Monggoler Hat	Pulikhali	680	4114	6
33	152	Kamalapolerhat	Kamala	229	1252	5
34	153	Ramchandrapur	Ramchandrapur	108	609	7
35	154	Duligali	Chak Dhuliganti	266	1412	5
36	155	Herma	Chak Baraganti	228	988	4
37	156	Polarhat	Chak Teligali	722	3767	5

APPENDIX TABLE- II

Land utilization of Bagerhat district(1995-1996)

Sl.no	Name of the p.s.	Total utilization land(6+7)	Cultivated land in ha				Non-cultivated land	Forest
			Cropped area	Orchard	Current fallow	Total land		
	1	2	3	4	5	6	7	8
1	Bagerhat	12203	8047	1628	80	9755	2341	--
2	Chitalmari	18572	14083	548	720	15071	3221	--
3	Fakirhat	15186	11817	993	221	13031	2156	--
4	Kachua	16808	11829	2046	91	13966	2842	--
5	Mongla	18456	13025	218	98	13341	5114	125956
6	Mollahat	15263	11746	228	2293	14167	996	--
7	Morrelganj	43304	27411	2024	205	29639	13664	--
8	Ranpal	27172	17024	1371	90	20485	6687	--
9	Sarankhola	14949	10209	2701	20	12930	2019	58770

APPENDIX TABLE - III

Types of croping area (ha)

Name of the p.s.	Mono crop	Double crop	Tripple crop	Total area
Bagerhat	4931	2850	266	8047
Chitalmari	494	8003	540	9037
Fakirhat	8108	3228	481	118177
Kachua	7059	3654	208	10927
Mongla	12732	275	18	13025
Mollahat	7998	2920	828	11746
Morrelganj	24306	2524	488	2732
Rampal	18534	486	04	19024
Sarankhola	7403	2718	88	10209

Source: 'Thana' statistical office ,1995, Bagerhat, Bangladesh.

APPENDIX TABLE - IV

Area & Production of major crops (1990)

Production in Quintal

Area in hector

Name of the P.S	—	Aus	Aman	Boro	Wheat	Jute	Sugarcane	Peleteos	Pulse	Spices	Vegetables
Bagerhat	Production	32887	208430	1029	910	637	31920	13851	822	1588	10405
	Area	3130	19810	3524	53	268	80	410	299	266	342
Fakirhat	Production	24679	121773	17499	798	648	61104	20250	1412	52	15048
	Area	2408	9238	249	42	119	107	383	559	1922	448
Kachua	Production	30734	145915	2214	287	266	180576	15594	559	1922	6234
	Area	2400	9929	3068	17	94	317	235	106	106	93
Mollahat	Production	124505	218739	1612	na	1821	29640	45942	3399	4635	5640
	Area	11444	17396	2594	na	6338	279	142	1496	624	223
Morrelgonj	Production	52114	373008	350	90	139	62453	70351	1113	859	3538
	Area	2840	27972	378	06	53	138	762	169	186	59
Rampal	Production	768	395869	09	137	50	17480	16112	333	971	4917
	Area	60	29152	42	08	24	37	160	41	99	60
Sarankhola	Production	47844	13931	377	na	236	14022	4332	270	579	1953
	Area	2880	10840	360	na	118	32	192	44	58	38
Total	Production	313532	1603043	23090	2222	3796	663955	155466	13368	111361	47736
	Area	25162	124337	60763	126	1493	1211	4310	6227	2144	163

Source : District Agriculture Office, Bagerhat,1995

APPENDIX TABLE - V

Rainfall, Temperature & Humidity of the district (Khulna Centre)

Mean Rainfall (m.m.)

Year	Total	July	August	Sept.	Octo.	Nov.	Dec.	Janu.	Feb.	Mar.	April	May	June
1994	2147	296	482	159	81	0	6	32	0	0	96	223	772
1993	2083	258	445	235	274	6	6	49	59	40	53	358	300

Mean Temperature(◦C)

1994	Maximum	30	31	30	31	29	16	21	25	33	32	32	28
	Minimum	27	27	26	26	18	13	13	13	18	25	27	26
1993	Maximum	30	30	30	30	25	25	23	25	29	33	32	32
	Minimum	24	27	23	26	20	14	14	16	21	25	26	28

Mean Humidity (Percent)

	Time												
1994	00.00	96	95	96	95	92	94	85	91	92	94	93	95
	03.00	90	87	87	79	75	82	82	75	75	81	78	85
	12.00	87	83	86	77	75	75	65	65	61	71	65	82

Source : Kachua Meteorological Station, 1995

APPENDIX TABLE- VI

Occupational pattern of Bagerhat District (No. of holding).

Name of p.s.	Non working	Household work	Agricul-ture	Workers	Transport& constraction	Business	Services & others	Total
Bagerhat	46505	62797	23604	894	4324	12516	23120	173760
Chitalmari	21064	32729	26093	304	686	3136	3522	87534
Fakirhat	23210	32427	17628	395	1250	5844	9421	90095
Kachua	17149	25621	14258	176	928	3988	4598	66718
Mollahat	20764	27996	21522	968	518	2232	3500	77500
Mogla	17789	35785	11096	276	2132	8765	23603	99446
Morrelgonj	55406	90668	39688	809	2460	12954	23834	224819
Rampal	28293	46915	20956	318	1394	8860	15877	122613
Sorankhola	16205	31505	10850	291	736	5713	6830	72128

APPENDIX TABLE - VII

Length of the Transport System of the district(Water+Road+Railway)

SL. No.	Name of P.S.	Kacha road	Metelled road	Pacca road	Rail way	Water way	Total
1.	Bagerhat	244.00	14.00	31.20	15	32	356.20
2.	Chitalmari	27.48	10.00	6.00	-	59	102.40
3.	Fakirhat	352.00	33.00	9.00	10	25	429.00
4.	Kachua	177.74	-	20.10	-	114	311.85
5.	Mollahat	201.19	3.60	16.00	-	105	325.76
6.	Mongla	258.00	40.00	26.00	-	130	454.00
7.	Morrelganj	3250.00	6.00	10.00	-	750	4016.00
8.	Rampal	376.50	23.20	24.30	-	270	693.96
10.	Saronkhola	211.30	8.70	9.00	-	78	307.53
	Total	**5098.21**	**138.50**	**171.60**	**25**	**1563**	**6996.00**

Source : Statistical office,Bangladesh Bureau of Statistics, 1995.

APPENDIX TABLE - VIII

Population,Area,Village Market Centre with road length of the district

SL. No.	Name of the P.S.	Total length of roads	No. of market Centres	Total Pop.	Total area (km^2)	Number of Villages
1.	Bagerhat	356.20	19	235848	273	167
2.	Chitalmari	102.48	14	12524	192	121
3.	Fakirhat	429.00	11	123956	160	87
4.	Kachua	311.85	13	93249	132	96
5.	Mollahat	325.76	20	116729	188	102
6.	Mongla	454.00	11	137947	187	76
7.	Morrelganj	4016.00	37	321153	461	184
8.	Rampal	693.96	12	167070	335	139

APPENDIX TABLE - IX

Relation (score value) between road length and market centre with population, villages and area of the police station

SL.	Name of the P.S.	Length of roads per lakh population	Length of roads per 100 km^2	Length of roads per 10 m.c.	Length of roads per 10 villages	Total score
1.	Bagerhat	151.0	130.4	187.4	21.3	490.1
2.	Chitalmari	80.4	53.4	73.2	8.4	215.4
3.	Fakirhat	346.0	268.1	390.0	49.3	1053.4
4.	Kachua	334.4	236.2	239.6	32.4	842.6
5.	Mollahat	279.0	173.3	162.8	31.9	647.0
6.	Mongla	329.0	242.8	412.7	59.7	1044.2
7.	Morrelganj	1250.0	871.1	108.5	218.2	2424.8
8.	Rampal	415.0	207.2	578.3	49.96	1250.4
9.	Sarankhola	285.1	189.8	161.8	69.8	706.5

APPENDIX TABLE - X

Nearest neighbour index analysis

Sarankhola police station

Code no.	Name of the markets	Code no.of nearest market centres	Distance in k m
01	Jabbenerhat	1 from 2	1.25
02	Bandakata	2 1	1.25
03	Jahurali	3 144	2.00
04	Suduker	4 2	1.70
05	Amragasia	5 7	1.50
06	Rajapur	6 1	3.25
07	Taltalahat	7 5	1.50
08	Baniakhali	8 138	1.00
09	Khontakata	9 8	2.25
10	Rasulpur	10 11	2.50
11	Banglabazar	11 07	1.50
12	Rayenda	12 13	2.50
13	Lakurtala	13 11	2.50
14	Tafalbari	14 13	2.75
15	Sarankhola	15 19	2.00
16	Bagibazar	16 17	2.00
17	Chalitabnia	17 19	1.00
18	Terabaka	18 17	1.50
19	Khuriakhali	19 17	1.00
	Total	———	**34.95**

$Rn = 2\bar{D}\sqrt{N}/A$

Hear, D= 34.95

$\bar{D} = 1.83$

N = 19

A = 162.63 km²

$Rn = 2 \times 1.83 \times \sqrt{19}/162.03$

$= 1.25$

APPENDIX TABLE - XI.

Number of Market Centre,Population,Area,Inhabitant village of the district (1991)

SL. No.	Name of P.S.	Population	Area km^2	Inhabitant village	Market Centre
1.	Bagerhat	235848	272.73	**167**	19
2.	Chilatmari	127524	192.00	**121**	14
3.	Fakirhat	123956	160.00	**87**	11
4.	Kachua	93249	131.62	**96**	13
5.	Mollahat	116729	187.88	**102**	20
6.	Mongla	137947	186.89	**76**	11
7.	Morrelgonj	321153	460.91	**184**	37
8.	Rampal	167070	335.46	**139**	12
9.	Sarankhola	107858	162.03	**49**	19

Source : Bangladesh Bureau of Staistics , 1995.

APPENDIX TABLE -XII.

Comperative Study of market centre by relationship of different police station in the district.

Sl. No.	Name of P.S.	$Mcs^*/_{1000pop}$	Rank	$Mcs/_{10km^2}$	Rank	$Mcs/_{10}$ villages	Rank	Rnak total	Average	Rank
1.	Bagerhat	0.081	7	0.697	5	1.138	8	20		7
2.	Chitelmari	0.109	5	0.729	3	1.150	7	15		5
3.	Fakirhat	0.087	6	0.684	7	1.26	6	19		6
4.	Kachua	0.139	3	0.187	4	1.35	5	12		3
5.	Mollahat	0.171	2	1.064	2	1.96	3	7		2
6.	Mongla	0.079	8	0.659	8	1.44	4	20		7
7.	Morrelgang	0.115	4	0.694	6	2.01	2	14		4
8.	Rampal	0.071	9	0.357	9	0.86	9	27		9
9.	Sarankhola	0.176	1	1.172	1	4.31	1	3		1

* Market Centre.

Appendix Table - XIII
Command area and command population

Bagerhat P. S.

SL No.	Name of markets	Area in ha	Population	Area in %	Population in %
1.	Baraipara	831	4493	3.2	2.6
2.	Katakhali	820	3908	3.2	2.3
3.	Karticdia	1110	8715	4.3	5.1
4.	Ujalpur	578	3318	2.2	2.0
5.	Madrasha	3703	24058	14.3	14.2
6.	Koramara	1863	10654	7.2	6.2
7.	Bhadokhali	1247	8734	4.8	5.1
8.	Baburhat	1325	9854	5.3	5.8
9.	Deypara	1701	11586	6.6	6.8
10.	Utkul	432	3055	1.7	1.8
11.	Jattrapur	2140	12797	8.3	7.5
12.	Ciembe	1060	7080	4.1	4.1
13.	Rakhalgasi	763	3816	3.0	2.2
14.	Chulkati	770	6691	3.0	3.9
15.	Dalchaka	420	2722	1.6	1.6
16.	Kalibari	431	2479	1.7	1.4
17.	Poterhat	490	2896	1.9	1.7
18.	Barakpur	3642	19260	14.1	11.3
19.	Karapara	2494	2458	9.6	4.4

Chitalmari P.S.

1.	Chitalmari	2834	19275	15.9	17.0
2.	Jaldanga	146	755	0.8	0.7
3.	Aruabomi	122	1010	0.7	0.8
4.	Bakerganj	3030	5996	17.0	5.2
5.	Barobaria	2462	16554	13.8	14.5
6.	Naluahat	1422	15506	8.0	13.6
7.	Khasherhat	739	4360	4.1	3.8
8.	Babuganj	1346	7951	7.5	7.5
9.	Kaliganj	1943	11687	10.8	10.2
10.	Hijlahat	2330	12942	13.1	11.3
11.	Seldhahat	344	1860	1.9	1.6
12.	Chingguri	627	10476	3.5	9.4
13.	Kalatala	447	3628	2.5	3.2
14.	Muslendupur	66	2042	0.3	1.8

Contd....

			Fakirhat P.S.		
1.	Fakirhat	3967	29504	25.3	29.5
2.	Jaria hat	511	2390	3.3	2.4
3.	Mansha hat	1570	10941	10.0	11.0
3.	Betaga hat	1316	7388	8.4	7.4
3.	Battala	718	4730	4.6	4.7
6.	Lakpur hat	1114	8264	7.1	8.3
7.	Noapara	1445	9053	9.2	9.1
8.	Kalitala piljongo	851	4495	5.4	5.5
9.	Faltita	1841	12237	11.7	12.3
10.	Bangonerpar	737	2730	4.5	2.7
11.	Tekatia depara	1642	8050	10.5	8.1
			Kachua P.S.		
1.	Kachua hat	1492	11373	12.2	14.6
2.	Badal hat	2098	12612	17.2	16.2
3.	Goalmat	552	3083	4.5	4.0
4.	Signbord	1538	9083	12.6	11.7
5.	Gopalpur	774	4817	6.3	6.2
6.	Fultala	552	3464	4.5	4.5
7.	Vashar hat	588	4892	4.8	6.3
8.	Bagha hat	666	5274	5.5	6.7
9.	Gojalia	1223	8251	10.0	10.6
10.	Rajarhat	443	2409	3.6	3.1
11.	Larar hat	312	1370	2.6	1.8
12.	Taleshower	1189	7588	9.7	9.8
13.	Bairagirhat	774	3547	6.3	4.5
			Mongla P.S.		
1.	Banishanta	2782	11237	14.6	14.3
2.	Chater hat	1356	7832	7.1	10.0
3.	Mongla(Buridonga)	675	2763	3.5	3.5
4.	Dikraj	2858	9135	15.0	11.7
5.	Chilahat	2980	12656	15.6	16.1
6.	Goperhat	857	3241	4.5	4.2
7.	Mitakhali	392	2324	2.1	3.0
8.	Madurpalta	2154	8309	11.3	10.6
9.	Khanjahan Ali	1488	7122	7.8	9.1
10.	Bashtala	1788	8460	9.4	10.8
11.	Bauddomari	1725	5288	9.1	6.7

Contd. ..

Mollahat P.S.

1.	Garfahat	2210	13401	11.1	12.2
2.	Mollahat	485	3192	2.4	3.0
3.	Chungola hat	1100	9206	5.5	8.6
4.	Kashna hat	1067	4873	5.4	4.5
5.	Dariwala	1687	3899	8.5	3.6
6.	Nagor kandi	1156	7410	5.8	6.9
7.	Gangani	1144	10875	5.7	10.1
8.	Nashuakhali	1858	7859	9.5	7.3
9.	Chader hat	1103	2479	5.5	2.3
10.	Paglar hat	1094	3143	5.5	2.9
11.	Barogoni	534	3521	2.7	3.3
12.	Vanderkhola	1013	6186	5.1	5.8
13.	Kahalpur hat	1130	7108	5.7	6.6
14.	Joydehe	406	2352	2.0	2.2
15.	Chalturirhat	524	2560	2.6	2.4
16.	Kodalia	613	2830	3.1	2.6
17.	Sarospur	501	2709	2.3	2.5
18.	Aruadihe	478	2541	2.4	2.2
19.	Kachuria	526	2510	2.6	2.3
20.	Charkulia	1295	9004	6.5	8.4

Morrelgonj P.S.

1.	Fulhata hat	1718	12169	4.0	4.5
2.	Sonirjor	1364	7558	3.1	2.8
3.	Kalicabari hat	1620	10976	3.7	4.0
4.	Bangram	1734	10627	4.0	3.9
5.	Tatul baria	2891	23559	6.7	8.7
6.	Chingrakhali	1272	11156	2.9	4.1
7.	Taltala	926	5056	2.1	2.0
8.	Amtola	381	3119	0.9	1.1
9.	Daiboghati	210	2977	0.5	1.5
10.	Monshir hat	1473	8537	3.4	3.1
11.	Hoglabunia	1104	8688	2.5	3.2
12.	Chokiderer hat	1100	6786	2.5	2.5
13.	Nager hat	697	5355	1.6	2.0
14.	Boulpur	911	5908	2.1	2.2
15.	Soelkhali	855	4197	2.0	1.5
16.	Kalibarihat	1837	5895	4.2	2.2
17.	Madrashahat	3130	13460	7.2	4.9
18.	Khaowlia hat	482	2832	1.1	1.0
19.	Amtoli hat	1265	5121	2.9	1.9
20.	Sonnashi hat	601	5001	1.4	1.8

Contd....

21.	Sonnashi-Launchgate	486	3160	1.1	1.2
22.	Baniakhali	691	4182	1.6	1.5
23.	Chipabaroikhali	626	3928	1.4	1.4
24.	Morrelgonj	1908	20057	4.4	7.4
25.	Moulovirhat	862	4343	2.0	1.6
26.	Gulishakhali	1768	8567	4.1	3.1
27.	Jiudara	2174	9987	5.0	3.7
28.	Pachgaon	2354	14895	5.4	5.5
29.	Vatkhali	685	4424	1.6	1.6
30.	Sonakhali	870	5520	2.0	2.0
31.	Sonakhali farigate	399	3078	0.9	1.1
32.	Mongoler hat	680	4114	1.6	1.5
33.	Kamlapolerhat	798	4738	1.8	1.7
34.	Ramchandrapur	1643	11264	3.8	4.1
35.	Duligati	494	2400	1.1	0.9
36.	Herma	417	1981	0.9	0.7
37.	Polerhat	1050	6501	2.4	2.4
			Rampal P.S.		
1.	Chaksri	3402	19632	11.6	14.2
2.	Gilatala	1507	10142	5.1	7.2
3.	Kaligonj	684	3107	2.3	7.2
4.	Kashimpur	4372	15064	14.9	10.9
5.	Gaurambba	3299	13907	11.2	10.1
6.	Awalia hat	4412	16147	15.0	11.7
7.	Dakra hat	1124	5670	3.8	4.1
8.	Perikhali	3950	17296	13.4	12.5
9.	Bhaga	682	3534	2.3	2.6
10.	Jonjonia	1750	7370	6.0	5.3
11.	Sripaltala	1126	6540	3.8	4.7
12.	Failahat	3098	19983	10.5	14.4
			Sarankhola P.S.		
1.	Rajapurhat	1093	5120	7.3	6.0
2.	Jobberer hat	312	1082	2.1	1.3
3.	Jahur Ali hat	279	995	1.9	1.2
4.	Bandakata hat	291	1128	2.0	1.3
5.	Sutokhahat	634	3602	4.2	4.2
6.	Amragasia hat	1218	9106	8.2	10.6
7.	Taltala hat	849	4572	5.7	5.3
8.	Baniakhali hat	1740	11630	11.6	13.6
9.	Khontakata	857	5573	5.7	6.5

Contd.

10.	Rayenda hat	3169	17875	21.2	20.8
11.	Lakurtala	204	1122	1.4	1.3
12.	Banglabazar	408	2892	2.7	3.4
13.	Rasulpur hat	405	2542	2.7	3.0
14.	Tafalbari hat	1547	8298	10.4	9.7
15.	Chalitabunia hat	406	2240	2.7	2.6
16.	Bogi hat	372	1891	2.5	2.2
17.	Terabaka	360	1810	2.5	2.1
18.	Khuriakhali	409	2360	2.5	2.83
19.	Sarankhola	385	1972	2.6	2.3

APPENDIX TABLE - XIV
Bid value and no. of shops of selected market centre.

Sl. No.	Name of the hat	Bid values Taka(1993)	Number of shops Permanent shop	Temporary shop	Total shop
	Bagerhat P.S.				
1	Barakpur	20,000	46	119	155
2	Cienbee	11,1,632	64	150	214
3	Deypara	15,0,000	98	273	371
4	Jatrapur	7,50,000	208	803	1011
5	Karapara	1,300	22	35	57
	Chitalmari P.S.				
1	Bakergonj	60,000	71	224	295
2	Barasia	1,000	44	1,328	182
3	Barabaria	56,000	94	548	642
4	Chitalmari	2,15,000	214	517	731
5	Nalua	2,15,000	89	473	562
	Fakirhat P.S.				
1	Fakirhat	6,01,000	1,028	548	1,576
2	Chulkati	2,75,101	230	798	1,028
3	Mansha	1,39,005	152	281	433
4	Betaga	71,608	71	245	316
5	Lakpur	65,700	66	209	275
	Kachua P.S.				
1	Kachua	6,51,000	199	414	613
2	Badal	8,04,020	119	880	999
3	Signbord	1,60,500	111	354	465
4	Gojalia	89,000	65	142	207
5	Goalmat	1,08,800	48	350	398
	Mongla P.S.				
1	Bouddomari	11,001	66	125	191
2	Khanjahan Ali	39,500	93	708	801
3	Chila	43,300	45	215	260
4	Dikraj	4,001	72	225	297
5	Banishanta	3,005	48	143	191
	Mollahat P.S.				
1	Garfa	30,100	143	402	545
2	Chungola	25,000	83	247	330
3	Nagorkandi	20,000	82	226	308
4	Gangni	10,100	61	259	320
5	Nasuakhali	16,100	68	286	354

Contd...

	Morrelgonj P.S.				
1	Baniakhali	50,000	63	516	579
2	Daiboghati	38,000	53	410	469
3	Fulhata	59,400	97	161	258
4	Kalikabari	1,000	61	156	217
5	Morrelgonj	4,00,100	566	704	1,270
	Rampal P.S.				
1	Perikhali	16,000	192	522	714
2	Janjonia	42,000	45	510	555
3	Gilatala	32,000	90	534	624
4	Bhaga	2,720	55	159	214
5	Faila	40,000	170	394	464
	Sarankhola P.S.				
1	Rayenda	1,85,101	376	517	893
2	Tafalbari	81,000	175	212	387
3	Rajapur	29,200	71	465	536
4	Amragasia	25,800	54	116	170
5	Khontakata	11,600	33	122	155

APPENDIX TABLE- XV

Grade of weeghtage of parameters

(i) Permanent shops

Range	Weightage
0 - 100	1
100 - 200	2
200 - 500	6
500 & above	10

(ii) Temporary shops

Range	Weightage
0 - 200	1
200 - 400	2
400 - 700	5
700 & above	10

(iii) Command Area

Range	Weightage
1,000 -2,000	1
2,000 - 4,000	5
4,000 -10,000	10

(iv) Command Population

Range	Weightage
0 - 5,000	1
5,000 - 10,000	2
10,000 - 20,000	5
20,000 - 30,000	10

(v) Attendance

Range	Weightage
0 - 1,000	1
1,000 - 3,000	2
5,000 - 10,000	5
10,000 -20,000	15

(vi) Bid value

Range	Weightage
0 - 50,000	1
50,000 - 2,00,000	2
2,00,000 - 5,00,000	5
5,00,000 & above	10

(vii). Market days in a week

Range	Weightage
Two days -	1
Daily -	5
Daily with weekly with two market days	10

APPENDIX TABLE- XVI

Functional score value of different parameters.

	1		2		3		4		5		6		7		–
Name of the market centres	Attendence of m.c.	Score value	Permanent shops	Score value	Temporary shops	Score value	Command pop. of m.c	Score value	Command area of m.c	Score value	Bid value of m.c.	Score value	Market days	Score value	Total score value
Barrackpore	3100	5	46	1	119	1	19260	2	9105	10	20000	1	2	1	21
Ceanbe	3200	5	64	1	150	1	7080	5	2650	5	111632	2	2	1	20
Daypara	8100	10	98	1	273	2	11586	5	4252	10	150000	2	2	1	31
Jattrapur	16000	15	208	6	803	10	12797	5	5350	10	750000	10	2	1	57
Karapura	410	1	22	1	35	1	24543	10	6234	10	1300	1	2+daily	10	34
Chitalmari	10200	15	214	6	517	5	19275	2	7085	10	215000	5	2+daily	10	53
Nalua	2800	2	89	1	473	5	15506	5	3556	5	21500	1	2	1	20
Bakergonj	6700	10	71	1	224	2	5996	2	7576	10	60000	2	2	1	28
Barabaria	9300	10	94	1	548	5	16554	5	6154	10	56000	2	2	1	34
Barashia	2500	2	44	1	138	1	7951	2	3364	5	1000	1	2	1	13
Fakirhat	20100	15	1028	10	548	5	29504	10	9918	10	601000	10	2+daily	10	70
Chulkati	9200	10	230	6	798	10	8050	2	4106	10	275101	5	2	1	44
Mansha	7900	10	152	2	281	2	10941	5	3923	5	139005	2	2	1	27
Betaga	4250	5	71	1	245	2	7388	5	3289	5	71608	2	2	1	21
Lakpur	4900	5	66	1	209	2	8264	2	2784	5	65700	2	2	1	18
Kachua	9200	10	199	2	414	5	11373	5	3731	5	65100	2	2+daily	10	39
Badal	12070	15	119	2	850	10	12612	5	5246	10	801020	10	2	1	53
Signbord	8600	10	111	2	354	5	9083	2	3846	5	160500	2	2	1	27
Gojalia	7400	10	65	1	142	1	8251	2	3058	5	89000	2	2	1	22
Goalmat	9200	10	48	1	350	2	3083	1	1379	1	808800	2	2	1	18
Garfa	9200	10	143	2	402	5	13401	5	5524	10	30000	1	2+daily	10	43
Chungola	7500	10	83	1	247	2	9206	2	2749	5	25000	1	2	1	22
Nagorkandi	6400	10	82	1	226	2	7410	2	2890	5	20000	1	2	1	22
Gongni	7800	10	61	1	259	2	10875	5	2860	5	19100	1	2	1	25

Contd..

Nasuakhali	5000	5	68	1	286	2	7359	2	4643	10	16100	1	2	1	22
Bauddomari	2100	2	66	1	125	1	5288	2	4312	10	1000	1	2	1	18
Khanjahanali	5000	5	93	1	708	10	7122	2	3714	5	39000	1	2	1	25
Chila	4500	5	45	1	215	2	12656	5	7451	10	45000	1	2	1	25
Dikraj	2900	2	72	1	225	2	913	2	7144	10	4001	1	2	1	19
Banishanta	2000	2	48	1	143	1	11237	5	6954	10	3005	1	2	1	21
Baniakhali	7200	10	63	1	516	5	4182	1	1727	5	50000	2	2	1	25
Daibaghati	12100	15	53	1	410	5	2977	1	525	1	38000	1	2	1	25
Fulhata	8600	10	97	1	161	1	12169	5	4296	10	59400	2	2	1	30
Kalikabari	2500	2	61	1	156	1	10976	5	4050	10	1000	1	2	1	21
Morrelgonj	18500	15	566	10	704	10	20057	10	4770	10	400100	5	2+daily	10	70
Perikhali	8300	10	192	2	522	5	17296	5	9874	10	1600	1	2	1	34
Jojania	3000	2	45	1	510	5	4375	2	7370	10	42000	1	2	1	22
Gilatala	5000	5	90	1	534	5	10142	5	3767	5	3200	1	2	1	23
Bhaga	2600	2	55	1	159	1	3534	1	1706	1	2720	1	2	1	8
Failahat	9100	10	170	2	394	2	19983	5	7745	10	40000	1	2	1	31
Rayenda	10200	15	376	6	517	5	17875	5	7922	10	185100	2	2+daily	10	53
Tafalbari	6500	10	175	2	212	2	8298	2	3868	5	81000	2	2	1	24
Rajapur	5900	10	71	1	465	5	5120	2	2732	5	29200	2	2	1	26
Amragasia	4600	5	54	1	116	1	9106	2	3046	5	25800	1	2	1	13

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APPENDIX TABLE- XVII

Hierarchical Base (Function & Sub Function)

Name of the function	Weightage value	Name of the function	Weightage value
1. Education		**7. Personal service**	
a. Degree college	10	a. Carpenter	3
b. Intermadiate college	6	b. Radio & watch mechinist	
c. Secondary school	4	c. Tailor,Studio & Xerox	2
d. Junior high school	2	d. Cycle repierer	2
e. Primary school	1	e. Potteries	2
f. Madrasha	1	f. Saloon	2
g. Moktob(Private school)	1	g. Bedding Store	2
		h. Gold smith	2
2. Health service		i. Barber	1
a. 50th bed hospital	10	j. Lundry	1
b. Veterinary dispensary	5	k.Cobbler	1
c. Family planning clinic	3	l. Black smith	1
d. Charitable Dispensary	1	**8. Retail service**	
3. Transport		a. Electrical goods	5
a. Railway station	10	b. Furniture shops	5
b. Bus Terminus	5	c. Wholesale medicine shop	5
c. Launch station	2	d. Agricultural input shop	5
d. Engine boat station,	1	e. Provision Store	5
		f. Cement shop	5
4. Offices		g.Chemist & Druggist	3
a. Police St. Administrative office	10	h. Book shop	3
b. Police office	5	i. Rice	2
c. Others Government (Eng.,Agri., Livestock, Fishery, Statistical,Social welfare,Education, Settlement.)	3	j. Poultry	2
		k. Shoe shop	2
		l. Sweet & tea stall	2
		m. Food Hotel	2
		n. Stationary	2
		o. Fire wood shop	2
		p. Cloth & Garmeats	2
		q. Fish depo	2
		r. Pan bidi shop	1
		s. Molasses shop	1
		t. Tea stall	1
d.Private offices.	1		
5. Finance		**9. Communication**	
a. Goverment Bank (Seheduled)	10	a. Telephone exchange	10
b. Private bank (Co-operative club)	5	b. Telephone call office	3
c. Co-operative society	2	c. Sub-post office	5
		d. Branch Post office	1
6. Mills & Factories		**10. Spacialized item**	
a. Tabacco factory	10	a. Petrol pumps	10
b. Rice mills	5	b. Cinema hall	10
c. Saw mills	5	c. Video shop	5
d. Oil mills	3	d. Motor garage & work shop	10
e. Bekary factory	1		

APPENDIX TABLE- XVIII

Calculated Function score value(8 function)

Name of m.c.	Education	Health	Transport & communi-cation	Finance	Mills & factory	Personal service	Retail service	Others	Total	Dominant function	Level
Jatrapur	12	3	27	32	37	144	487	22	764	R.P.	IV
Ceanbi	5	-	5	-	25	49	113	-	197	R.P.M.	I
Barakpur	1	1	6	-	-	21	116	2	157	R.P.	I
Deypara	6	-	7	10	23	38	242	1	329	R.	II
Karapara	9	3	2	10	-	14	42	-	80	R.P.M.	II
Chitalmari	16	18	21	12	26	141	750	98	1018	R.P.	V
Nalua	5	-	2	-	13	39	242	-	301	R.P.	II
Bakerganj	5	-	7	-	10	23	221	-	266	R.	II
Barobaria	6	-	2	-	21	48	206	5	288	R.P.	II
Barasia	4	-	1	-	-	26	91	-	123	R.P.	I
Fakirhat	20	15	32	32	97	296	3161	128	3727	R.	V
Chulkati	1	-	14	10	30	183	516	11	765	R.P.	IV
Mansha	6	3	16	10	36	63	337	1	428	R.P.	III
Betaga	6	3	6	10	5	59	83	-	172	R.P.	I
Lakpur	5	-	6	10	13	56	116	1	207	R.P.	II
Kachua	12	18	31	30	50	96	512	73	765	R.P.	IV
Badal	1	-	7	10	27	63	304	-	417	R.P.	III
Signboard	-	-	5	-	16	57	264	-	342	R.P.	II
Gojalia	6	3	2	10	5	29	159	30	217	R.P.	II
Goal mat	6	3	7	30	28	41	92	3	209	R.P.M.F.	II
Garfa	15	15	23	40	65	110	226	83	523	R.P.	III
Chungola	6	3	2	-	6	56	195	1	269	R.P.	II
Nagorkandi	5	-	2	-	10	69	162	1	259	R.P.	II
Gongni	6	3	2	-	15	41	151	1	219	R.P.	II
Nasuakhali	6	3	6	-	30	21	167	3	326	R.M.	II
Bauddomani	2	3	2	-	5	29	194	3	239	R.P.	II
Khanjahanali	2	3	2	-	15	33	224	-	279	R.	II
Chila	1	-	2	-	-	14	38	-	55	R.P.	V
Dikraj	11	1	6	10	5	34	193	4	264	R.P.	II
Banishanta	1	-	3	-	-	27	121	3	155	R.P.	I
Morrelgonj	28	15	25	52	119	286	1511	108	2090	R.P.	V
Daiboghati	15	3	9	10	36	72	422	-	567	R.P.	III
Fulhata	11	8	4	10	25	38	235	3	531	R.	III
Baniakhali	5	-	2	-	15	27	187	-	231	R.	II
Kalikabari	5	-	6	-	-	28	199	4	142	R.P.	I
Rampal	20	10	23	32	15	107	461	73	687	R.P.	IV
Jonjonia	5	13	6	10	5	30	91	1	160	R.P.	I
Gilatala	15	3	8	10	35	54	151	1	275	R.P.M.	II
Bhaga	12	5	-	-	-	30	100	-	147	R.P.	I
Failahat	5	3	7	10	15	101	522	1	664	R.P.	V
Rayenda	27	18	23	30	87	245	1410	83	1889	R.P.	V
Tafalbari	17	3	8	-	20	82	364	-	494	R.P.	III
Rajapur	5	-	1	-	5	27	199				I
Amragasia	7	-	6	2	15	41	146	-	218	R.P.	II
Khontakata	5	-	1	2	5	8	118	-	1	R.	I

APPENDIX TABLE - XIX
(Questionnaire - 1)
Rural market survey for research.

Name of the police station :.....

A. Educational status of the p.s.

1. Number of the total Educational institution :.....
2. *Detail description :*

Name of the institution	Total no. of institution	Total of the teachers	Total students Male	Female
.....	.....	.....	.....	.....

a. Primary School, Evtiddya Madrasha.
(Madrasha Govt. & Regd.)
b. High School & Dakhil Madrasha.
c. College & Kamil Madrasha.
d. Others Educational inst.
3. Total no. of Mosque.

B. Health service of the p.s.

1. Total no. of health centre: ..... a. Hospital: ..... b. Family planning clinic: ....
c. Charitable Hospital: ..... d. Others clinic: .....
2. No. of staff: ..... a. Doctors: ..... b. Assistance: .....
c. Nurse: ..... d. Others: .....
3. No of bed: .....
4. Monthly or yearly outdoor and indoor patient: .....

C. Communication service.

1. Length of the road(Km): ..... a. Pacca: ..... b. Kacha: .....
2. Length of the water ways(Km): .....
3. Number of Telegraph & Post Office: .....

D. Land utilization.

1. Total Utilization Area(in hectre/acre): .....
2. Total cultivated area : ..... a. Single crops: ..... b. Double crops: .....
c. Triple crops: ..... d. Current fallow(patit): .....
3. Non - cropped area: ..... a. Orchard: ..... b. Forest: .....
c. Non cultivated land: .....
(Road,House,Pond,etc.)
4. Cropped area: ..... a. Amon(all): ..... b. Aus: .....
c. Boro: ..... d. Wheat: .....
e. Jute: ..... f. Sugercane: .....
g. Potato: ..... h. Pulses: .....
i. Spices: ..... j. Vegetables: .....
K. Fruits(all): .....

APPENDIX TABLE - XX
(Questionnaire - 2)
Questionnaire for selected market
Rural market survay

Date : .....

1. Name of the Market : .....
2. Location - a) Village : .....
   b) Mauza : .....
   c) Thana/District : .....
3. Establishment year of market : .....
4. Market association or adminstration of the Hat : .....
   a) Land owner of the hat (Private/Govt.) : .....
   b) Total area of the market (acre) : .....
   c) Number of the ezarader and sweeper : .....
   d) Taxes system of the hat (land rent/Govt. tax) : .....
   e) Foot path area of the market (sq.ft.) : .....
   f) Weekly schedule and market meeting day of the hat : .....
5. Duration of market - Morning / whole day / Evening.
6. Nature of market - Retail / Wholesale / Both.
7. Nature of accessibility of the market.
   Pacca road / Kucha road / Water way / Railway / Others.
   Infrastructural facilities of market size.

Electricity	Pond	Tube-well	Pacca drain	Pacca tin shade
.....	.....	.....	.....	.....

Foot path	Lavotory	Others
.....	.....	.....

9. Office and institutions -
   a) Education : Primary / Secondary / Higher Secondary / College/ Mad./ Others.
   b) Health : Hospital / Sanitation / Others.
   c) Finance : Bank / Co-operative / Others.
   d) Govt. office : P.S./ T&T / T.N.O.
10. Mills and factory : Rice Mill / Flour / Shaw / Ice / Oil / Confectionary / Others.
11. Godown : Food Godown / Fertilizer Godown / Others.
12. Reasons for selection of market site : a) Transportation - Road / Water / Others.
    b) Personal influence.
    c) Population pressure.
    d) Surplus production of the locality.
    e) Others.
13. Mode of goods transport : a) Water - Boat / Launch /Troller / Others.
    b) Road - On foot / Bicycle / Bus / Motor Car / Others.
14. Cultural facilities of the hat - Video hall / Cinema Hall / Auditorium / Football field .
15. Development Activities during last ten years : Nature of work / Starting year / Complete or incomplete / Expenditure / Surface of money .
16. Maintenance : a) Yearly market maintenance.
    b) Number of the hired labour for maintain.
    c) Number of the permanent porter during hat day.
17. Morphology of the market :

Contd---

a) Total number of permanent shop.....
b) Number of Open shop : on non-hat day.....
c) Number of each category of shop

Type of the shop	No.of permanent shop	No. of Temporary shop
1) Grocery/Monohari	----------	----------
2) Hotel /Restaurant /Sweet shop/ Confectionary / Boarding .	----------	----------
3) Rice Shop	----------	----------
4) Medicine / Homeopath / Doctor	----------	----------
5) Tailor / Garment / Lungi & Sari	----------	----------
6) Saloon or Barbar	----------	----------
7) Book shop	----------	----------
8) Laundry	----------	----------
9) Jewellary & Goldsmith	----------	----------
10) Blacksmith	----------	----------
11) Shoe shop	----------	----------
12) Construction Materials	----------	----------
13) Agricultural Input	----------	----------
14) Footware / Radio / Watch / Bicycle/ Misc./Repair / Agri. Implement / Optical.	----------	----------
15) Studio / Photo copy or Xerox.	----------	----------
16) Potterish.	----------	----------
17) Furniture / Electrical shop.	----------	----------
18) Stationery shop / Rope.	----------	----------
19) Fire wood / Fire materials.	----------	----------
20) Fish / Wood depot .	----------	----------
21) Printing press.	----------	----------
22) Others.	----------	----------
Total	----------	----------

18) Other facilities :
a) Residence b) Bus stand c) Big tree d) Reserve pond e) Embarkment

19) Remarks :

APPENDIX TABLE - XXI
(Questionnaire - 3)
Questionnnaire for traders
(Rural market survey for reserch)

Name of the observer : .....

Sample no :.....

1. Name of the interviewer : .....

   a. Age & Sex : ..... b. Religion : .....

   c. Residence(distance in markets.) : .....

2. Educational status : below SSC/HSC & Graduate/Post graduate & above : .....

3. Occupation : Agriculture/Agri. labour/Service/Business/Others(Mention orderly) : .....

4. Source of income - a) Major ; ..... b. Minor : .....

5. Yearly / Monthly / Weekly income : .....

6. How much capital invest in the shop : .....

7. How much sale per day, week or Month : .....

8. Profit per day, week, month, others : .....

9. Visit of others market per day, week, others : .....

10. Others works or occupation in the market (yes/no) : .....

11. Characteristics of seller & selling :

   A. Permanent sellers of markets :

   i) Types & catagory of seller -Retail / Wholesale / both.

   ii) Nature of seller - Marchant / Medium traders / Shop keepers

   iii) Parttime & Fulltime basis.

   iv) Nature of product (own product, own seller).

   B. Temporary seller of markets & out side area.

   i) Nature and names of goods sold (amount) : .....

   ii) Bought from other places or own product : .....

   iii) Distance from collecting place (Km.) : .....

   iv) Mode of transport - On foot/Bicycle/ Rickshaw/Bus/Train/Boat/Troller/Launch/Others.

   v) Transport cost of goods : .....

   vi) Time taken to reach market : .....

   vii) Seasonal or permanent trade : .....

12. Others : .....

APPENDIX TABLE - XXII
(Questionnaire - 4)
Questionnaire for buyers & purchasers (Rural market survey for Research)

Name of the observer : ..... Date .....

1.Sample number : .....

a) Age & Sex : ..... b) Religion : .....

c) Residence (Distance from the markets) : .....

2. Educational Status : Below SSC / HSC & Graduate / Post graduate & above : .....
3. Occupation : Agriculture / Agri. Labour / Service / Business / Others (Mention orderly) : .....
4. Source of income - a) Major : ..... b) Minor : .....
5. Frequency visit to this market (per week or month) : .....
6. Frequency visit to others market (per week or month) : .....
7. Characteristics of purchaesrs : .....
8. Types of buyers - Retail / Medium / Wholesale / Both / Others : .....
9. Nature of buyers - Traders / Consumers / Others .
10. Major Purchase - Food / Stationary / Medicine / Cloths / Others .
11. Mode of communications - Boat / Troller / Launch / On foot / Bicycle / Rickshaw / Bus /Train / Others .
12. Time taken to reach to market : .....
13. Transport cost per day : .....
14. Others : .....

APPENDIX TABLE - XXIII
(Questionnaire - 5)
Questionnaire for temorary shop

1. Name of the market : .....
2. Location - a) Mauza : ..... b) Thana (P.S.) : .....
3. Number of the purchasers in a day : .....
4. Number of temporary seller of each category : .....

a) Vegetables ..... b) Food ..... c) Livestock ..... d) Sari & Lungi .....

e) Cosmetic & Stationery ..... f) Cloth & Dress ..... g) Fruits .....

h) Furniture ..... i) Artesian or Handicraft ..... j) Traditional service.....

k) Processed Food ..... l) Fish & meat..... m) Books & paper.....

n) Spice & flavouring ..... o) Others .....

5. Major & assembling function in the hat : Administrative / Govt. Office / Bus stand / Vegetables / Fish / Others : .....
6. Yearly cultural (Major) function : .....
7. Others : .....