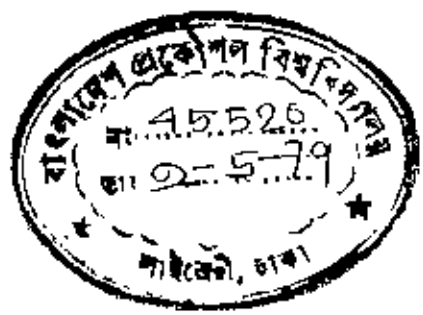
EAST PAKISTAN UNIVERSITY
OF
ENGINEERING & TECHNOLOGY

TRANSPORTATION ROUTES IN EAST PAKISTAN
&
THEIR IMPACT ON TRADE CENTRES

A THESIS
SUBMITTED TO THE DEPARTMENT OF PHYSICAL PLANNING
for the partial fulfilment of the Degree of
MASTER OF PHYSICAL PLANNING



BY
MD. SHAUKOT ALI KHAN
B.P.U.E.T., DACCA

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THESIS

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&
THEIR IMPACT ON TRADE CENTRES

BY

MD. SHAUKOT ALI KHAN

Approved as to style and contents by:

Chairman of Comittee — 19.2.72

Head of Department — 19.2.72

Member — 19.2.72.

Member — 19.2.72

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Dedicated to my brother-in-law, late
Mr. I. H. M. Zahurul Hoque Khan, who met
a premature death recently. I can not
bear upon my mind when I remember his
guidance and encouragements that provided
incentives for my higher studies.

Abstract

Transportation Routes and Trade Centres are functionally co-related and depend on each other. In this thesis an attempt has been made to find out this symbiotic relation-ship by studying different modes of Transportation system - their historical development, principal routes: nature, Direction, types, speed & service frequency, nature and volume of cargos and passengers traffic handled and their impact on Principal Trade Centres as well as on their hinterlands. Trade centres have been classified according to their ranks and sizes based on their functional efficiencies. Few centres have also been discussed as case study which reveals that Transport and Traffic Problems or demands are created by changes in land use, while potentialities for changes in land are also enhanced by transport connections and improvements. Accordingly, direction of Transportation Routes have been suggested on the basis of this study for effective Regional and Local Physical Planning.

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CHAPTER I

INTRODUCTION

East Pakistan, the breathing lung of the then Indo-Pak subcontinent, is endowed by nature with an admirable system of water communication. Since the earliest time, the foreign traders used to visit her sea-coasts. In course of time, Chittagong and the Sunder Bans, because of their unique situation, became the main attraction of the Maghs and the Arakanese pirates.

" ..... there were towns of considerable size in ancient and early medieval times, which served as centres of administration or seats of Pilgrimage or Commercial activity, because of suitable location and facilities of transport and communications. For example, the famous towns of Mahasthangarh, the ruins of which lie on the banks of the Karatoya river about seven miles north of Bogra, has also been indentified as the old city of Paundravardhana. It appears to have flourished from the early christian era till the Muslim conquest, Panchanagari in Dinajpur (A.D. 448), Paharpur or Somapura in Rajshahi (fifth century), Navavyavakasika (perhaps in Dacca) and samatata (South eastern part of East Bengal) rose into prominence .....Vikrampur of the Sena Kings in Dacca District, Mainamati near Comilla, and possibly Chatigrama (Chittagong), were centres of .....

.....

.....

..... commercial or religious centres as well as catering for industrial needs.[1]

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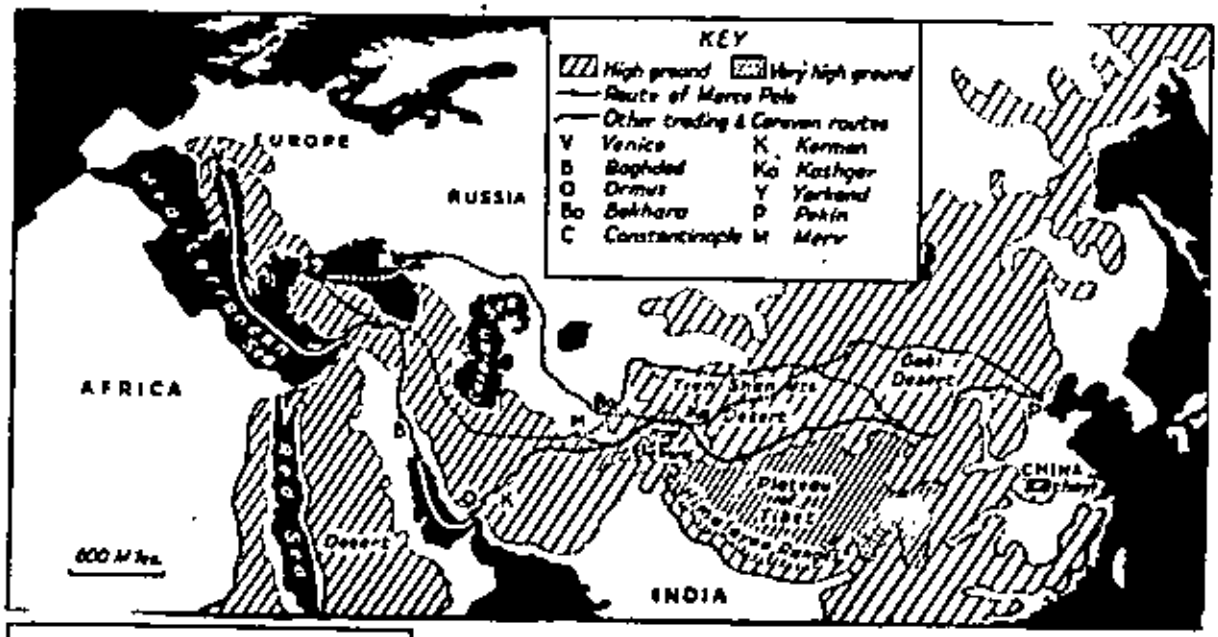
1 Ahmad, Nafis: " An Economic Geography of East Pakistan " Second Edition, Oxford University Press, 1968; p.74.

THE LAND WAYS OF THE MIDDLE AGES



CARAVAN

COURTESY ARTHUR S. YOUNG

GEORGE ALLEN AND UNWIN LTD.

MAP 1

A glimpse into history will make us believe that the construction of roads did not pose a problem to the country in the past. Life was then simple and people lived in self contained small communities. Men and commodities moved on the back of animals, bullock carts or country boats. In the process of evolution, man's needs and problems increased and the found it necessary to move longer distances.

Spaniards, Portuguese, Arabs and Chinese traders became interested to trade with the Orient through the important early sea routes from Indo-Pak subcontinent by way of the Persian Gulf, connecting with the Syrian Saddle route * at Bagdad (Map 1). * .....continuing his wonderful journey, H Suan took the road to Bengal, " a low damp country where grain grows abundantly," ..... He had travelled southwards along the east coast of the Gulf of Bengal and he returned by the west coast ..... whose merchants traded with Persia,...." [1]

The main attraction of European trade in the Orient were spices, Indigo, silk, tea, perfume, art objects, camphor wood, cotton and drugs.

"..... six years later the spaniard Balboa caught sight,..... who object it had been to reach spice Islands,..... He reached the Molucces. Man had succeeded in making the circuit of his planet." [2]

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1 Sykes, Percy: " A History of exploration; Chapter: Explorations of the Chinese Empire".p.I-5

2 Hopkins, Gerard: " The History of the World " (Translated from the French); P. 159.

* Syrian Saddle Route : From Merv(Mary) by way of Tehran, Bagdad, and Aleppo to Antioch(Antakaya). The route followed the foot hills from Bagdad east of the Tigris to the vicinity of Mosul, then westward accross the grassy steppe of northern Syria, and finally over the Beilan Pass (2400 ft.); ref; Rostlund, Erhard; " Out line of cultural geography". p.I-6.

It implies that the old traders of the Orient and the Indo-pak subcontinent in particular, have an invaluable impact on the trade centres of East Pakistan (Vide Map 1 A).

Historical Background:

Different people and culture have met and mingled since the earliest time in places of geographical centrality and cross road position of Near East.[1] Almost all of the major overland trade routes of their ancient world converge on the " Corridor lands " that link Asia, Africa and Europe. Large cities, in-habited by one lakh people or more and commercial ports had been built. The cross country routes, however, were only trackways; no real constructed roads between the cities. The river was the most common route of travel. Over seas colonies and trade centres were established. Maritime trade and all sorts of freight were carried for other people.[2] So, it is imperative to study overseas early trade routes of the Indo-Pak subcontinent which have an invaluable impact on the Trade centres of East Pakistan.

The Phoenicians built a large merchant fleet, and by about 1000 B.C. [3] became the leading sea traders of antiquity. The position of Phoenicia, near the terminal of the Syrian Saddle route [4], was favourable for trade.

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1 Where three arms of the world sea: the Mediterranean sea, the Red sea and the Persian Gulf penetrate.

2 Olive and wine exported and wheat imported; ref: Op. Cit.; Hopkins, Gerard, P.35.

3 Op. Cit.; Rostlund, Erhard; P.II-5.

4 Vide, P.3.

ROUTES TRAVELLED BY CHRISTIAN MISSIONERIES DURING 13TH. CENTURY

MAP 1B

" The ships of Tarshish (Spain) did sing of thee in thy markets, and thou wast made very glorious in the midst of the sea " [1] - (EZEKIEL, the Hebrew Prophet, who lived about 600 B.C. listed the products from Egypt, Western Mediterranean, Spain, Cyprus, Asiaminor, Arabia, Africa, Damascus, Syria, Yemen and South Arabia, that could be seen in the market of Tyre. From the river Volga to North Western China, Tracks of horse-drawn carts used by Mongol and other traders in the Middle Ages could be traced.

Trade between China, India, the Near East and Europe was occasionally interrupted but did not cease. Christian missionaries travelled amongst the Mongols in the 13th century. Not only mercantile goods but also cultural traits diffused by way of the trade routes between the East and the West. William Rubark, a Flemish Franciscan, visited Karakoram in 1254. Marcopolo, an Italian merchant, travelled overland to China through territory held by Arabs, Turks and Mongols in 1271 (Vide Map 1-8).[2]

The ancient land routes across Asia are still utilised by modern man. Krasnovodsk, Merv, Samarkand, Bukhara are linked by modern highways and railways, the modern railway follows the Syrian Saddle route; the truck road from Russia to China runs by way of the old Jade Gate*; Roads, Railways and Oil pipe lines make use of the Kura valley passage, as did the ancient Greek traders and so presumably will the new railway to be under construction.

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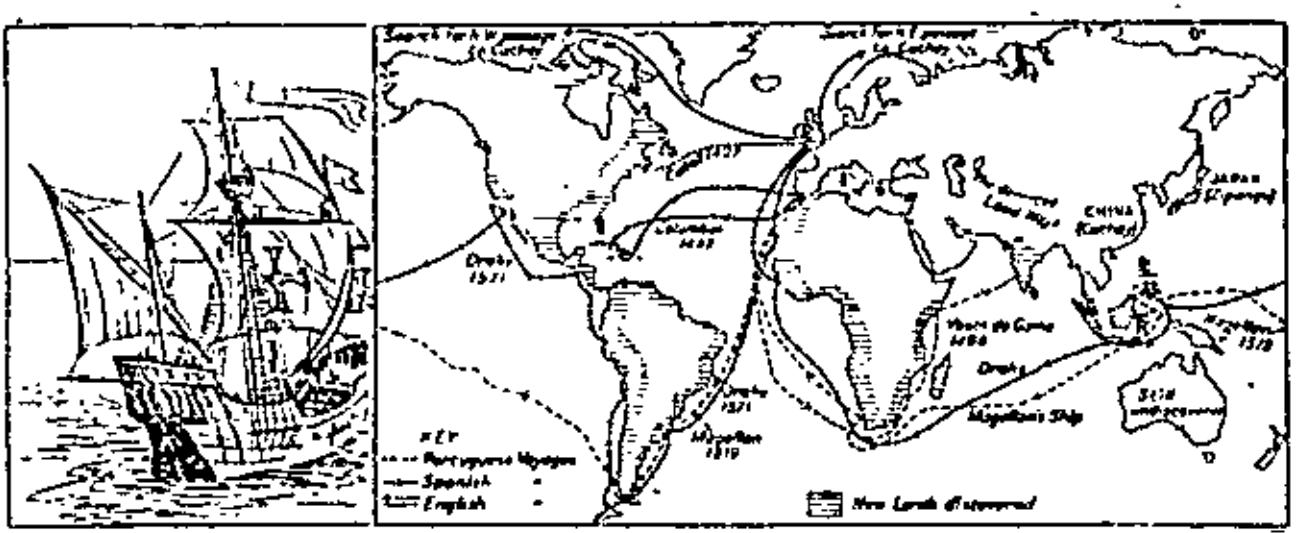
1 Ibid: Rostlund, Erhard; II-17.

2 "Marcopolo's book deals with countries outside his own route. He refers to Japan, the Islands of the East India and Northern Europe." - Baker, J.N.L; " A History of Geographical discovery and exploration (Middle Ages).

* " A frontier post guarding the corridor of yu-men-kuan, North of the Nanshan Mountains, leading into China from the North West." Op. Cit. Rostlund, Erhard; II-17.

THE SEA WAYS OF THE 16TH. CENTURY

(THE MODERN WORLD TAKES SHAPE)



COURTESY ARTHUR S. YOUNG

GEORGE ALLEN AND UNWIN

LTD.

MAP 2

Maritime Trade:

The century just before and after 1500 A. D. was a time of great development in shipbuilding, practical sea manship, and the technique of celestial navigation. Vascodagama reached India by way of the Cape of Goodhope in 1498 [1] and thus opened up the most desired Indo-European overseas trade route (Map 2). After 1500, the Portuguese established trading posts on the African Coast. Angola and Mozambique served as way stations on the route to the East Indies. Towards the end of the 16th century [2], Dutch exploration and trading voyages began and in 1600 A.D. Dutch East India Company was formed.

Role of European Traders since 16th century:

During the 16th and the 17th century, the European came to buy, for they had little to sell, naturally, Gold and Silver from the European mine rushed into the Orient.

During the 18th and the 19th century, after the industrial revolution, the colonies became the source of raw material for the European industries and markets for the manufactured goods (Map 3). They made treaty with the Orient rulers for holding trading posts, gradually expanded and became colonial ruler [3].

The result of transportation routes was not only a new way of life but a new cultural landscape. More than ever before, the vegetation cover was opened up, trade centres developed, settlements became larger and characterised by more specialised buildings. Old trails and footpaths became more like true roads, wider and more firmly packed down because of more people from different parts of the world, who brought their own culture, these centres gradually developed, preserved and transmitted culture of high order.

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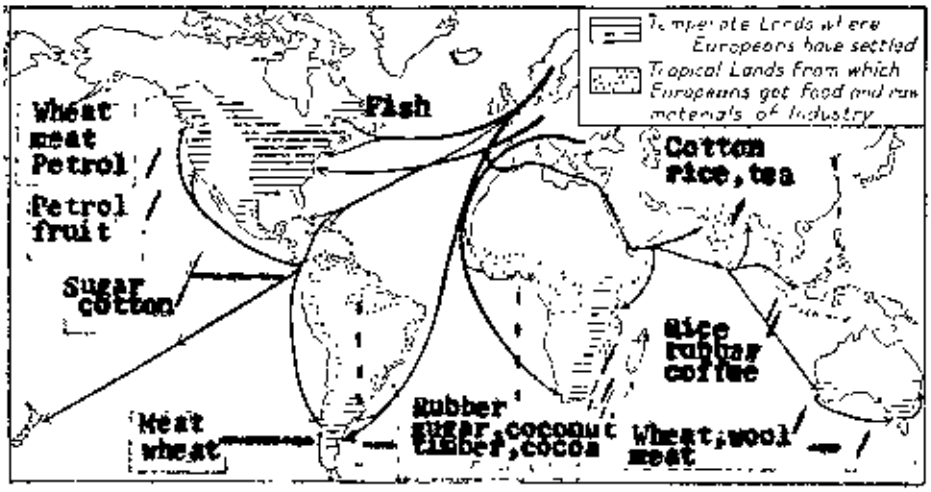
1 Ibid: p.3.

2 Op.Cit.: Hopkins ,Gerard; p.155-160.

3 Ibid: p.158

EMIGRATION AND TRADE IN THE 19TH CENTURY



COURTESY ARTHUR S. YOUNG

GEORGE ALLEN AND UNWIN

LTD.

MAP 3

Plants from the New World were introduced not only in Europe but also to Africa, Australia, and the Orient. Smuggling of rubber seed from Brazil to Ceylon made the tropics rich in rubber resource.

Karachi, Calcutta, Bombay, Chittagong, Singapore, Hongkong, Bangkok and other cities in the orient became largely Europeanised. People in Africa and Asia adopted European clothing, christian religion, and other western ideas— industrialisation, political democracy, nationalism. Many European traits spread to the colonies in the old world: railways, steamships, metallurgy such as iron works and steel mills; mining was intensified, telephone and telegraph lines were stretched across the landscape, and street car tracks were laid in the cities.

C H A P T E R II

DEVELOPMENT OF EARLY TRADE CENTRES

CHAPTER II

DEVELOPMENT OF EARLY TRADE CENTRES

Trade and commerce originated out of the need for the exchange of surplus commodities between two individuals. Trading man soon develops so many wants that it becomes inconvenient to visit individually the various people with whom he wished to trade and some collecting and distributing centres or trade centres develop in some common meeting places.

The term 'Trade Centre' can best be defined as the "collecting and distributing centre which serves its hinterland from which is obtained the major portion of the continuing patronage necessary for steady support of it".

The normal trading centre is, therefore, manifestly and most naturally located in some spot easy of access, some spot with a superiority of access usually due to geographic cause becomes a city with international trade. Some advantage in transportation is the most fundamental and most important of the causes determining the location of a trading centre.

In his Ain-i-Akbari, Abul Fazal mentioned the excellent locationof the port of Chittagong [1] where christian and other merchants visited frequently and became the most important port of Bengal because of its navigational facilities close to the mouth of the mighty Meghna estuary, and easy access to the riches of East Bengal . Its fame even inspired the Portuguese to praise it in epic poetry [2].

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1 Ain-i-Akbari, Vol.II, p. 125.

2 Camoens: the Lusiads, Trans. Atkinson(Penguine Books,1952); p.242.

The environs of Dacca, in the heart of East Bengal, were the source of much of this trade. During the 6th century, Sripur (North of Dacca) and Chittagong became the most important trade centres because of favourable geographical locations with respect to land and sea communication.[1] Narayenganj became an important inland commercial centres at the beginning of the 19th century.

During British rule, Kumarkhali, Boalia, Madhunagar and Rangpur became the important silk collecting centres. Calcutta developed as the main gate way of East Bengal's commerce with the rest of the world.

Transport was mainly by river for large amounts of goods. The wheeled cart traffic was scanty, owing to the bad state of country roads and also for the large number of unbridged watercourses which intersected the country side.

The great bulk of rural trade was in agricultural produce. The cultivators and the village artisans used to go to the rural markets called 'Hats'where they made their sales and obtained their own requirements.

Apart from hats, there were many permanent rural trade centres called Bazar and Ganj, especially, concerned with local collecting activities. Their locations were usually determined by geographic advantages, more particularly, transport facilities and local productivity.

In most cases, especially, with isolated centres in rural areas, the urban population was merely congregated in Ramshackle Structures with poor sanitation and an almost total lack of modern amenities. There were a few prosperous traders whose shops lined the streets, and merchants own ware houses on the river front or near rail or road points.

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1 Jadunath Sarkar:"Industries of Moghal India: Seventh century, Mod. Rev., Calcutta, Vol. XXII, No. 6, 1922" , p. 675.

Most of the centres had the inevitable river front which was a busy scene of transport and trade. Such places had their roots in the rural surroundings in which they seemed to lie immersed and they had little contact with the outside world. They used to handle local trade, served as collecting and distributing centres and provided commercial contacts between the rural community and the neighbouring area.

Muktagacha (Mymensingh); Habiganj and Maulavi Bazar(Sylhet); Rajbari(Faridpur); Kurigram(Rangpur); Patuakhali and Perojpur(Barisal); Naogaon(Rajshahi); Satkhira and Dagerhat(Khulna); Jhenida and Kaliganj (Jessore) and many such towns are also survivals from the past were rural in out look and there were very little that was new about them till last decade, when the advancement of road development has exerted tremendous impact on most of these centres to change into a modernity.

Role of Transportation:

With the expansion of transportation facilities jute collecting trade, in the last sixty or seventy years, got its momentum and that led to the development of many trade centres of urban character around which many other distributive and market facilities have grown up. In this category mention must be made of such centres as: Bhairab Bazar, Kishorganj, Netrakona, Jamalpur, Bajitpur(Mymensingh); Munshiganj and Narsingdi(Dacca); Madaripur(Faridpur); Brahmanbaria and Chandpur(Comilla); and Gaibandha, Dimar and Phulchari(Rangpur).

Due to lack of communications, isolation and river erosion some trade centres such as Dimar(Rangpur); Natore(Rajshahi);Sherpur(Bogra); Ectchandpur and Habeshpur(Jessore); Meherpur and Kumarkhali(Kushtia); Dagerhat(Khulna) and Gauripur(Mymensingh), that lost their importance and utilities during the last eighty years show gradual increase due to the development of transportation routes during the last decades.

Severals towns have excellent communication advantages through river, rail or road transport and thereby have acquired other important functions some of them are Comilla, Chandpur, Khulatpur(Khulna), Noapara(Jessore) and the like. Parbatipur, Saidpur, Lalmanirhat, Sirajganj, Santahar, Ishurdi, Chandpur, Barisal, Jhalakati and Shairab Bazar remain primarily notable as communication centres.

On and around 1900 A.D., Cox's Bazar was only a port for carrying on coasting trade. With the opening of new road it became a tourist resort of the province. Khila, merely a port for the shipment of rice lost its importance due to lack of surface transportation. However, the opening of Cox's Bazar - Teknaf road accelerates its trade in lumbering and fishing. Teknaf, few miles south of Khila can be expected to be the finest tourist resorts in the province because of its scenic beauty where the Arakan Hill on the east of the Naf estuary, the sea and the beautiful undulating land meet.

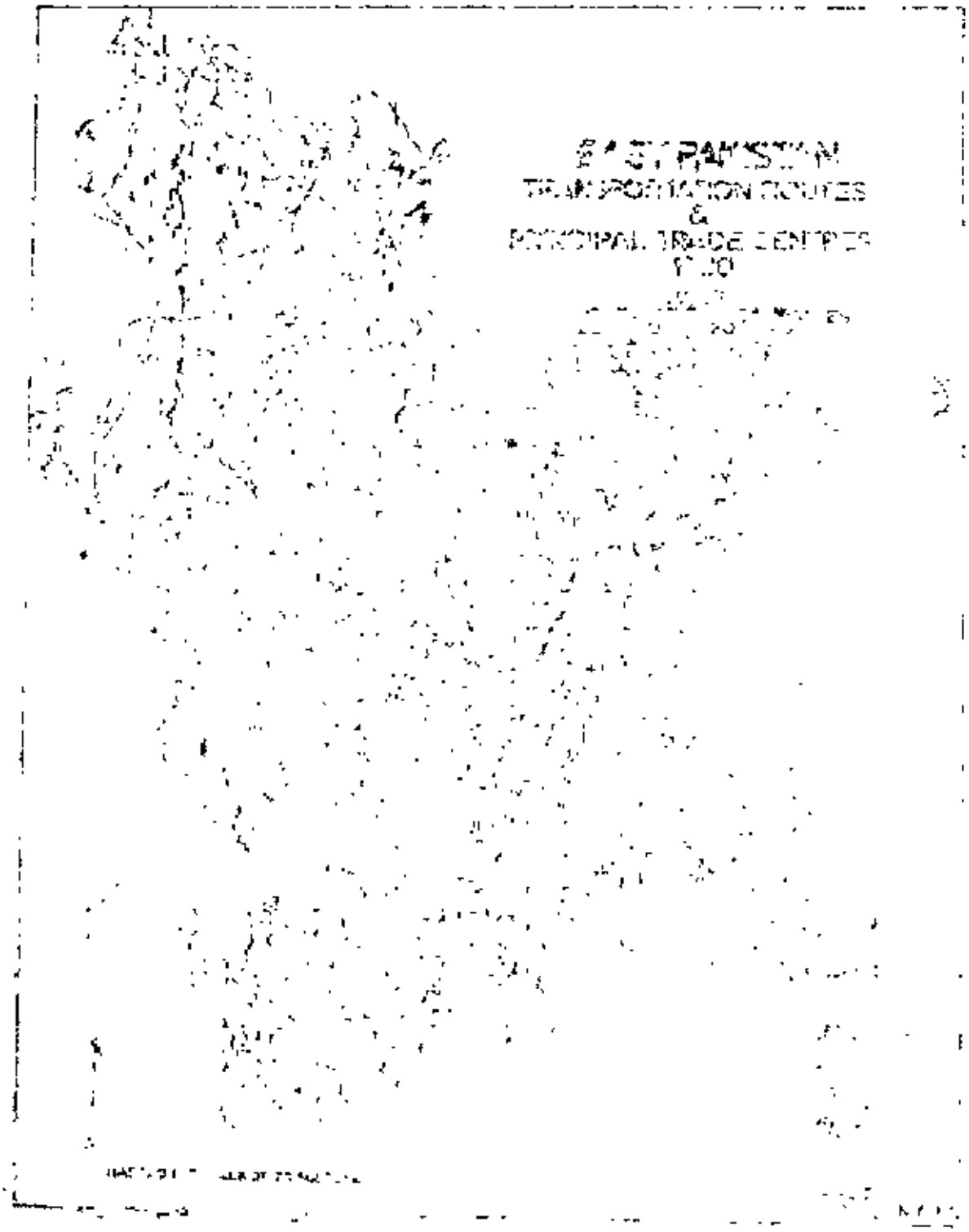
With the development of the Assam-Bengal railway, the coasting trade began to decrease but the provision of better facilities for communication from Dacca and Mymensingh to Chittagong, the trade in jute through this port developed greatly.

Nazirhat on the Halda; town markets on the Chaktai Creek; Feang's Hat on the Sangu; Satkania on the Bolu; Cox's Bazar; Teknaf on the Naf; Rumkha(Rungya)hat on the Bam; Mahajans hat near the Feny; Hat Hazari; Kumira, Narayanhat, Bibishat and Raojan; Rozjan hat near the Karnafuli received trade by boats from the country along the Meghna.

There were large markets at several places on the rivers and canals in Patiya and Satkania Thanas and less important ones in the more backward subdivision of Cox's Bazar.

REFERENCE TO MAP A

1. Titalya
2. Meerpur
3. Mohabganj
4. Roopganj
5. Gorya
6. Kalpanny
7. Jarbarry
8. Peeranganj
9. Roopganj
10. Sadikganj
11. Sangunga
12. Gaga
13. Barraly
14. Jafarganga
15. Cochuned
16. Dinajepour
17. Mowglebat
18. Paradanga
19. Deemhatta
20. Chapour
21. Jatalganga
22. Goragot
23. Surygunj
24. Gobindganga
25. Sibganga
26. Baddoul
27. Chilmary
28. Burchang
29. Talaganga
30. Suripour
31. Sarambari
32. Baridara
33. Sripur
34. Nogang
35. Mishanpur
36. Gamartapur
37. Mahabganga
38. Purmantagar
39. Betna
40. Nattore
41. Bagura
42. Sherpur
43. Durgapour
44. Perrangunga
45. Bakirapur
46. Dyganbary
47. Moddergunga
48. Sunglebary
49. Ramgunga
50. Jagannathpour
51. Digley
52. Silhet
53. Aurungpour
54. Parpour
55. Candigura
56. Sunamchung
57. Rajetpour
58. Agarasindh
59. Rajaura
60. Sunaramgpour
61. Rajura
62. Kodalia
63. Deetpour
64. Noornagar
65. Mirjapour
66. Dandkandi
67. Firigi Bazar
68. Maranpour
69. Sutrerganj
70. Chandpur
71. Noorpour
72. Humabad
73. Kalapara
74. Peelapara
75. Sabzar
76. Pucculo
77. Burryal
78. Ronanpour
79. Pactya
80. Dulesh
81. Custee
82. Orinacora
83. Kuldingah
84. Jennidah
85. Meishpour
86. Nagroh
87. Gajaura
88. Jingergacha
89. Muhammadpur
90. Boosna
91. Kolokopa
92. Sonapara
93. Champour
94. Hakimpour
95. Noorley
96. Chandpani
97. Caspour
98. Luckypour
99. Chingarikali
100. Jessore
101. Dadpour
102. Rajapour
103. Masudpour
104. Habibganga
105. Rajabari
106. Contakpour
107. Serampour
108. Doyeally
109. Subatory
110. Backergunga
111. Rampoli
112. Sadpour
113. Sonakanda
114. Mirjaganga
115. Sonasheeta
116. Dulloah
117. Chandergunga
118. Gaura
119. Luckipour
120. Hajiganga
121. Narsingpour
122. Comilla
123. Manikganga
124. Mahanagar
125. Pagar
126. Lasbad
127. Rangunya
128. Chatigaon
129. Bhanga


EAST PAKISTAN
TRANSPORTATION ROUTES
&
PRINCIPAL TRADE CENTRES

In addition to Narayanganj and Dacca, there were many large marts on the waterways throughout Dacca District, of which Jagirhat on the Dhaleswari; Baidya Bazar, Baraingdi, Manshirhat on the Meghna; and Lohajan on the Padma need mentioning.

The Calcutta-Narayanganj trade route was diverted to Sirajganj and Goalundo with the extension of railway to Jagannathganj. The large trade centres mark the lines of water communication are Jamalpur, Saltia, Sotta's Bazar, Nasirabad, Bhairab Bazar. Large quantities of jute were collected in Katiadi, Kariaganj, Kishorganj and Nalganj in the District of Mymensingh, and were sent to the press at Narayanganj via Lakhya and Meghna. Mohanganj and Dhuldia were the large fish markets in the east and south-east of Mymensingh and in the north of it were Nalnaghat, at the foot of the Garo Hills, where the hillmen used to bring in their merchandise. (Map 4).

The Assam Bengal Railway used to carry the bulk of the traffic in the east of the Comilla district, but in the west the rivers were still largely used. Chandpur, Matlab Bazar on the Meghna; Bajiganj, Chitosi, Doulatganj and Baghmara on the Dakatia; Comilla, Gouripur, Lalpur, Jafarganj, Companyganj, and Panchpukuria on the Gumti; and Chanduria, Brahmanbaria, Akhaura, and Ramchandrapur on the Titas were the important trading centres in the district of Comilla.

The largest mart in Sylhet district was at Balaganj on the Kusiara. Other important places were Chhatak(a big trade centre famous for lime and other trade); Habiganj, Sunamganj, Ajmiriganj, which are conveniently situated on both the river and the railway. Sylhet Town was still the largest place, but its importance declined steadily, as the bed of the river has silted up and steamers were no longer able to go so far in dry season. While it was far removed both from the principal centres of the tea industries and from the railway. After partition, with the

development of railway and road transportation system new centres like Chhatak, Panchuganj emerged and Sylhet got a momentum for rapid development (Map 6). In addition to these established marts, there were a large number of bi-weekly markets at which the villages disposed of a great deal of their produce.

Sundarban, Chandraghona, Bankiang, Rangamati, Sublong, Barakal, Mahalchari and Ajadhya were the principal trade centres. The development of roads and high ways exhert tremendous impact for the development of Rangamati, Kaptai and Chandraghona into New Townships around 1961 [1].

The main trade route of the southern Bengal being through the Sundarbans to Calcutta, the chief trade centres were Jhalakati and Nalchiti on the main steamer route to Calcutta, Daulatkhan, Shahibganj, rice was the main export from Bagu, Bauphal, Nilmati, Bhandaria, Kaukhali, Kalaia, Chanlakati, Charamaddi and Bhuria.

Improvement in transportation during the last decade led to the development of Bhola(Barisal); Mangla(Khulna); Bagerhat, Satkhira(Khulna); Kotchandpur, Magura, Jhenida, Kaliganj in Jessore district; Chuadanga, Alamdanga(Kushtia) into township. Tremendous development of Khulna during this period is, primarily for its unique location accessible to its hinter land by improved rail, road and water communications. It is the road and rail head where the cargoes discharged by Mangla port are transhipped for overland transportation by roads and railways.

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1 Op.Cit.; Ahmad, Nafis; p. 315.

The Calcutta Trade of Faridpur district was carried by the Eastern Bengal State Railway, by country boats via Khulna, or by the Steamer Services. Goalando, the terminus of the railway and of several important steamer routes, is a focus through which an enormous volume of trade passes. Madaripur, is growing in importance. Other important trade centres are Faridpur, Pangsa, Balgachi, Rajbari and Pachuria on the railway. Sadarpur on the banks of the Khobadeswari; Jessalpur, Madhukhali, and Kumarkhali on the Chandra. Saiyidpur and Boalmari on the Jessore road; Kanaipur, Jaynagar, and Bhanga on the Kumar; Gopalganj, Bhatiapara, and Patghati on the Madhumati; Palang on the palang; and Mulfatganj inland. New township at Rajbari and Gopalganj developed due to the tremendous impact of transportation facilities.

The most important trade centres in Pabna districts are Pabna Town, Sirajganj, Bera, Ullapara on the Hurasagara, Dhapari on the Padma, and Pangai on the Ichamati. New township at Ishurdi, can best be called as the transportation centre because of the tremendous impact of railway that is responsible for its development. Ullapara, because of its unique rail, road and water communications gains the potentiality for the development of modern inland riverport.[1]

The principal trade centres in Rajshahi district were Sultanganj, Godagari, Rampur-Boalia, and Gurudaspur on the Baral; Baliganj on one of the feeder of Chalantbil, Prasadpur on the Atrai, and Naogaon on the Jamuna. At Lakshman hati an extensive business was done in the sale and hire of sugarcane mills and evaporating pans. With the development of railway and road transportation system new township at Santahar emerged and the trade centre, Naogaon got tremendous momentum for its development as an urban centre.

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1 Shahjadpur port Engineering and economic feasibility study have been completed on October'1970. The port will be named as Shahjadpur, Ref: Shahjadpur port, Pabna Districts, Engineering and Economic Feasibility Study, EPIWTA, Common Wealth Transportation Consultants, Inc. Pakistan Techno-Consult Ltd.

Hilli, on the main line of railway, is an important centre for the export of rice and jute; a large quantity of produce is also conveyed by the newly opened branch line from Santahar to Phulchari, which passes through the marts at Alaudighi, Sukhanpukur, and Sonatola. Other marts for rice are Dupchanchia and Burigonj on the Nagar river, Sultangonj on the Karatoya, and for jute Shariakandi, Noakhila, Gosainbari, and Bhuapt. The jute is conveyed by boats along the numerous water channels which intersect this part of the District and converge on Sirajganj, where it is baled for export. Sherpur is the trade centre that shows a gradual development towards urbanity due to the impact of surface transportation.

Trade, in the District of Rangpur and Dinajpur, was entirely carried by rail. Domar, Parbatipur, Saidpur, and Rangpur town were important trade centres. Kurigram, Gaibandha and Saidpur show tremendous development since 1901 and it is due to the development of railway system. Saidpur, has rightly,been termed by Prof. Ahmad as the communication centre because its origin and development owes to the development of railway[1]. Parbatipur, Lalmanirhat and Thakurgaon rose to the status of urban centre due to the tremendous development of road networks of the last decade.

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1 Op.Cit. ; Ahmad, Nafis; p.321.

CHAPTER III

WATER TRANSPORT

CHAPTER LII

WATER TRANSPORT

East Pakistan, the land of rivers, comprising an area of about 55,128 square miles, is a low tropical plain endowed by nature with an admirable system of water communication. Since the earliest time, the rivers and the land with their tributaries and distributaries, have carved the way of life of the people, guided the commerce and transportation of commodities and the trade of the region. The cities, towns and market places emerged on the river banks(Map 5).

The Physical features of the Province is, particularly, favourable for water transport. General flood conditions and the large rivers hamper land transports. The Highways, and Railways are usually fragmented, specially, the partings of the Province, into two halves by the Brahmaputra river, is the greatest barrier for such development. On the other hand, almost, any place in the province is accessible through the rivers but they, mostly, influence the north-south direction of flow of commodities avoiding the East-West movement which is also desirable.

Early Routes:

A very complete steamer service used to ply upon the numerous waterways. Calcutta- Assam Service through the Sundarbans via, Barisal, Chandpur, and Narayanganj; a daily service from Goalundo to Narayanganj

connected Dacca with Calcutta, while mail steamers to Chandpur linked the Assam Bengal Railway with the Eastern Bengal State Railway.[1] Daily service from Khulna to Barisal, Bakhali, Narayanganj, Madaripur and other places need mentioning.

The Ganges:

The Ganges (Padma) in Bengal ranks as one of the most frequented waterways in the world on which steamers used to ply between Damukdiaghat and Kumar-Koalia (Rajshahi) and Godagari with a continuation to English Bazar (Malda) and between English Bazar and Sultanganj. The active down ward traffic in the rainy season and the returning upward, usually, empty boats, either helped by a favourable wind or laboriously towed along the banks are the striking scene of the rest of the year. Opening of the railway did not hamper the native crafts which used to carry jute, food grains and oil seeds — the most important traffic in Bengal. Instead of being rival to each other they became the feeder to the railway. Trade centres emerged in such favourable places where rail-water meet. Goalundo, for example, initially a fishing village[2] grew to the status of river marts of the first magnitude; became the terminus of a great rail-steamer traffic to command the water transport through the Padma, Meghna and Jamuna.

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1 East Bengal and Assam Gazetter (1901); p.357.

2 Ibid; p. 164.

The Brahmaputra (Jamuna):

The Brahmaputra(Jamuna) is navigable by steamers as far as 800 miles from the sea. Its lower reach is flanked with the sailing country crafts of all sizes, where a daily steamer service used to ply from Goalundo to Phulchari. Cargo and Passenger steamers sailed for about 108 [1] hours to reach Dibrugarh (Assam) from Goalundo. Large cargo vessels carried jute, oil seeds, rice, tobacco and other food grains to Assam and tea, coal, oilseeds, timber, hides, lac and raw cotton on their return journey to East Bengal.

Jamuna, now the main channel, extends from Ghoramara in Rangpur to the river mart of Goalundo at the confluence of the Ganga-Jamuna. Although, a modern creation, it serves as an important administrative boundary along the left bank of which stretches the district of Mymensingh; Rangpur, Bogra and Pabna of Rajshahi Division lie on the west.

The Jamuna is navigable at all seasons of the year, throughout its entire length. Sirajganj, a great emporium for jute and other agricultural produce, stands on its right bank. Kharkamukh, Ruhumari, Chilmari, Phulchari, Jagannathganj and E'lasin are some of the important trade centres located on the bank of the Jamuna.

Present position of water transportation to an into Rajshahi Division is very limited due to the shifting of channels in the Jamuna and the difficulty of establishing docking facilities in the flood season; owing to insufficient depth of many rivers that limit the role for motorised carriers in the dry season. The division is, now, served by innumerable country boats, of which over 300,000 [2] carried over six million tons of cargo in 1959-60. Quite apart from the questions of comparative cost, water tra-

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1 Op.Cit.; EBAC, p.171

2 Highway Economic and Engineering Feasibility Study; Harris-Bentsell(Consulting Engineers, New York, Dacca, Karachi) Rajshahi Division Vol. 1-A (Rajshahi-Phulcharighat Road) Sept.1963, p.II 44.

nsport is not an effective alternative route to highway transport on the major highway. Motorised water transport is confined to the main rivers along the Eastern and Southern boundaries of the Division and is limited for the reason just stated. The country boats function in place of the secondary feeder road and carry a large volume of traffic during the rainy season.

Surma-Kusyara:

During the rains, a daily steamer service from Calcutta up the Kusiyara into Cachar (Assam) was operated by the River Steam Navigation Company.[1] Small steamers also plied from Karimganj to Langaighat up the Manu to Chatlapur, along the Doloi to Kurma and from Markhali to Sylhet town via Sunamganj and Chhatak. During the dry season, the route was restricted, for long steamers, up to Chhatak.

Important Link Canals:

Jute, rice and oil seeds of East and North Bengal, the tea of Assam and Cachar, and the jungle produce of the Sundarbans poured into Calcutta, while they also carried the export of salt, piece goods and kerosene oil from Calcutta to its hinterland. Owing to tremendous flow of commodities one of the most important canal system in the world, that extends eastward over a total length of 1,127 miles, through Twenty Four Parganas, Khulna, Barisal, and Faridpur of which, specially, 47 miles became congested.[2] Out of the need to tap the trade of the Brahmaputra Valley, to focus the rich traffic of the Eastern districts,

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1 Op.Cit.; EBAG (1901), p. 9

2 " This 47 miles link canal, including ' Tolly's Nullah,' are man made. Op.Cit., EBAG (1901), p.194.

T A B L E -1 WATER

STATION TO STATION MOVEMENT OF/BOURN TRAFFIC

Passenger or cargo?
If Cargo the measure?

Station to from	Barisal	Chalna	Chandpur	Chandragona	Chhatak	Chittagong	Dacca	Daulat-pur	Khulna	Khalish-pur	Fatu-llah	Ood-nail	Pagla	Nara-yan-gong	Others	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Barisal	-	1	168	-	86	4	328	3	320	-	-	-	-	18	193	1121
Chalna	5135	-	13059	-	2585	2	13839	52872	372498	2211	-	-	-	12150	18456	492807
Chandpur	139	19515	-	-	-	138	17	167	1438	-	-	-	-	2056	3653	27123
Chandragona	-	-	-	-	-	29363	-	-	-	-	-	-	-	-	-	29363
Chhatak	439	2010	-	-	-	-	24669	15665	1301	-	-	-	-	60792	15801	120658
Chittagong	25290	1657	38936	129581	-	-	206737	140970	66569	-	4500	116862	-	118660	55798	905503
Dacca	185	5137	474	-	-	4983	-	534	2590	-	-	-	-	519	3079	17501
Daulatpur	3213	242670	753	-	-	7124	4150	-	200	-	-	-	-	2915	407	261232
Khulna	1208	67920	1801	-	-	8036	2412	2614	-	730	-	-	-	3688	4317	92586
Khalishpur	-	85078	-	-	-	-	-	-	-	-	-	-	-	at BOJ	-	85078
Narayanganj	841	371849	3037	-	-	29627	163	956	3399	-	-	-		3259	5149	418280
Others	894	16071	6430	-	1908*	66490	2930	2372	3596	43314	-	112	699	5508	4199	154327
TOTAL	37269	811708	64718	129581	4579	145767	255245	215953	451711	46255	4500	116974	699	209565	111052	2605576

Total Traffic handled by 14 Stations = 95.80 percent

Total Traffic handled by Station Class others = 4.20 percent

*Include traffic from outer anchorage to Chittagong by Coasters.

Source: IWTA; Annual Traffic Report: 1967-68. p. 20.

and with an objective to relieve pressure on " TOLLEY'S NULLAH"[1], a new route was opened between Calcutta and the Jamuna river.

Barisal, the headquarters of the ' granary ' of Bengal, situated at 187 miles east of Calcutta, was the prime objective of the main steamer route through the Sundarbans via Sibsa River and Diamond Harbour [2].

Three alternative routes:[3]

1) Along the Bangar Canal and Sibsa river to Khulna, and thence by the Bhairab river to Pirojpur and Barisal.

2) An alternative route between Calcutta and Kaliganj on the Ichamati river (Outer route).

3) Two similar alternative routes branch off southward in Khulna district.

Madaripur Bil Route:

It is a link between Calcutta and Dacca via Chalna, Madhumati river, Gopalganj, Madaripur and Narayanganj, and is very important for jute trade.[4] It connects the Kumar and Madhumati rivers. Gopalganj Bil*,

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1. Ibid., p.194.
2 Op.Cit., Ahmad, Nafis; p.251.
3 Op.Cit., EDAG (1901) p.195.
4 Ibid., p.194.
* Bil, a large depression.

which is nearly dry for a large part of the year but provides a passage between Faridpur and Khulna during the rainy season, lies between these rivers. Jute laden steamers ply during the rains. Its length being about 40 miles, shortens the journey between the river port at Khulna and Madaripur by 69 miles. Dredging of the route for deepening and widening started in 1900 [1] to allow steamers and flats drawing 6 feet of water to ply along the route during the jute season. Later it was improved for all weather navigation.

Mangla-Ghashiakhali Canal:

The Mangla-Ghashiakhali Canal now being provided, reduce the distance between Dacca/Narayanganj - Khulna by 30 miles with a saving of Rs. 12.38 million [2] to the shippers and/or importers of goods. Constant maintenance dredging are also being made by INTA for keeping proper depth of the channel.

Chittagong, Dacca, Narayanganj and Chalna are the important centres which form a triangular zone of'Inland Water Borne Traffic'. During the period of 1967-68, about 95.80 percent of the total traffic, operated mostly by INT mechanised flead, was handled by only 14 stations, while only 4.20 percent was accounted for stations classed under 'Others'. The Table No.1 also reveals that the rate of out flows from these stations[3] are much higher than that of the inflows. This is because they are either inland or seaport

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1 Ibid., p.194.

2 Source: INTA: Inland Water Transport Authority, an autonomous body was established in 1958. Under its charter it performs various functions relating to the development and control of inland water transport in East Pakistan.

3 Some of the important (Stations) centres are:
Dacca, Narayanganj,Khulna,Daulatpur,Chalna and Chittagong.

centres importing goods for distribution within their hinterlands or industrial centres from where manufactured goods are marketed for domestic consumptions.

The Khulna - Barisal Steamer Route was opened as far back as 1884[1]. Steamers have been using the north-south rivers of Barisal since 1880, but a few east-west* links are also maintained. Khulna is, now, connected with Narayanganj via Barisal and Chandpur, a distance of about 241 miles, in which one modern steamer(ROCKET) service plies four times weekly. It takes about 19 hours 30 minutes; the cost of third class travel being Rs. 10.06 paisa only. Narayanganj - Barisal (121 miles) travel takes about 10-30 hours by daily steamer services. Barisal is again connected with Khulna (120 miles) by a daily steamer service.[2]

Khulna - Barisal and Khulna - Madaripur steamer services used to touch at Jusa and Kalia in Jessore district. Besides Jaypara - Khulna, Khulna - Madaripur, Khulna - Bhatiapara and Khulna - Lohagara[3] were the principal transportation arteries of the region. In Jessore and Kushtia, river deterioration has considerably minimised the value of water transport; only the Madhumati-Garai was open to steamers of some size, through about 1920-21,[4] the lower courses of such rivers as Chitra, Mabagangā, Kobadak and Bhairab etc., are now open to launch services.

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1 Op.Cit., Ahmad, Hafiz; p.253.

* Vide; Important Canal Links, p.11-15.

2 Vide; Appendix 1.

3 District Census Report, Jessore,1961,p.I-12.

4 District Gazetteers, Jessore, Calcutta,1912, p.109.

Barisal and Patuakhali districts are well served by steamers, and during the rains small feeder crafts ply on the tributaries of the Barak and Brahmaputra. The drains along the side of many of the roads are used as water ways.

Jhalakati is the largest centre of inland trade in this area. Madaripur, in south-eastern Faridpur, has connections with Barisal, Narayanganj via Nandi Bazar, with Khulna via Gopalganj and with Goalundo via Tarpasa.

Water communications in Dacca district is maintained by a network of channels between large rivers. The Padma is connected with the Dhaleswari by Hilsamari, Ichamati, Taltola* and Srinagar* khals. The Meghna is similarly connected with the old Brahmaputra by the Arial Khan and Nandi Khali. Numerous other boat routes tap marts in the interior, and, indeed, in the rainy season there are few areas of the district inaccessible to water traffic.

Narayanganj, occupies an excellent situation on the lower Sitalakhya, and, through the Dhaleswari, is connected with the Meghna — " where even in the winter season the native boatman fears to continue his voyage after night fall"[1]. This gives it steamer route connections with Dacca, Goalundo, Chandpur, Madaripur, Bhairab Bazar, Sylhet, Fenchuganj, Barisal, Khulna, Chalna and Chittagong. Narayanganj - Goalundo mail runs daily for about 15-30 hours to cover a distance of about 132 miles[2] via Chandpur. The cost of travel by third class journey being Rs. 4 and paisa 46 only.

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* Navigable by large boats only in the rains.

1 Op.Cit., EBAG (1901), p.176.

2 Vide;Appendix I.

Dacca itself is well located for water communication through the navigable Buriganga. It is seven to eight hours journey from Goalundo, seven hours from Bhairab Bazar. Dacca - Khulna modern vessel service(4 times weekly) takes about 19.30 hours to cover a distance of about 257 miles[1].

Chandpur, close to the junction of the Meghna and Padma, is an out let for jute and other products of Comilla district. The Assam Steamers used to call at Chandpur, and the railway steamers plied thence to Goalundo[2]; now Narayanganj - Goalundo mail connects the two important partings of railway terminals at Chandpur and Goalundo by a regular service of about eleven hours to cover a distance of about 95 miles[3] .

During the rains most of the traffic in Noakhali district flows through the artificial channels along the principal roads. Bhawaniganj and Sudharam are connected by a regular service. Important ferries connect the island of Sandwip and Hatya with the mainland and cross the Fenny and Little Fenny rivers on the Chittagong - Dacca road.

An alternate day coastal service[4] plies between Narayanganj and Chittagong via Barisal which takes about 9-30 hours to cover a distance of about 203 miles[5]. This service serves the coastal islands of Sandwip, Hatya

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1 Ibid.

2 Op.Cit., EBAG (1901), p. 268.

3 Vide; Appendix 1.

4 Coastal Passanger service were formerly maintained by M/s. PSN Co. Ltd., who suspended their operation in 1963-64 when the East Pakistan Shipping Corporation took the responsibility.

5 Vide; Appendix 1.

Rangati, Daulatkhan and Ilishaghat and Thence to Barisal, Chandpur and Narayanganj. South of the Karnaphuli, the traffic is carried almost entirely by water, the main rivers being connected by north and south cross-channels. By the water ways inland communications can be had at all seasons from Chittagong[1] southwards to Cox's Bazar. Another offshore Island service, operated by the East Pakistan Shipping Corporation, plies every alternate day between Chittagong and Cox's Bazar, a 10 hours journey that takes Rs. 2.92 paisa only per adult by the third class travel[2] Off-shore islands of Cox's Bazar, via Adinath, J.M.Ghat, Bazarichali, Materbari, Ujantia, Ali Akber Dail, Kutubdia, Meghnama, Bhola, Sanua, Dharang to Chittagong.

The rivers are the principal means of communications in Chittagong Hill Tracts, but the interior is being gradually opened up by roads. East Pakistan Shipping Corporation operates several Ferry services to connect some of the unbridged trunk roads of East Pakistan such as Ariche-Goalundo Ferry service, Ariche-Nagarbari and Narayanganj-Daudkandi Ferry service. Operation of the first two services starts at 6 am. up to 11-30 pm. and within this time 18 trips (up & down) in each routes are performed. Narayanganj-Daudkandi Ferry service operates 5 trips in each direction which starts at 7-30 am. up to 8-30 pm. The vessels operated by the EPSC[3] but the Ghat's are maintained by the IWTA.

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1 Chittagong was previously connected with Calcutta and Rangoon by Coasting Steamers of the British India and Asiatic Steam Navigation Companies Ltd. Ref: East Bengal District Gazetter, Chittagong, p. 132.

2 Vide; Appendix 1.

3 EPSC - East Pakistan Shipping Corporation, an autonomous body was constituted in 1964 with the purpose of developing water communications between inland areas and offshore islands and promoting traffic on the rivers.

Motor Launch Services

Motor Launch Services have become very popular since early 1950. By 1969 there were motor launch services to 1426 stations in East Pakistan with a network of 324 routes. Dacca, Narayanganj, Khulna, Barisal, Goalando, Patuakhali, Chandpur, Khepupara, and Chittagong are the busiest launch stations.

Total mileage of East Pakistan Inland Water Ways rose from 3373 miles in 1959-60 to about 4995 miles in 1968-69[1] an increase of about 48 percent during the period of 8 years. These water routes have been divided into three classes such as: Perennail, Seasonal, and Estuary rough water comprising of about 1643, 3146 and 206 miles respectively as shown in table 2 below;

Table 2.RIVER MILEAGE[2]

Classified	1959-60	1965-66	1966-67	1968-69
Perennial	-	3146	3146	3146
Seasonal	-	1643	1643	1643
Estuary rough water	-	206	206	206
Total	3373	4995	4995	4995

During the same year, about 1426 stations were served by 646 operators along 324 routes[3]. The core of the Inland Water Transport System is made up of 2572

1 Progressive report IWTA, 1970; p.1-2.

2 IWTA, Annual Traffic Report, 1966-67; p.2 and IWTA Progressive report, 1971, p.1

3 In 1959-60 total number of stations, operators, routes and IWT Crafts were 1168, 207,140 and 1517 respectively. This statistics shows an increase of about 24,212,131 and 70 percent respectively over a period of 8 years.(Vide Table 3 and 4; progressive report IWTA, 1971; p.1.

crafts shows an increase of about 70 percent during a 8 year period, the break down of which are shown as:

Table 3. BREAK DOWN OF CRAFTS PLIED DURING 8 YEAR PERIOD[1]

Sl.No.	Description	1959-60	1968-69	% + -
a)	Motor Vessels	644	1740	128
b)	Steam Vessels	177	107	-40
c)	Dumb Vessels	696	995	43
d)	Coasters	-	34	-
e)	Oil Tankers	-4	13	225
f)	Oil Barges	2	2	-
g)	Oil Storage	2	5	150
	TOTAL NOS. OF IWT CRAFTS.....	1517	2972	70

Tremendous increase in the number of operator's[2] has led to healthy competition in the movement of goods and breaks the monopoly of one mode of transport. No. one operator can charge as per his own wishes and there by the rate is established.

Total cargo route mileage, as per KPIWTA source, during the year 1968-69 was 1897 miles of which 305 miles for seasonal, 1386 miles and 206 miles for perennial and Estuary rough water respectively[3]. During 1968-69 IWTA crafts carried about 2.72 million tons and about 26.40 million passangers. The total ton miles and passanger miles being performed during the same period were 357.99

1 Ibid.

2 Vide; Table 4.

3 Ibid.

T A B L E-4

STATEMENT SHOWING ROUTE LENGTH, NUMBER OF ROUTES, STATIONS, PASSENGER & CARGO OPERATORS.

Year	ROUTE LENGTH (IN MILES)				TOTAL CARGO ROUTE MILEAGE				No of routes served	No of stations served	OPERATOR'S		
	Seasonal	Perennial	Estuary rough water	Total	Seasonal	Perennial	Estuary rough water	Total			Passengers	Cargoes	Total
1959-60	-	-	-	3373	-	-	-	-	140	1148	-	-	207
1960-61	-	-	-	3376	-	-	-	-	148	1163	-	-	-
1961-61	1301	2962	206	4469	-	-	-	-	226	1371	199	23	222
1962-63	1617	3090	206	4913	-	-	-	-	246	1380	205	23	228
1963-64	1629	3113	206	4947	-	-	-	-	254	1389	214	34	248
1964-65	1643	3135	206	4968	-	-	-	-	261	1407	220	52	272
1965-66	1643	3146	206	4995	393	1541	122	2056	261	1414	226	56	282
1966-67	1643	3146	206	4995	394	1367	122	1883	265	1414	226	57	273
1967-68	1643	3146	206	4995	305	1386	206	1897	270	1420	232	58	290
1968-69	1643	3146	206	4995	305	1386	206	1897	326	1426	235	401	646

Sources: Based on Progressive Report IWTA,1971, p. 1.&IWTA Annual Traffic Report 1966-68(Table 3).

million ton miles and 702.00 million passenger miles. Passenger carrying capacity and cargo carrying capacity[1] during the same period increased to about 34 percent and 67 percent respectively as shown in table 5:

Table 5. STATEMENT SHOWING INCREASE IN THE NUMBER AND CAPACITY OF INT VESSELS DURING, 1959-60 AND 1968-69[2]

Description	1959-60	1968-69	% + -
Tons Carried	1.57 m*	2.72 m	73
Ton miles performed	237.56 mm	357.99 mm	51
Passangers carried	14.00 m	26.40 m	88
Passangers miles performed	380.00 mm	702.00 mm	85
Cargo carrying capacity	0.15 mt	0.25 mt	67
Passangers carrying capacity	80,836 Nos	109,001 Nos	34

Above table reveals an increase of 67 percent of INTA cargo carrying capacity[3] in the year 1968-69 over a period of 8 years. This increased capacity has helped in the movement of more and more goods from the place of production and/or import to the place of consumption and/or export. This increase in capacity leads to proper and timely distribution of goods from the place of production to the place of consumption and causes the stabilisation in the price structure. The significant role of INT for maintaining

1 Progressive report INTA '1971. p.1

2 Ibid.

* Note:- m-means million
mm-means million miles
mt-means million tons
Nos-means number

3 Vide; Table No.5

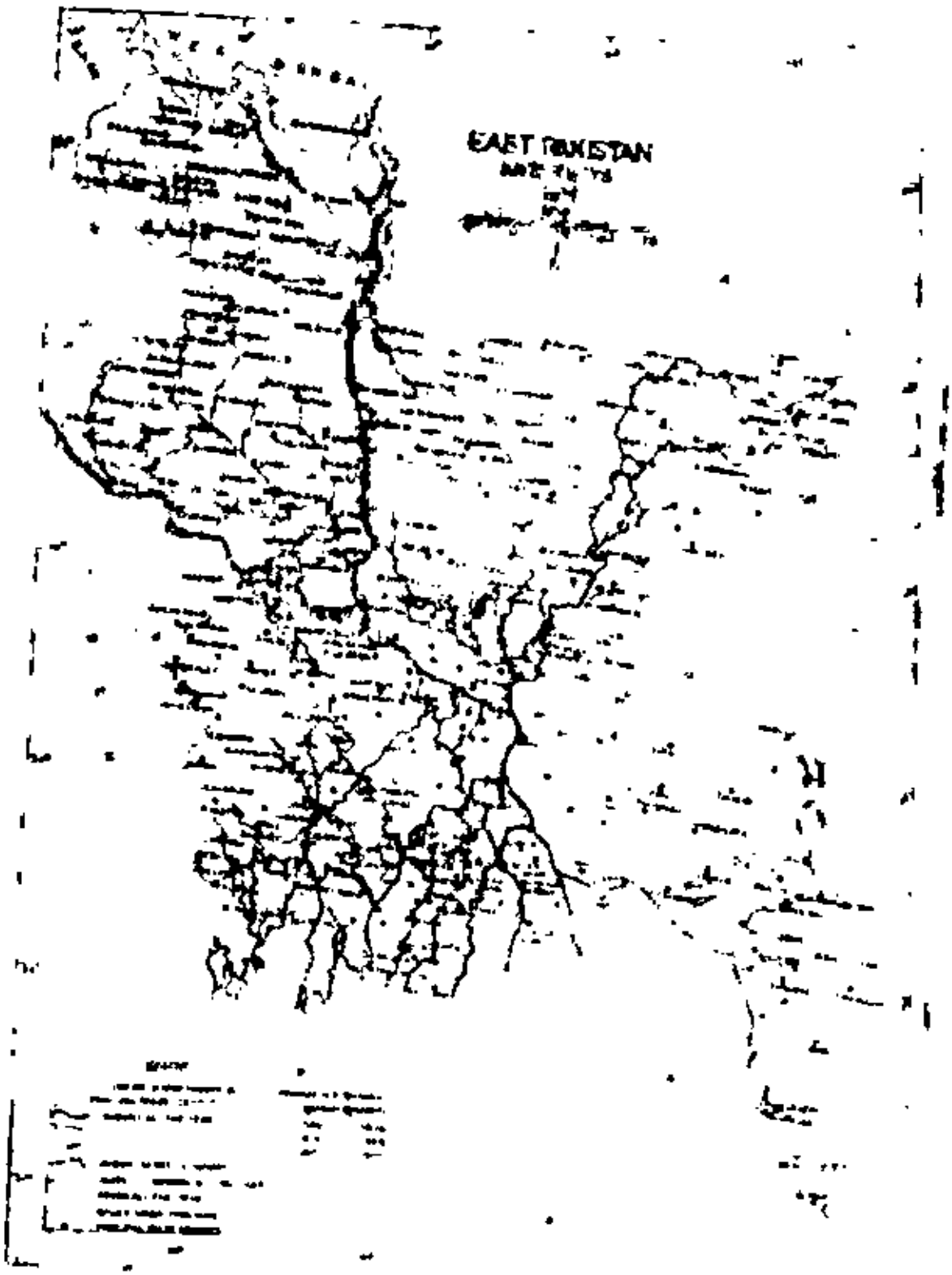
EAST TURKISTAN

TABLE - 6

COMPARATIVE STATISTICS OF THE PRINCIPAL COMMODITIES

Sl. No.	Commodity	Description	1964/65	1965/66	1966/67	1967-68
Total Traffic		Overseas	1674846	2239215	2323746	2241727
		Inland	361794	236153	321262	363849
		Total	2036640	2475368	2645008	2605576
1.	Coal	Overseas	37285	256326	437234	214444
		Inland	95416	29680	9196	6128
		Total	132701	286006	446430	220572
2.	Cement	Overseas	140452	95726	158896	196957
		Inland	37322	26402	34633	47510
		Total	177774	122128	193529	244467
3.	Jute	Overseas	506551	608005	492543	491305
		Inland	19738	19973	16156	20810
		Total	526289	627978	508699	512115
4.	Jute products	Overseas	190010	257767	259215	269438
		Inland	5048	1896	4735	1102
		Total	195058	259663	263950	270540
5.	P.O.L.	Overseas	336944	377337	375073	386951
		Inland	556	1410	588	21
		Total	337500	378747	375661	386972
6.	Paper	Overseas	62635	48637	57854	72913
		Inland	4219	2210	7508	1303
		Total	66854	50847	65362	74216
7.	Foodgrains	Overseas	152771	401420	401536	435531
		Inland	82733	46215	[illegible]	[illegible]
		Total	235504	457635	424252	455419
Total (item 1 to 7)		Overseas	1426648	2045218	2182351	2067539
		Inland	245032	137786	95532	96762
		Total	1671680	2183004	2277883	2164301
Percentage of the total principal commodities over the total traffic.			82	88	86	83

Source: IWTA Annual Traffic Report (1966-67), p. 26 & IWTA Progressive Report 1971, p. 2.

the equilibrium in the general distribution of both industrial and consumer goods can, best, be under stood by the table No.6 which shows that coal, cement, jute, jute products, POL*, paper and food grains account for 83 percent of the total traffic of some 61 commodities.

IWTA has charted, marked and lighted about 1400 miles of water way making the route possible for day and night navigation safely; has under taken the shortening of route mileage by cutting new channels and have divided the water ways into i) Smooth all the year, ii) Smooth 1st October to 14th March, and partially smooth all 15th March to 15th September, iii) Partially smooth all year and rough all year.[1] This is just a modification of the existing classification based on the nature of the river flow throughout the year(Map 5)**

Accordingly the size and capacity of the vessels were also being classified such as[2]:

i) Form A - vessels falling under this category are entitled to operate on any length of route during any hour of day and night both on smooth and partially smooth water. These are bigger vessels providing more space, safety, comfort and speed.

ii) Form AB - These are mainly 60' vessels and are fit to ply on smooth water during day time only. But due to existence of quite a sizeable number of routes involving partially smooth water and consequent shortage of suitable vessels for voyage over partially smooth water,

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1 New Classification of Water Ways; IWTA handout Bulletin dt.4.3.1970; p. 1-3(Vide; Map 5).

2 IWTA handout on classification of launch stations; dt.6.1.1970.

* Petrole, Oil and Lubricant.

** Map drawn on the basis of the latest IWT classification of routes with slight alteration showing the class ' Smooth all the year ' into 3 subclasses and other minor tributaries serving principal trade centres.

some of these small launches are being permitted from time to time to cross partially smooth water territory during certain hour of day only.

In order to provide modern terminal, transit and storage facilities launch stations have, also, been classified on the basis of total number of launches touch per day. Stations having exceeding 49 touches per day classified as 'A' class, those having more than 16 and less than 49 touches per day as 'B' class and those having more than 8 but not exceeding 16 touches per day are classed as 'C' class stations.

To meet the need for each class of stations, floating terminals/ pontoons to be placed have, also, been classified as follows:[1]

i) "Large" ("L") = more than 64' ft.
ii) "Medium"("M") = more than 30' ft but not exceeding 64' ft.
iii) "Small"("S") = up to 30' ft.

"A" class stations are entitled to "L"-size floating terminals/pontoons; "B" class to "M"-size, & "C" class to "S"-size. The break down of the stations class wise; and floating terminals/pontoons, size wise, of the stations are shown in the following table:

Table 7. BREAK DOWN OF THE STATIONS, CLASS WISE; AND FLOATING TERMINALS/PONTOONS, SIZE WISE [2]

Class	No.	Size entitled of floating terminals/pontoons	No.
A	9	" L "	9
B	55	" M "	55
C	70	" S "	70
Total	134	-	134

1 Ibid.

2 Ibid.

class wise and size wise breakdown of 57 [1], out of the 76 stations to be taken over, developed and operated by the Authority are given below

Table 6. CLASS WISE & SIZE WISE BREAK DOWN OF LAUNCH STATIONS[2]

Class.	Nos.	Size entitled by floating terminals.	Nos
A	6	L	6
B	32	M	32
C	19	S	19
Total	57	-	57

IWTA has classified the river communication system into seven zones for efficient handling and maintenance of traffic and transport. Table 9 shows route mileage, numbers of stations, service - zonal/interzonal and number of passanger launches served by each zones.

A workshop for servicing river conservancy equipment has been set up at Barisal. IWTA has provided modern terminal, transit and storage facilities[3] at the five major inland river ports of East Pakistan, namely, Dacca, Narayanganj, Chandpur, Barisal and Khulna. Fifty three way side river stations have been provided with pontoon facilities; thirteen godown(6 floating and 7 shore), 20 landing facilities in coastal Islands(11 Terminal Buildings with 9 jetties and only jetties at 9 places) were also built. Besides, Mechanical handling

1 Vide; Appendix II

2 EPIWTA handout on classification of launch stations, dt. 16.1.1970.

3 Progressive report IWTA - 1971, p.1-2.

Table 9. MOTOR LAUNCH SERVICE[1]

ZONES	ZONAL HEAD QUARTERS	NO. OF STATIONS	ROUTE MILEAGE	SERVICE EACHWAY ZONAL	SERVICE EACHWAY INTERZONAL	NO.OF PASSENGER LAUNCHES
A	Dacca	169	527	50	69	165
B	Narayanganj	167	450	86	19	76
C	Barisal	417	1351	60	44	68
D	Khulna	309	924	34	27	59
E	Sirajganj*	171	533	29	16	25
F	Sylhet	246	744	48	1	46
G	Chittagong	48	260	18	-	22
T	Total	1527	4789	325	89 +	46 ++

[1] Source: Based on IWTA notice, handouts and other source of information as late as 1971.

* Sirajganj is the headquarters of the northern zone.

\+ Number of service as per approved time table.

++ Number of launches actualy plying according to approved time table.

facilities (8 Mobile Cranes, 5 Fork Lift Trucks and 48 Platform Trucks Trollies), 3 ferry landing facilities, 4 coal handling pontoons and 7 R.C.C. Jetties (2 at Dacca and 5 at Narayanganj), 12 wooden jetties including food handling jetties and about 2000' ft Quay wall need to be mentioned. Further more, during the Fourth Plan period, Chorasal, Narsingdi, Bhairab/Ashuganj, Shahzadpur* will be provided with such terminal, transit and storage facilities and about 450 stations will be developed by placing pontoons. All these efforts are definitely playing a great role in the maintenance of price equilibrium and distribution of goods by IWT by increasing terminal, transit and storage facilities for a higher transport charge combined with a quicker transit facility which is less costly to the transport user than a lower transport charge combined with a slow transit.

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* Feasibility Report for a modern inland riverport of North Bengal near Ullapara railway station in Pabna district has been completed this year.

CHAPTER IV

RAILWAY

CHAPTER IV

R A I L W A Y

Historical Background:

Bengal was a century behind other north Indian provinces in material progress[1] which experienced neither any true road system nor any railway as late as 1862[2] when first railway (Calcutta - Kushtia) appeared in the scene. By 1901, the railway system was much developed and owed its origin to political rather than commercial or agricultural reasons[3].

First Railway plan, for areas now in East Pakistan, proposed to provide:

1) A direct Calcutta - Dacca linkage via Jessore and Faridpur.[4]

ii) Another route connecting Calcutta and Kushtia.

Annexation of Lower Burma (1854)[5] necessitated quick means of transit between Calcutta and Akyab via Dacca. A British Colonel proposed a railway across the Sunderbans to Dacca and thence to the South-East.

Eastern Bengal Railway:

Further demand from the army quarters (1855)[6], for a rail link between Calcutta and Dacca initiated the origin of the Eastern Bengal Railway Company.

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1 Tea Cultivation in India, 1863, p.305.

2 Ibid.

3 Malik: Hundred years of Pakistan Railway,(1862-1962), Karachi,1962.

4 The proposed route had to be given up due to topographical reasons - Davidson: The Railways of India, London,1868, p.216.

5 Malik: Op.Cit; p. 14.

6 Op.Cit; Ahmad, Rafiq; p. 112.

The Company was incorporated in 1857; completed the Calcutta - Ranaghat (B.G*) section, opened it to traffic on the 15th day of November, 1862 and extended up to Goalundo by January 1, 1871[1], when it entered Faridpur district near Kachpara and crossed the north west corner to its terminus at Goalundo on the Padma. A branch line was also extended from Pachuria to Faridpur. [2]

From Sara, on the north bank of the Padma, the Northern section of the Eastern Bengal State Railway (M.G +), passed across the south western corner of Pabna district for about 5 miles to Siliguri with branches to Parbatipur, Dinajpur and Kaunia. Increasing demand for the transport of jute resulted in the, rapid, completion of Calcutta - North Bengal line via, Poraha, Parbatipur and Saidpur by 1883[3]. Few districts were better provided with the railway facilities that had been rapidly extended after 1895.

Rajshahi district was intersected by the "Broad Guage" line from north to south while the "Meter Guage" one of the same section traversed the eastern angle of Dinajpur district from south to north, intersected the western Rangpur from south to north having a northerly traverse in the western Bogra protected by an embankment from the flood of the Jamuna.

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1 Ibid, p. 113.

2 Op.Cit; EBAG(1901), p. 344.

3 Op.Cit; Ahmad, Nafis, p.113.

* Broad Guage: Distance between two parallel rails being 5' 6" apart.

\+ This section was opened in between 1874 and 1879: Ibid; p.113. Meter Gauge - the distance between the parallel rails being 3' 3 $\frac{3}{8}$ " apart.

The Bihar section (M.G) used to run westward from Parbatipur, bisected the district as well as the district headquarters of Dinajpur leaving the main line (B.G) at Parbatipur Junction.

The Assam line passed through Rangpur town and crossed the Tista and Dharla rivers by large bridges. A branch line started from the left bank of the Tista up to Kurigram.

The Bengal Duars Railway [1] started from the Lalmanirhat on the Assam line, traversed the north of the district of Rangpur to meet the Eastern Bengal Railway at Jalpaiguri (now in India).

Another branch line the Brahmaputra - Sultanpur [2], traversed the Gaibandha Sub-division from Santahar to Phulchari, branched off at Santahar, and, after crossing the Bogra town, turned northeast and finally terminated at Phulchari on the Brahmaputra. During this period another new line from Maunia to Bonarpara was sanctioned.

Northern section of the Eastern Bengal State Railway was connected with the Eastern Bengal Railway by constructing the famous"Harding Bridge in 1915 [3] —— " .... tremendous development in the history of the railway transportation system that gave a long stretch of railway link between Calcutta and Siliguri".

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1 Op.Cit; EBAO p. 267.

2 Ibid; p. 278.

3 Op.Cit; Ahmad, Nafis; p. 113.
(The famous Harding Bridge connecting the Rajshahi and Khulna Division over ganges between Pakasy and Bheramara was constructed in 1915); Vide Fig. 1.

APPROACH TO HARRISON BRIDGE

LOOKING THROUGH THE HARRISON BRIDGE

Dacca - Narayanganj section and the Dacca - Mymensingh links were opened in 1885 [1]. The later branch (M.G) entered the district of Mymensingh at Kaoraid, passed through Nasirabad to Jamalpur and thence southeast to reach the Jamuna at Jagannathganj. This railway, with seventeen stations had a total length of 67.25 miles,[2] mostly connected by feeder roads with the interior marts.

Another meter gauge railway linked Mymensingh with Narayanganj which was, again, connected with Calcutta by rail and steamers via Goalundo [3].

Assam Bengal Railway:

On demand of the English tea planters, the Assam Bengal Railway, opened for passenger and cargo traffic in 1895 [4], from Chittagong extended northwesterly direction, nearly paralled to the coast, between the Sitakund Range and the Dacca Trunk Road.

It traversed the district of Chittagong for nearly 50 miles when it crossed the Feeny, traversed the district of Noakhali extending branch line from Lakshan to Sudharam. The branch line from Lakshan westward to Chandpur established communication with Calcutta (a 24 hour's journey)[5] by means of the Indian General Steam Navigation Company's

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1 Op.Cit; Ahmad, Nafis; p. 113.
2 Op.Cit; EBAG, p. 328.
3 Ibid.
4 Op.Cit; EBDG; p. 131.
5 Op.Cit; EBAG; p. 400.

steamers to Goalundo, the terminus of the Eastern Bengal State Railway that connected Calcutta.

On July 1, 1895 [1], the Chittagong - Comilla section was opened and extended to Kariaganj via Akhaura within a year. The Assam Bengal Railway, during this time, stretched a distance of about 120 miles [2] through the southern part of the district of Sylhet to Chittagong.

Chittagong Hill Trackt experienced no railway but a tram way at Barkal to enable travellers to avoid the rapids in the Karnaphuli [3]. Tea, Jute and such other food grains moved towards the Chittagong port. The proposal of the railway authority for the constructio n of jetties for the sea-going vessels at Chittagong port was nullified by the vested interested groups. Inspite of vehement opposition from such interests, the construction of first jetty for handling the sea-going vessels was done in 1899 [4] by the Assam Bengal Railway Authority in collaboration with the Government of India. Subsequantly more jetties were constructed. The working of the jetties were transferred from the Railway authority to the newly created Chittagong Port Trust on June,30,1960.

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1. Op.Cit; Ahmad, Nafis; p. 113.
2 Ibid.
3 Op.Cit; EBAG, p. 412
4 Op.Cit; Ahmad, Nafis; p. 113.

Calcutta oriented railway needed several miles of new lines to direct traffic flow towards the only port at Chittagong to meet the requirements of industrial and commercial development of the newly created province of the emerging state of Pakistan.

The Jessore- Darsana * (B.G) section was opened on april,1951, to connect Khulna/Jessore and Darsana by about 43.25 miles of railway. During this period Shaistaganj - Habiganj(9 miles M.G) section was also rehabilitated. Sylhet-Chhatak (M.G.21 miles) section opened for traffic, on October,1954, runs along the left bank of the Surma River to serve an area of about 250 square miles with a population of about half a million [1]

* It not only serves the needs of the Assam Bengal Cement Factory, but also gives impetus to local trade and industry. The area produces large quantities of rice, orange, betal leaves, fish and vegetables, and possesses a large internal market for imported commodities? [2]

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* Khulna-Jessore section became isolated from other parts of the province, after partition, when the linkage between Benapol and Darsana fell within the jurisdiction of the Indian territory.

Note: 'A narrow guage (2' 6")privately managed railway that used to run from Jessore to Jhenida, via Khairtola, Churamankati, Bayibatpur, Sarobazar, Dulalsurdi, Kaliganj, Kharikhali, Nishaikhali, and Jhenida and another branch line of it to Kotchandpur via Ghaeghati, could not compete with the advants of Bus Services along the same route. The buses took less hour and expenses for the journey of the same distance.'(Sources: Information gathered on investigation of the local area).

1 Ibid; p. 256-258.

2 Ibid; p. 258.

Other railway sections built during this preiod are: Amnura-Chapai Nawabganj (8 miles, M.G); Akhaura-Ashuganj(16.14 miles, M.G., Double Tracked); Kurigram-Chilmari(19.58 miles, M.G); Ruhea-Panchagarh(13.93 miles, M.G) and Narsingdi-Madanganj near Narayanganj (28.57 miles, M.G., completed in 1967). Besides, Traffic and Engineering Survey of the following proposed routes are being made:

Dohazari-Cox's Bazar with branches from Nasu to Ukhia and Satkania to Khankhanabad(87.97 miles); Habiganj-Azmiriganj(20.5 miles); Feni to Chandpur, Jhariajhangail to Rangtia(41.50 miles).

Construction of a line from Faridpur to Barisal has also been surveyed. A survey was also undertaken to a new route [1] which has been needed for a long time to connect Dacca with Aricha by a stretch of 45.43 miles of metergauge railway to cut the Dacca-Goalundo rail and river journey by half. This proposed road is expected to connect another proposed new road between Goalundo and Mobarakganj via Jhenida for a short cut railway journey between Dacca and Khulna.

Railway in East Pakistan:

The railway system in East Pakistan, serves about 40.5 [2] percent of the total population through 417 stations and operates over 63 routes having a total length of about 1751.69 miles with varying sizes of tracks of about 2,688.16 miles in length to serve about 30 percent of the total area.[3]

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1 Press Information Department, Govt. of Pakistan, Karachi,Handout E, No. 3633, 1952. p.1-2

2 Geographical Factors in the Development of Rail Transport in East Pakistan, - Siddiqui, A.H., Oriental Geographer, Vol. XII No.1, Jan,1968; p.25.

3 Pakistan Year Book 1970, National Publishing House Ltd., Karachi-Dacca. EDIT. Rafe-uz-Zaman, p.232.

Two significant traffic partings viz, i) Break of Gauge and ii) Unbridgeable Jamuna - Padma - Meghna conversion with 91 [1] railway bridges and a number of ferries [*] are subject to enormous technical difficulties. Out dated trucks and equipments, due to shortage of fund, reduces the carrying capacity and increases the operating costs.

Railway West of Jamuna:

The Padma - Jamuna demarcates the meter gauge region in the east to the area of broadgauge in the west with few exception in the Rajshahi division where following metergauge sections also prevail:[2]

i) Kurigram - Tista junction-Parbatipur-Dinajpur-Ruhea-Thakurgaon;

ii) Kurigram - Tista junction-Bogra-Santahar;

iii) Kurigram - Lalmanirhat-Parisari-Boghaihat;

iv) Amnura - Godagari - Nawabganj etc.

About 320 miles of metergauge railway in the north eastern division of Rajshahi(approximately 31[3] percent of the total length of metergauge line in the province) serves, chiefly, as a feeder to the broadgauge system connecting at Santahar and Parbatipur, with a spur to the ferry service across the Jamuna at Phulchari that carries a substantial volume of traffic.

The broadgauge main line stretches from Khulna to Chilahati branching out to Benapol, Darsana, Goalundoghat, Faridpur, Bhatiapara, Kumarkhalighat, Ruite, Sirajganj and Rajshahi.

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1 Faridpur-Jhenaida,Jessore-Khulna road, Vol. I Aug,1963; Berger Inc. Economic Feasibility Report; p. II 5.

2 Berger Inc. Economic & Feasibility Report, Nagarbari-Dinajpur, Vol. IA, p.II 39.

3 Op.Cit; Nagarbari-Dinajpur, Vol.IA, p.II39.

* The river ferries at Jagannathganj-Sirajganj and Bahadurabad-Fulchari are maintained by the Pakistan Eastern Railway.

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It connects all the districts in the western region except Barisal* and Patuakhali district. Recent conversion of Rupsa-Bagerhat section (19.75 miles, previously narrowgauge 2'6") to broad gauge system has increased the length from 555.82 miles to 575.57 miles in 1970. Khulna division including the district of Faridpur includes 355.57 miles or about 63 percent of the total broad gauge mileage. It crosses the Ganges by the famous Harding Bridge at Paksey(Sara), the headquarter's of the railway district, and thus connects Rajshahi division with the division of Khulna. The traffic is heaviest on the lines from Khulna to Goalundoghat, Khulna to Sirajganj and Sirajganj to Rajshahi. Only double truck route runs between Darsana and Abdulpur.

Ishurdi, the hub of most of the traffic, a junction station with a marshalling(receiving and ronting) yard through which all traffic from Rangpur, Bogra, Rajshahi and Dinajpur to Khulna and Goalundo pass before crossing the Hardinge Bridge. It is connected with the district headquarters of Pabna by railway bus service.

Broad gauge railway, with in Rajshahi division, consists of a mainline running from the Harding Bridge on the ganges near Ishurdi to the north of the division at Chilahati. An east west broad gauge line operates between Sirajganj, on the bank of the Jamuna river, and Amnura via Ishurdi and Rajshahi. The total broad gauge length in this division being about 220 miles or slightly more than 37 percent of the total broad gauge mileage.

The railway indirectly connects some of the major trade centres in East Pakistan. Principal centres of the province are poorly linked to each o-ther by rail. Jhenida, Barail, for example, or Nagura have no rail connections. Distance between Jessore and Faridpur by rail is about 80[1] miles longer than by road.

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1 Op.Cit; Faridpur, Jhenida, Jessore-Khulna road, Vol. I Aug,1963; p. 8.

* Work started for Faridpur-Barisal, Khulna-Mongla linkage.

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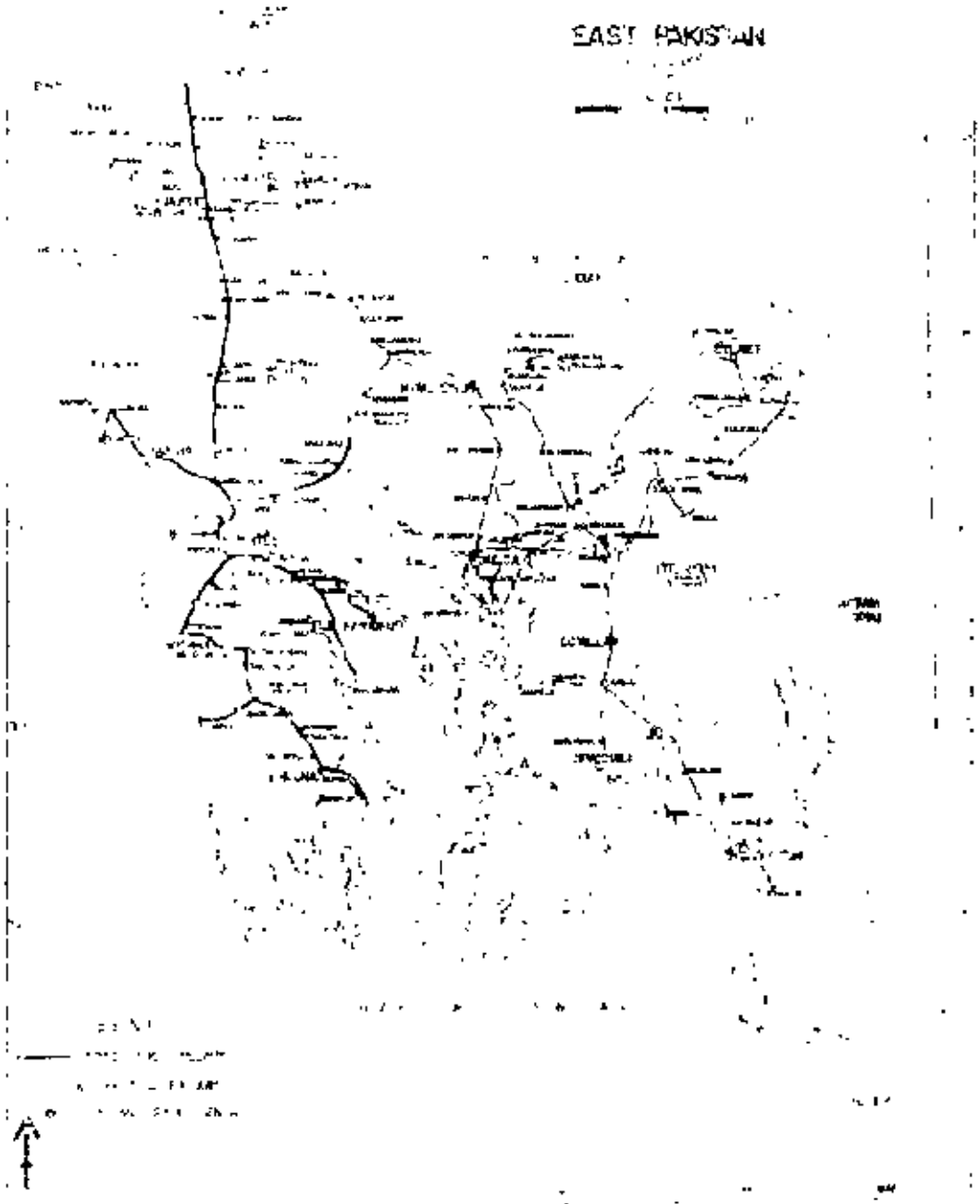
EAST PAKISTAN

Kushtia, stands on the Goalundo-Paridpur line, has no rail link with Jhenida which is about 6 miles away from the closest railway station at Moharakganj. The Kushtia-Iahurdi railway connects Moharakganj and points in south is far from direct. The Pakistan Eastern Railway is engaged in handling freight to and from Khulna, Rangpur, Bogra, Rajshahi and Dinajpur. Passenger traffic recorded are also heavy.

Railway on the Eastern and Central Region:

The main meter gauge system in the Eastern and Central Regions are divided into two commercial as well as transportation districts of Dacca and Pahartali controlled by Bhairab Bazar and Chittagong respectively.

Chittagong-Akhaura; Laksham-Chandpur; Laksham-Noakhali; Feni-Belonia; Chittagong -Nazirhat and Chittagong-Dohazari sections are controlled by the Pahartali district. Bhairab Bazar(Dacca) sectors includes: Narayanganj-Jagannathganjghat; Jamalpur-Bahadurabadghat; Tongi-Ghatak via Akhaura and Kulaura; Kulaura-Latu; Habiganj-Salia; Bhairab Bazar-Mymensingh; Gouripur-Mohanganj and Bhangani-Jharia Jhanjail.

Assuring an area of ten miles on either of its sides, it is estimated that Pakistan Eastern Railway serves an area of nearly 17510 square miles or about 33 percent of the total area of East Pakistan by an intricate system of railway networks connecting 417 stations in all, 30 of which are railway junctions.[1](Vide,Map 6).

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1 Pakistan Eastern Railway Time Table and Guide, June 1, 1970.

The area served by one mile of rail track(rail-land ratio),* the index of the availability of higher land free from inundation and suited for laying track, varis from area to area,the average of which being estimated in the ratio of 1 : 3.[1]. In the district of Comilla, Kushtia, Bogra and Rangpur, the rail land ratio ranges between 16 and 18 square miles where as the district of Chittagong, Noakhali, Dacca, Faridpur, Mymensingh and Dinajpur maintain 31 to 25 square miles to a mile of rail track(Table 10).

As per 1961 census, one mile rail track is available to every 30,000 people in the province; but it varies from area to area, conditioned, largely, by the size interms of area and population along with other variants, such as, geographical and topographical nature.

In the districts of Rangpur, Dinajpur and Jessore, nearly 55-68[2] percent of the total population is served by rail where one mile of rail track serves about 10-14 thousand persons; whereas in the district of Dacca and Noakhali, the figures have been estimated as 32/40[3]percent of the total population and 45 thousand persons respectively; 37-43 percent and 24-26 thousand persons for the district of Chittagong, Comilla, Sylhet and Mymensingh, (Table 11).

Inadequate rail networks, mostly, limited in spatial distribution further extension of which demands an availability of rolling stock, workshop facilities and accessories essential to the physical construction of tracks. Chittagong being the main port on the east of the Jamuna, double-track[4] becomes, badly, necessary, specially, from Ashuganj to Akhaura and thence to Chittagong to relieve the congestion for Chittagong bound traffic.

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1 Op.Cit; Siddiqui, A. H., p. 28.

2 Ibid; p. 29.

3 Ibid; p. 29.

4 Op.Cit; Ahmad, Nafis; p. 258.

* The area served by one mile of rail track.

Table 10. THE RAIL-LAND RATIO BY DISTRICT

	Total Area sq. Miles	Area served by Rail sq. Miles	% of Total Area served by Rail	Rail-Land Ratio (sq. miles served per miles of line)
East Pakistan	55,126	16,000	30	31
Chittagong	2,970	747	25	28
Noakhali	1,598	830	52	31
Comilla	2,531	1,297	52	17
Barisal	4,040	0	0	0
Dacca	2,741	890	32	30
Faridpur	2,584	622	24	28
Mymensingh	6,230	2,269	35	26
Bogra	1,475	912	70	18
Dinajpur	2,535	1,180	46	25
Khulna	4,810	299	6	142
Kushtia	1,371	837	60	16
Pabna	1,826	709	39	34
Rajshahi	3,639	1,376	40	30
Rangpur	3,699	2,197	60	17

Source: Siddiqui, A.H; Geographical Development of Rail Transport in East Pakistan; Oriental Geographer; Vol. XII No. 1 Jan,1968; p. 28.

Table 11. RAIL-POPULATION RATIO*

	Percentage of the total population served by rail	1 mile of rail track serving population(000)
East Pakistan	40.5	30
Jessore	63	10
Kushtia	65	11
Dinajpur	55	14
Rangpur	60	14
Dogra	68	16
Rajshahi	37	18
Chittagong	41	25
Sylhet	42	26
Comilla	43	26
Mymensingh	37	25
Faridpur	19	29
Pabna	37	31
Dacca	32	45
Noakhali	42	45
Khulna	17	61

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* Population served by one mile of rail track.

Source: Siddiqui, A.H; Geographical Development of Rail Transport in East Pakistan; Oriental Geographer; Vol. XII No. 1 Jan,1968; p. 29.

Table 12. AVERAGE FREIGHT TRAFFIC PER YEAR

Period	Freight TONS	% increase or decrease	Freight ton-miles	% increase or decrease	Average distance per ton carried miles
1948-51	3622	-	596	-	165
1951-54	3496	-2	518	-13	148
1954-57	3970	+10	596	+100	150
1957-60	6576	+82	827	+39	126
1960-63	6334	+75	993	+67	157
1963-66	6099	+68	934	+57	153
1966-70	2982	-18	807	+35	271

Source: Based on Statistical Bulletin; Vol. 18, May,1970; No. 5, p.1036

Table 13. AVERAGE PASSENGER TRAFFIC PER YEAR.

Period	Passengers (000)	% increase or decrease	Passenger miles (million)	% increase or decrease	Average distance per passenger
1948-51	55,233	-	1934	-	35
1951-54	45,450	- 18	1529	- 21	34
1954-57	51,680	- 6	1486	-24	29
1957-60	64,609	+ 17	1699	- 13	26
1960-63	71,992	+ 30	1912	- 1	27
1963-66	70,553	+ 28	1905	- 1	27
1966-70	71,912	+ 30	2041	+ 5.5	28

Source: Based on Statistical Bulletin; Vol. 18, May,1970; No. 5, p. 1036.

The railway have been carrying a steadily increasing amount of goods and traffic after an initial fall since 1947 for about 13 years after which the percent of freight tonnage showed (Table 12) a gradual fall. The situation became surprisingly lower during the period 1966-70. But the percentage of ton mileage rose to its peak during the period 1960-63, when it, again, showed a downward curve. However, the growth of passenger traffic during the last decade remained, almost static but percent of passenger miles were on the increase since 1947 except an abrupt fall during the period 1954-57. Average distance per ton miles fell abruptly during the period 1957-60 with a steady rise till 1970; [1] whereas a gradual fall in the average distance per passenger mile (Table 13).

Average drop in the freight traffic during the period 1951-54 was due to abnormal flood situation which disrupted the communication of the entire province[2]. However, marked growth during the period 1954-60 explains the developing state of economy as well as the restoration of, specially, rail transportation within the province. Increase in freight traffic is also due to extension in domestic supplies of food from elsewhere. The increase in freight traffic on the broad gauge section was most larger than the increase on the meter gauge section.

Tremendous improvement of Roads and Highways, specially in the broad-gauge area, more over, adverse effect of 1965 war between Pakistan and India have done much to lower the percent of freight during the period 1960-66 which again aggravated during the period 1966-70 owing to political instability throughout the province.

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1 Vide; Map 7 & 8.

2 Op.Cit; Siddiqui, A.H; p. 34.

It is also interesting to note a sharp fall in the average distance per ton carried by the railway during the period 1957-60, because of, almost, stoppage of transit service from West Bengal to Assam, specially, due to promulgation of Martial Law in 1958 when local investment of industry and trade gained momentum , movement of long distance freight decreased but, on the other hand, that of the short distance increased to its peak.

The fall during the period 1963-66 can, best, be explained as the adverse effect of war with the neighbouring country. Owing to political upsurge, trade and commerce, almost, deteriorated, percentage of frei-ght tonnage has fallen abruply; frequent natural calamities accentuated the shortage of food and other daily necessities and needed to be imported from else where. Consequently an increase in long distance freight travel and decrease of short haulage within the province. During this period the meter gauge produced 68 percent of the total ton miles, whereas the share of the broad gauge was only 32 percent.[1]

The number of passengers carried by the Pakistan Eastern Railway since partition are considerably high, because third class carriage fares are among the lowest in the world.[2] Average passenger miles generated by railway have been estimated as 1,565 per year out of which only 31 percent were handled by the broad gauge section. Figures in Table 13 indicate a drop of number of passengers and passenger miles by 18 and 21 percent respectively, during the period 1951-54 over 1948-51 because of the division of traffic from Calcutta to Chittagong and the stoppage of traffic between Calcutta and Assam. The broad gauge system lost most of this traffic.

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1 Ibid.

2 Op.Cit; Rashid,H; p. 268.

AGRICULTURAL PRODUCTION MAP

MAP 7

Despite the increase on the metergauge section the average distance for passanger recorded another drop as there was no increase in passenger traffic on the broadgaige during the period 1954-57. However, the volume of passanger traffic during 1957-60 considerably increased over 54-57. Gradual dropping in the average distance per passengers during the successive periods since partition, as well as almost static condition for the last 10 years reveal the tendency of the passanger's for short distance journey throughout the province (Table 13).

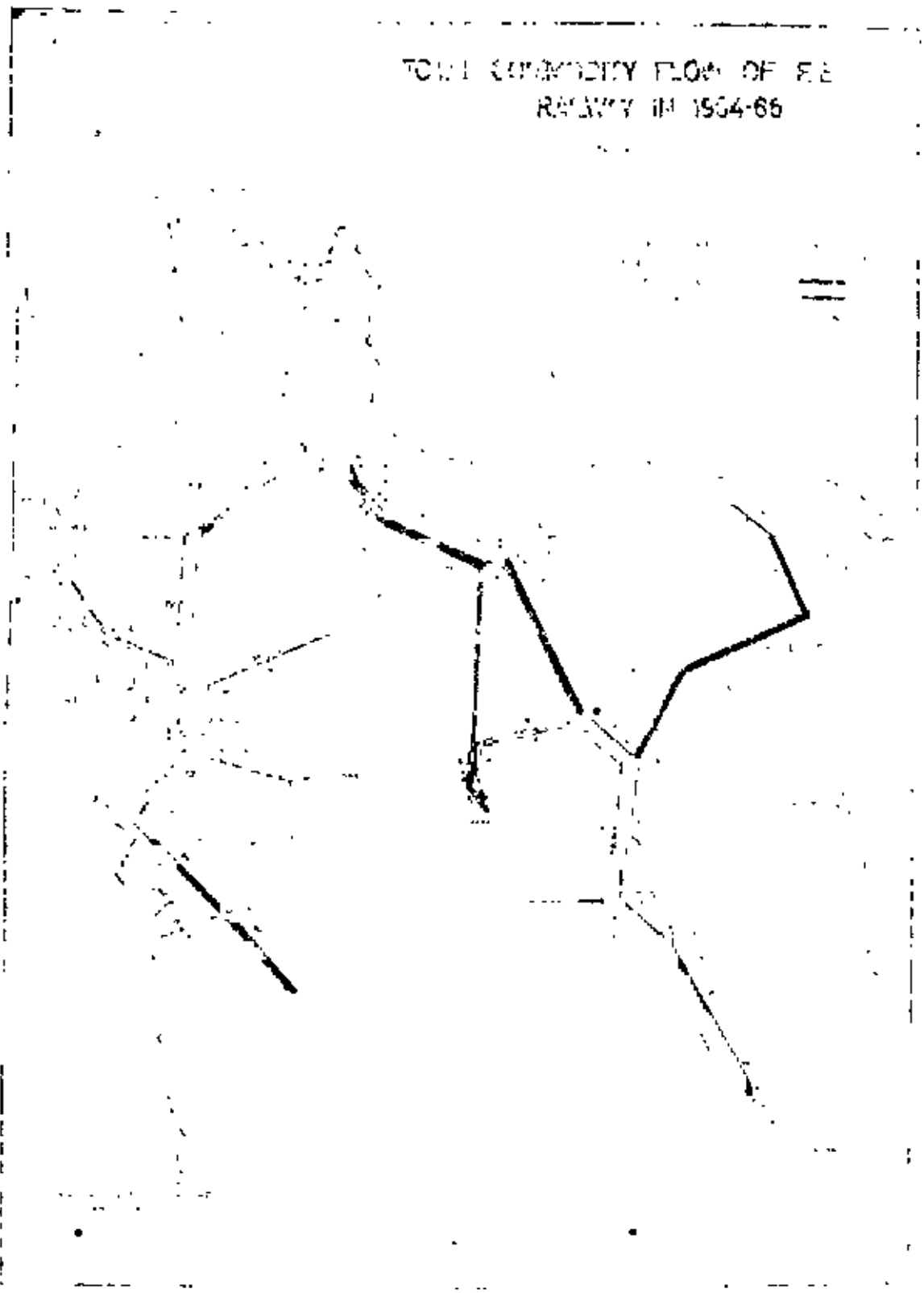
Due to increased domestic supplies provide to meet the local demand from time to time the rate of freight traffic increased, notably, over the passanger traffic and consequently there exist a disparity between them. Fall of per-capita traffic interms of passanger miles is another interesting feature to note that indicates low level of income of people as well as an affinity to short distance travel by most of these travelling populace. On inquiry, Mr. Siddiqui found that " .. most of the movement of the people is basically to a) attend local or regional markets, b) many people visit nearby towns to sell their perishable commodities, and they generally leave in the morning and return to their homes in the evening; c) and people go to appear before the courts for legal matters. The purpose of any such visit generally does not involve long journey.

The chart on a sample basis (1955-58) show that 72.8 percent of the total passengers travelled upto 25 miles, where as the people travelling over 300 miles were only 0.2 percent of the total passanger traffic[1] (as shown in Chart No. 1 below):

ZONE	1-25	26-50	51-100	101-150	151-300	Over 300
% of the total passenger traffic.	72.8	15.0	8.0	2.0	2.0	2.0

1 Op.Cit; Siddiqui, A.H; p.37.

TOTAL COMMODITY FLOW OF S.E.
RAILWAY IN 1964-65



MAP 2

The rail transport is very slow and does not mobilise the passanger and goods traffic at a fast speed; frequancy of travel is minimum to meet the local transportation demand. The high speed train with minimum stoppage takes about 14 hours to reach Khulna from Dacca - a distance of about 368 miles which costs Rs. 18 and paisa 56 only as fare for third class travel. Upper calss fare being too high i.e. A/C class Rs. 77.10 and First class Rs. 45.30 paisa only. The fare of first calss travel, almost, equals the fare of air flight from Dacca to Jessore that takes only 45 minutes to reach Khulna via Jessore (Appendix III)[1].

The impact of rail transport, on the location of trade centres is apparant, which have influenced the general distribution of population by an overall effect on trade and industry. So far, rail transport has helped the expansion of both domestic and international trade of the area, and through such market enlargement, railway did bring a number of small isolated economic units into some form of exchange economy and stimulated industrial growth. Movement of many agricultural raw materials from the rural areas to the urban centres and fertilisers and many consumer goods from thereof to their hinterlands will increase the demand on the existing railway facilities and paved way for further extension.[2]

Before the advent of the railway most of the trade passed along the rivers and all prosperous markets were on their banks. But with the coming of railway, new centres developed and deprived many riverside markets of their importance(Map 5 & 6). This has happened particularly in North Bengal. Further development of trade and industries will require extension of railway mileage.

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1 Based on Pakistan Eastern Railway Time Table & Guide, June, 1970.

2 Vide; Map 6, 7 & 8.

Saidpur, the sixth biggest town in East Pakistan, is a creation of the Railways. Formerly, it was on the important Calcutta-Jalpaiguri route and was a some what livelier place. At present it has the major workshop* for all the broad gauge lines. Lalmurdi, Parbatipur and such other urban areas, specially, in the northern Region, are dependant upon the Railways for a good part of their income.

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* Pahartali, a suburb of Chittagong, has the major workshop for all metergauge lines.

CHAPTER V

AIRWAYS

CHAPTER V

A I R W A Y S

Air travel has become increasingly popular and a large number of airports were constructed in East Pakistan. Long hour journey can now be made in a short time. Government officials and business men prefer air travel because of the valuable time it saves.

Air travel plays an important role in linking up the two far flung wings of Pakistan separated by more than thousand miles of Indian territory. It provides efficient, safe and economical air transportation for the people and commodities. Its role for the establishment of the image of the land as a modern, efficient and dynamic country need no mention.

In East Pakistan, road and railway routes are very difficult and circuitous on account of its rivers many parts of which can not be easily reached by surface transportation. Air ways became essential both for interwing as well as domestic services. PIA* fleet now comprises of 11 Boeings, 11 Fokker F-27, and 4 Stella with which it operates an extensive network of services covering 9 cities and towns in this part of the country.

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* Pakistan International Air Lines:(after partition the then Orient Air Ways was replaced by the newly formed Pakistan International Air Lines, that originated as a Government Department, a small Organisation, with limited resources and equipment, in 1954. within a year it was converted into a statutory corporation and therefore, got a sound commercial foundation with the rapid development of both the'domestic' as well as'International' Air services.)

Air Bus services, operated at reduced fares, linked Dacca with Ishurdi, Sylhet and Comilla, Chittagong with Cox's Bazar. East Pakistan had been the first large area to have Helicopter Services* connecting Dacca with Faridpur, Kushtia, Khulna, Chalna, Chandpur, Bogumganj, Barisal, Hatia, Sheondip, Rajshahi, Sirajganj, Bogra, Rangpur, and Dinajpur. Regular inland flights link Dacca by Fokker Freindships with Jessore, Chittagong, Comilla, Ishurdi, Sylhet, Shamshernagar, Thakurgaon; Chittagong with Cox's Bazar and Jessore(Map 9).

The Air Lines awareness to face competition on international route did not impair its efforts to develop its domestic and intersing services. By providing a direct Pindi-Dacca Service it enables people to fly from Dacca to Rawalpindi, or Karachi and vice versa, in the morning and return the same evening. Due to adequate increase of traffic, the frequency of service has been increased on the Dacca-Chittagong and Dacca-Jessore routes.

Another major steps towards the extension of air service in East Pakistan is the introduction of STOL+ air crafts.

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* Now being abandoned due to the serious accidents in early 1967.

\+ The STOL services are planned to supplement the Fokker routes. These 15–20 seater air crafts, equipped for short landing and take off, is well suited for service in East Pakistan and PIA is prepared to expand its operation as rapidly as the demand grows.

Commercial Activities(Cargo Traffic):

PIA is primarily a commercial organisation which shows a profit year after year ever since 1960. Cargo traffic is a major source of revenue that, even sometimes, exceed passanger revenue. Provision of current five year plan for regular cargo flights and the introduction of transport plane connecting two wings have increased cargo capacity on the Domestic/Inter Wing as well as on the International level. Comparative growth of selected economic indicators shows that Air Transport in Pakistan has been the most extraordinary economic activity for the last 10 years.

Table.15 COMPARATIVE GROWTH OF SELECTED ECONOMIC INDICATORS FOR THE LAST TEN YEARS1

YEARS	AIR TRANSPORT EMBARKING PASSANGERS	GROSS NATIONAL NAL PRODUCTS	MANUFACTURING INDUSTRIES
1960-61	27.9	5.2	"
1961-62	51.0	5.9	"
1962-63	20.0	3.5	9
1963-64	22.7	8.2	9
1964-65	17.6	4.5	8
1965-66	0.8	4.5	5
1966-67	37.2	5.0	9
1967-68	15.9	7.5	6
1968-69	7.9	5.1	6

Above Table shows that the growth rate of air passanger on average

1 FINER, May,1970; Vol. VII No. 5, p.81.

has been 22.3 percent (a gradual decline to normal may be expected), higher than most of the other economic activities. ICAO statistics reveals an average for the last 10 years[1] of 11 percent passengers carried and this rate being far from falling, has shown increase for the past two years 1966-67 and 1967-68 being 17 percent and 12 percent respectively.

PIA started out of the need for a quick means of transport. Its impact, within the Province & between the two wings of the country, has been much more significant than that of any other commercial transport which can justifiably claim to have made a valuable contribution towards national integration. Perishable goods such as Betal Leaves(from Jessore), Mango(from Ishurdi) and other valuable articles move to the distant places through PIA. Definitely it has tremendous impact on the economic and social development but it exherts,practically, negligible impact for the Physical development of the trade centres.

East Pakistan covers an area of 55,126 sq. miles administratively divided into 4 Divisions with 19 Districts. According to 1961 Census the population of Pakistan was 9,37,20613 out of which the figure of East Pakistan shows 50,85 million with a rate of growth of about 2.6 percent per year. Population, Urbanisation and Technological progress in aviation attribute the development of Air Transport much more than other economic activities. Air Transport attracts traffic for economic and tourist development projects which again involve directly owing to traffic they generate indirectly as factors boosting regional economy as a whole. Inadequate data in most cases is the bottle-neck for such investigations. However, an attempt has been made to show recent trends of factors that are responsible for the growth of air transport as well as development of air passengers.

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1 In developing countries the growth rate of 5 to 6 percent is considered to be normal for steady and regular progress that reflects an adequate degree of prosperity or that meet new demand for state planning.

COUNTRY OF AMHARA IN ETHIOPIA
MAP

Table 16. TREND OF AIR PASSANGERS GROWTH AND PERCENTAGE SHARE OF DOMESTIC AND INTERNATIONAL:

FINANCIAL YEAR	TOTAL EMBARKING PASSANGERS	INTERNATIONAL EMBARKING PASSANGERS	DOMESTIC EMBARKING PASSANGERS	PERCENTAGE SHARE OF DOMESTIC SERVICES
1954-55	1,36,482	71,201	64,281	47%
1955-56	1,52,587	72,790	79,797	52%
1956-57	1,93,469	74,369	1,19,100	61%
1957-58	2,31,412	73,012	1,58,400	68%
1958-59	2,29,512	66,612	1,62,900	71%
159-60	2,41,062	67,115	1,73,947	72%
1960-61	3,08,396	80,716	2,27,680	74%
1961-62	4,65,832	93,055	3,72,777	80%
1962-63	5,59,021	1,01,225	4,57,775	82%
1963-64	6,86,188	1,23,297	5,62,891	82%
1964-65	8,07,605	1,42,791	6,64,814	83%
1965-66	7,37,741	98,106	6,39,635	86%
1966-67	1,0,12,875	12,1,859	8,91,016	88%
1967-68	11,70,008	1,45,105	10,24,903	87%
1968-69	12,63,270	1,47,004	11,16,266	88%

Source: FLIER, Vol VII, No. 5, May, 1970; p.81.

Passengers carried by scheduled air lines in Pakistan in 1968-69 amounted to 1,263270 of which 147,004 and 1,116,226 in international and domestic sector respectively;(Table 16)shows trends of air passengers growth and percentage share of domestic level in East Pakistan (Table 17).

Table 17. TOTAL TERMINAL PASSANGERS (SCHEDULED PLUS NON SCHEDULED)[1]

Sl. No.	AIR PORTS (EAST PAKISTAN)	TERMINAL PASSANGERS (ARRIVAL PLUS DEPARTURE) 1967-68	1968-69	PERCENT CHANGE 1968 - 69
1.	Dacca	509,445	561,943	10.3
2.	Chittagong	120,255	133,627	11.1
3.	Comilla	7,630	9,104	19.3
4.	Cox's Bazar	5,236	10,210	94.9
5.	Ishurdi	21,148	26,065	23.2
6.	Jessore	87,813	97,490	11.0
7.	Shamsernagar	-	4,288	-
8.	Sylhet	29,775	34,763	16.7
9.	Thakurgaon	-	2,946	-
	TOTAL	2,310,302	2,516,913	8.9

The towns listed in above table are most geographically dispersed centres of industrial and commercial activities. Air Transport thus has an important role to play, and demand is increasing along with the expansion of economic activities. Air Transport benefits from exceptional operating flexibility; which results in a fairly low volume of infrastructure charges. A fairly modest amount of traffic can withstand these

1 PLTEB, Vol. VII No. 5, May,1970, p.81.

charges, which is not case with railway or motorways.[1] Its operation helps to bring the people of the two wings and of different regions closer to one another by providing quick means of transportation and communication to places that were previously almost in-accessible or hard to reach.

The assistance that its services offer to commercial operation and industrial enterprise is self evident. The gross national product of Pakistan during 1968-69 rose to about 5.2 percent, the trend of which has been shown in the following table:-

Table 18. TREND OF GROSS NATIONAL PRODUCT OF PAKISTAN

(Million Rupees)

Sl.No.	Sector	1959-60	Percent Share	1968-69	Percent Share
1.	Agriculture	16,753	53.2	23,201	45.4
2.	Manufacturing Industries	2,930	9.4	6,018	11.8
3.	Trade	3,665	11.6	6,272	12.3
4.	Other	8,091	25.8	15,557	30.5

Above table reveals a gradual decline of contribution of Agriculture but the increasing trend of manufacturing industries, and Trade in the gross national product and this structural change contributes much to the growth of Air passangers through resultant increase in urban population and cities, and through economic prosperity.

Besides, the main characteristics in the rapid development of transport and the factors contributing to this growth Air Transport offers certain specific advantage such as it shortens distance time wise and links the region it is serving with the rest of the world, where as, road network, at best links with neighbouring regions and railway connects it only with a route.

1. Ibid.

The development of Air Transport brings transport near to the important cities, enables a considerable amount of time to be saved and solves the problem of space distance, when, we most, measure distance time-wise. More generally, the traveller is an urbanised individual. Air Transport, related to the technical and economic progress - i.e. urbanization,[1] seems to be continuous and most substantial.

Within the wings, even, there are areas to which access by surface transport is,almost, difficult and time consuming, for example, the riverine terrain of East Pakistan makes air craft the most suitable and economically competitive means of transport.

The internal routes have greatly contributed to the opening up of remote areas. The Dacca - Ishurdi flight, for example, takes only one-twentieth the time taken by the railway(and the Brahmaputra ferry crossing) to cover such distances. It takes a whole day to cover short distances by rail or road which could be done in a few minutes by air. For instance, the 368 miles journey between Dacca and Khulna has been reduced from twenty five hours by surface transport, to 45 minutes by air via Jessore. Now, the whole province is within an hour and a half hours flying time from Dacca.

Apart from economic and social benefits, the knowledge that there are a number of fast daily jet flights linking the two wings separated only by two and a half hours of journey gives a sense of unity and closeness to the people.

Air services are important not only for travel within the country but they also provide a quick link with foreign countries. On account of its good geographical location Dacca is becoming an International Air Port that will connect the west with the orient.

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1 The Characteristic feature for the next 10 years in East Pakistan as it lags behind many countries.

Kurmitola, 6 miles away from the Dacca city, - a big war time air strip, has been selected for an International Air Port where the Air Port Development Agency has already started their operation. The air port will have all modern facilities with 10,500 ft long run way, originally estimated to cost Rs. 11 crores.[1] Now the figures have been revised at Rs. 20 crores. It is now coming according to the revised schedule, and operation will start thereby the middle of 1973. Run ways and Taxi ways have been completed up to the railway line which is being shifted. The contacts for the terminal building has been awarded.

A new site has been selected for planning an international-size Air Port at Chittagong and,also, planning is going on for an Air Port, initially capable of STOL operations at Khulna, which will be later expanded for Fokker and ultimately for Boeings. A number of STOL ports are going to be constructed in East Pakistan.

Due to the restriction of number and movement of passengers and products by air, Civil Aviation has been placed lower in the priorities of the planners than the development of road and railway though the infrastructural cost of building up roads and rails in these areas are much more than that of providing Air Service.

East Pakistan must keep up the progress of Civil Aviation for economic justifications both for the International as well as Domestic/Interwing operation. The domestic operation require an enlargement of the fleet. The major problem is finding the financial resources for modernising and expansion of the fleet as well as of Air Port facilities. An air line in its own enlightened and long term interest has to ensure highest possible standard of safety and efficiency.

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1 PIER, Vol. VII No. 5, May,1970, p. 31.

CHAPTER VI

ROADS & HIGHWAYS

CHAPTER VI

ROADS & HIGHWAYS

Before the middle of the 16th century East Pakistan had practically no roads. During the Muslim period, Shershah built the famous Grand Trunk Road that connects Delhi with the Eastern Province. It enters in East Pakistan through Benapol in Jessore district.[1] The Mughals built a number of roads passing through East Pakistan. Some of their remnants were shown by Rennel's in his map in 1779 (Map 10). Most of them, however, disappeared as a result of neglect and river action.

East Bengal, the land of golden fibres and the granary of the Indo-Pak subcontinent used to feed the industrial centre at Calcutta during the British period. India like other colonial countries became markets for the products of the various industries in Great-Britain. Systematic planning or permanent improvement of roads, which is an integral part of economic development of a country, did not receive adequate attention. The peoples demand for a link by road or rail between Dacca and Aricha never received any favourable consideration, only to protect the vested interest of foreign capital invested in the steamer services. The jute growers of East Bengal in absence of any reasonable communication system had to sell their produce intbe local market at any price which traders chose to offer whereas the long length of costly concrete road constructed from Bewpia to Bagrakol through sparsely populated area in the District of Jalpaiguri and Darjeeling with the main object of connecting the rail head at Siliguri for the interest of the Planters.[2]

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1 Chowdhury, A.R; Road Development in East Pakistan Past and Present; Bullatin: Highways in East Pakistan(a great decade of development, 1958-1968; Roads & Highways Directorate, East Pakistan). p. 19.

2 Ref: Khan, M.A, Road Development - In progress; Building and Roads Bulletin Vol I No. 2, February - March, 1958. p. 1.

Before partition an unmetalled road from Dacca to Sealo(on the east bank of the Padman opposite to Goalundo) connected the head quarters of the Manikganj sub-division with Dacca and Goalundo.[1] But it did not serve the purpose effectively.

Chittagong was connected with Dacca by a road that stretched northwards along the coast, branched at Feraungarganj in the direction of Lakshmipur in the district of Noakhali and then led to Comilla, Dandkandi and Dacca. This unbridged road, impassable in the rainy season was used for the military purpose.

To the south there was a postal runners [2] track to Ramu, which led from that place through Dariadighi to the Ramu river, and thence along the sea shore to Teknaf, with a branch line running from the Ramu to Ukhiaghat in the Naf Estuary. There were also portions of roads from Chittagang to Bohmari on the Sangu river. In 1854-56, [3] the Dacca Teknaf Road was remodelled as part of the line from Calcutta to Burma via Dacca and Chittagong.

The Rangarh road runs north East to the border of the district, the Hill Tracts road branching east from it at Hat Hazari. Ramu road connects Ukhiaghat with a branch road to Cox's Bazar. The Chandpur road being more or less parallel to, and west of the Arakan road; Juldi road connects Chandpur with the Arakan road.

In the Northern part of the Province, Bogra, Dinajpur, Chilmari and Phulchari had moderate road communication. The Ganges - Darjeeling road used to pass through Dinajpur town and the main road connecting Dinajpur with Purnea, Rangpur, Bogra, and Malda. Dorga was linked with Rangpur, Dinajpur, Sirajganj, Natore and Sultanpur. A raised road from Pabna to Sara could, however, be used throughout the year; and a metalled road 2½ miles[4]

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1 Eastern Bengal and Assam Gazetteers, 1901; p. 306.

2 East Bengal District Gazetteers, Chittagong, Chapter X; p. 129.

3 Ibid; p. 130.

4 Op. Cit; EBAG, p. 288.

in length used to lead from Pabna to Hajitpur on the Padma. Most of the Thanas were connected with Pabna by raised roads. The most important road from Rajshahi district was leading from Rampur-Boalia northward to Naohata via Baya, eastward via Nator to Bogra and south east to Pabna, northward to Malda through Godagari and northward from Godagari to Dinajpur.

Faridpur District town was connected with Jessore, Rajbari, and Bhanga and from Kanaipur to Pangsha. Barisal had a road link with Patuakhali, Banaripara, Nabagram, Nalchiti and Jhalakati. Another road used to run from Perojpur to Salpleja via Tushkhali. All these roads, except a few miles only, were Kutcha, mostly, impassable during the rainy season.

The woeful inadequacy of roads in this part of the subcontinent led to the stagnation in every sphee of activity- agricultural, industrial, commercial and social .Mr. A. J. King [1] felt to correct this scattered and uncoordinated practice for construction and recommended to bring every part of the province within 5 miles of either a railway, a steamer route or a road.

After independance, the country felt the need for making all weather roads which can not be substituted by rail and water transport for trade and commerce, Defence and Civil communication, economic and Social Development. Rail and water transport need supporting road transport for movement of men and materials.

The cities and the urban areas are fed by villages in the neighbourhood. The villages and the suburbs also provide excellent markets for small industrial products. It permits flexibilities, speed and afficiency in carrying cargo over short distance.

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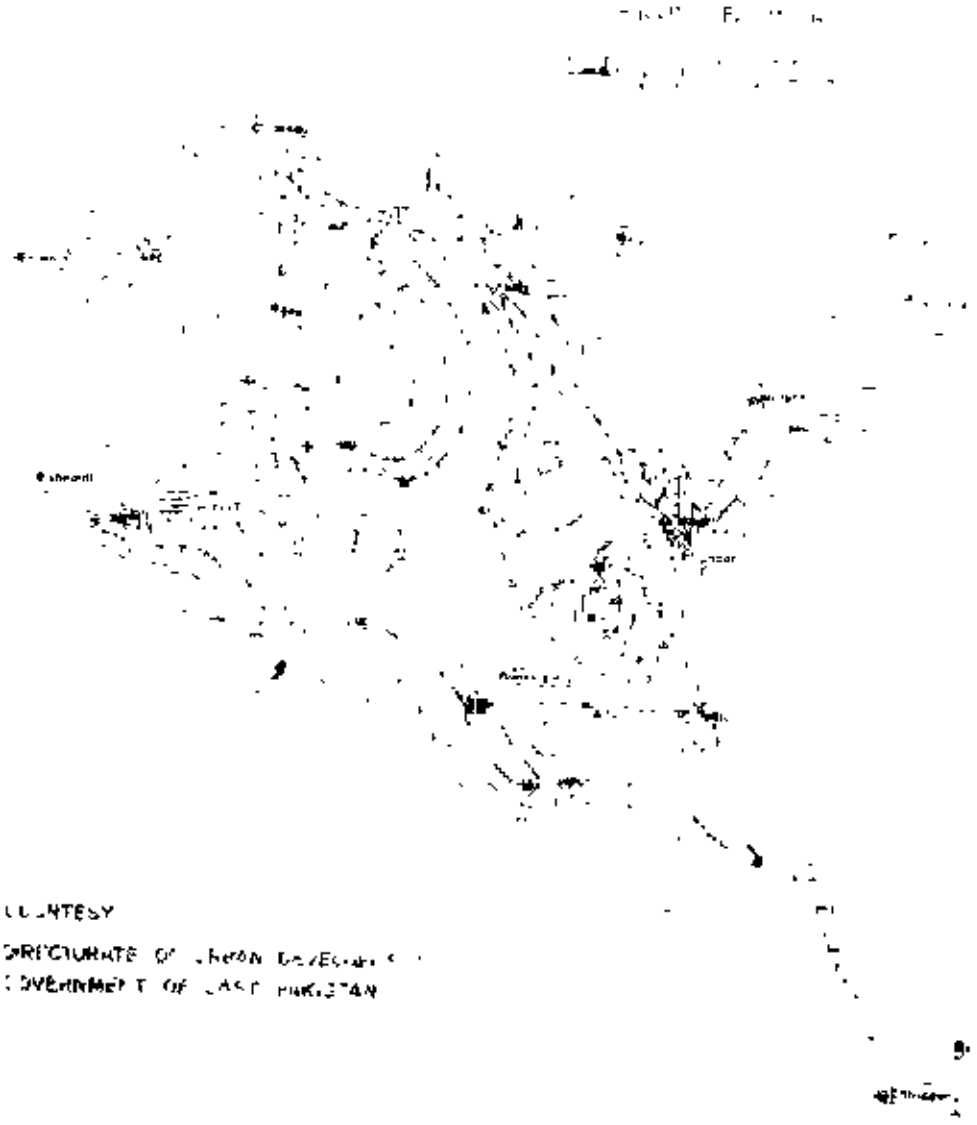
1 King, A. J; BE; (Superintending Engineer,1930); was appointed by the Govt. of Bangal as speial officer for Road Development Project to prepare a programme of road develop inelnding major Bridges.



COURTESY

DIRECTORATE OF URBAN DEVELOPMENT
GOVERNMENT OF EAST PAKISTAN

MAP 1

Road development in East Pakistan is nothing but the patch work to connect the isolated existing roads that served the local trade centres within limited range. There roads were mostly unmetalled and impassable during the rainy season. Much of these newly constructed road follows the general alignment of existing roads or cart tracks. However, it was found that existing roads, although in poor condition, generally follow higher ground and connects the major centres of trade.

After partition, the need to connect the district headquarter with the provincial capital at Dacca and to connect sub-division headquarters with that of the Districts. The Calcutta boun/traffic now needed to be diverted towards the previously neglected seaport at Chittagong and Khulna, the growing industrial complex, near the port at Ghalna. Gradually, the trunk roads were connected by the feeder roads and thus most of the Thana headquarters got direct road connection. However, the basic arterial system has been established (Map 12). Secondary and feeder roads are still needed to complete the system by connecting all of the thana headquarters and trade centres to accelerate trade and commerce.

Dacca-Aricha road was constructed to connect North Bengal and Khulna via Nagarbari and Goalundoghat respectively, by modern ferry system. It takes only about 9-30 hours to reach Khulna by coach service at the cost of Rs. 25.00 only(Appendix 5).

There are an unusually large number of markets along this route. Of these ten to twelve are large. In some centres such as Dhamrai, Saturia and Sabhar, 15,000 to 20,000 people[1] assemble on a bi-weekly market day.The rest are medium and small sized markets. Most of these trade centres, unlike the hats and bazars in other districts of East Pakistan, are not directly on the road-way because of its recent development. However, gradually,

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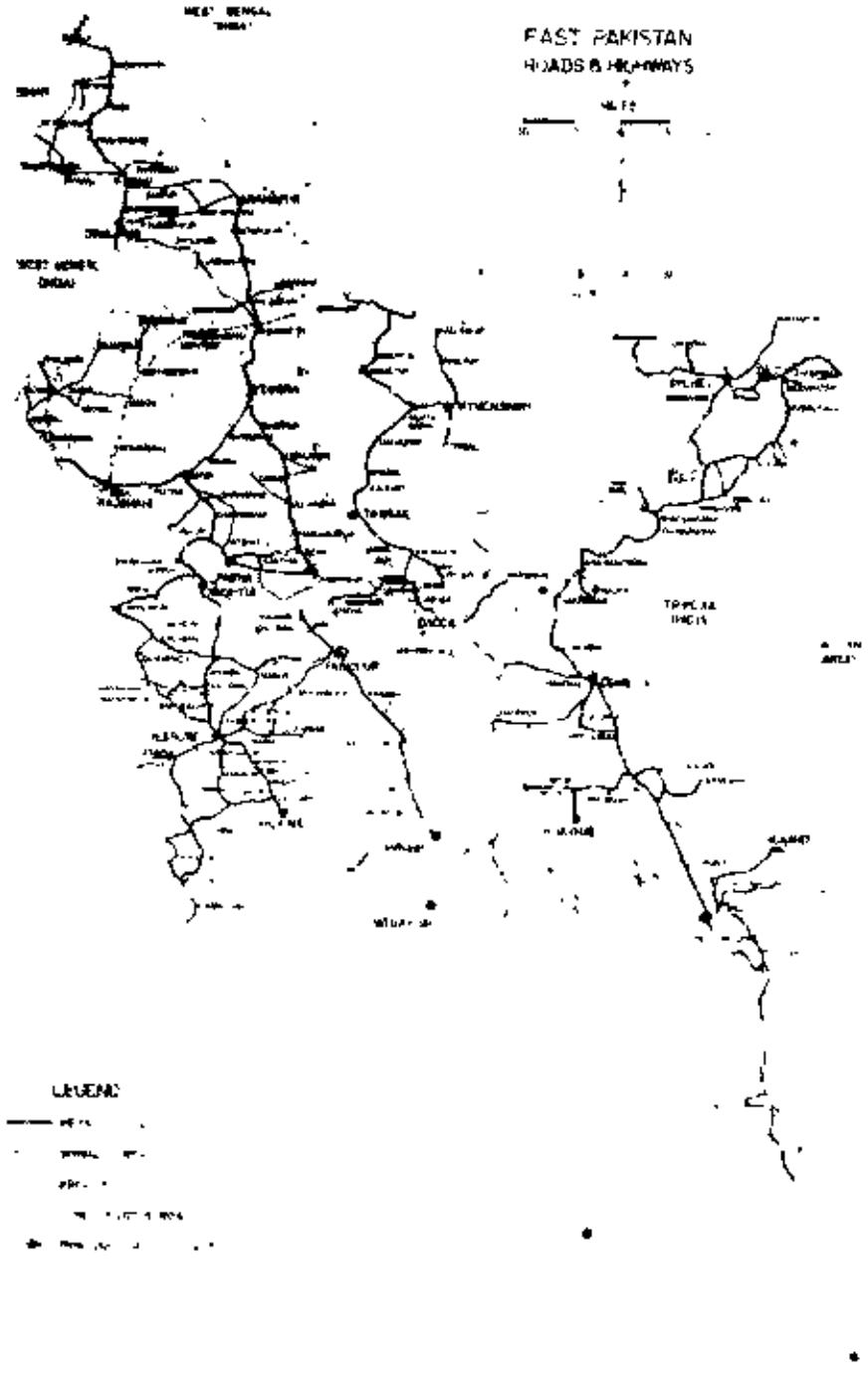
1 Dacca-Aricha Road, Vol. I; (Economic & Engineering Feasibility, Report, Ammann & Whitney International) p. 8.


EAST PAKISTAN
ROADS & HIGHWAYS
DACCA
LEGEND

it tends to show a communication pattern which bears relation to the present roadway.

Trade centres develop along this road and the early centres, such as Savar, that developed on the river bank is gaining momentum and changing its pattern (Map 13) with the development of Dacca-Aricha Highway. Dacca city,now, tends to expand along this road. Physiognomy of Savar is gradually changing to a new town-ship; university, diary farming, radio broad casting centre and other non-trading activities demand various institutions which are now being developing. Manikganj a growing trade centre stands on this road.

New centres, Arichs, for example, or Nagarbari are gaining such potentialities for rapid development because of their terminus situation where from North Bengal as well as Industrial Town Daulatpur and Khulna have been connected by modern ferry services, (Map 12). Such as the case with Daudkandi on the Dacca-Chittagong trunk road via Comilla. Comilla, because of its unique position* on this highway, has become one of the most developed district headquarters in the province.

Goalundo, the important riverport as well as the rail head has been connected with Khulna, the second most important industrial centre of East Pakistan, situated at a distance of 25 river miles from Chalna Port and functions as an assembling centre of exportable commodities and distributing centres of the non-agricultural commodities consumed by the people of this region.

A number of commercial trading centres flourish along the roads. Khulna, Daulatpur and Kapura being well connected with the hinterland by rail, road and water services, an important industrial complex is growing along the Jessore-Khulna road. Other important trade centres that flourish along this section of the road are Shirosani, Fultala, Basundia. A large quantity of jute is marketed here to feed the industrial complex and rice, pulses and vegetables for Khulna, Jessore, Faridpur and the northern districts of the province.

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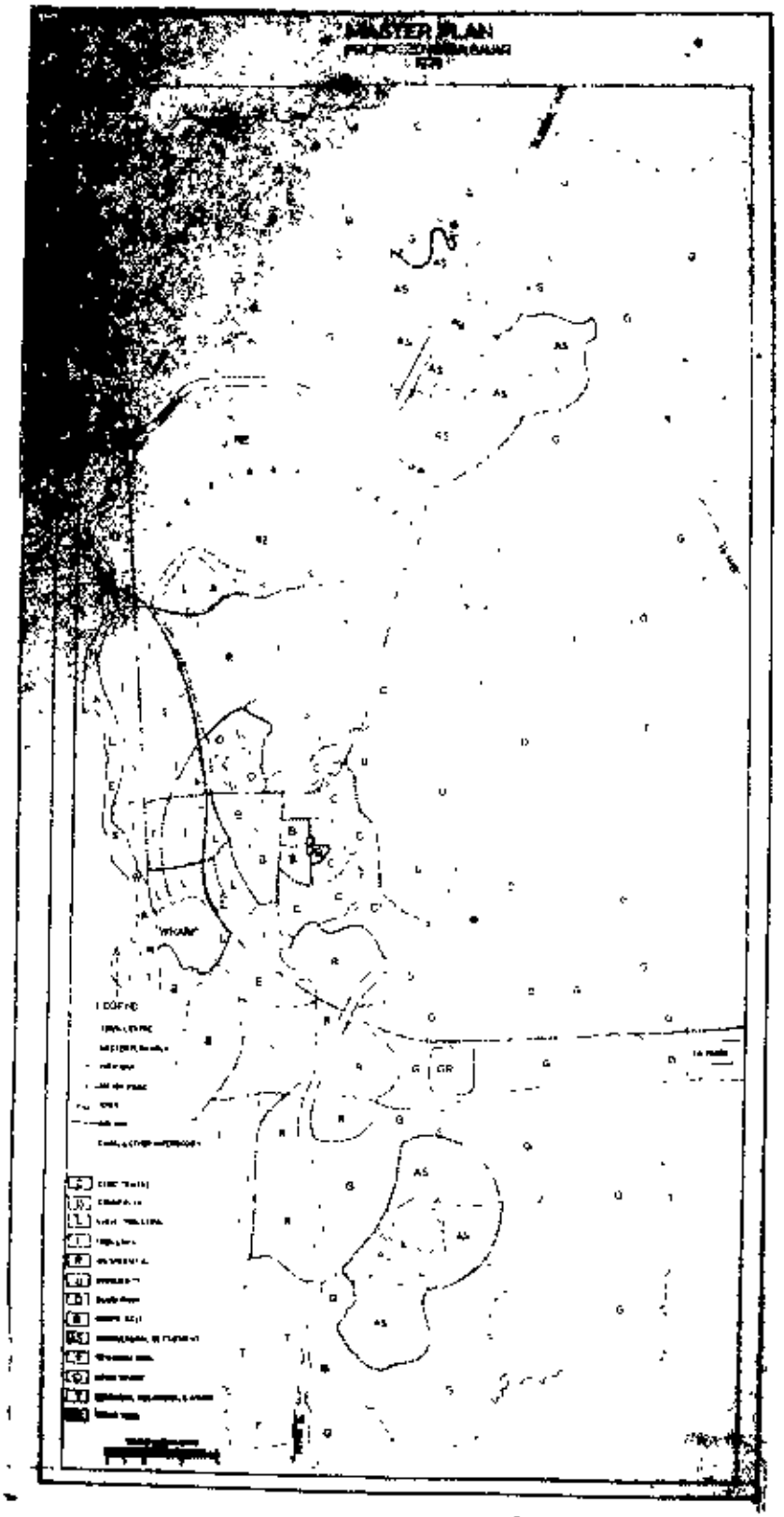
* Vide; p. 85



MAP13

Jessore-Jhenida section of this trunk road runs through such important trade centres as Barobazar, by passes * Kaliganj and Jhenida and meets Jhenida-Chuadanga-Meherpur road and Jhenida-Kushtia road; thence turns towards Faridpur.

From Kaliganj, another road runs for Jibannagar, via Kotchandpur,and opens up the vast sugar cane area. As a result of which, there two centres got tremendous momentum. Mobarakganj Sugar Mills have been installed in Kaliganj to meet the local sugar cane growers demand.

Seven important markets along the Jhenida-Faridpur section to be mentioned are Gopalpur, Alamkhari, Magura, Kasarkhali(a large jute trading centre), Madhukhali, Bagat (a small daily Bazar) and Kanaipur.

There are some ten hats and bazars on the Faridpur, Muhammadpur road of which Kanaipur, Kadari, Goshpur need mentioning. Boalmari, an important trade centre about 5 miles of the Faridpur-Muhammadpur Road.

From Jhenida another road runs northwards Kushtia the first Market, Bhatai Bazar, about 10 miles from Jhenida, supply agricultural products to Jhenida-Jessore, Daulatpur, Khulna and, sometimes, to Chandpur, mostly, by truck and carts. Goraganj and other trade centres to be mentioned are Harinarayanpur, Alampur, and several small centres between Kheramara and Kushtia. From Kheramara, it crosses the Ganges by the Ferry service and reach Ishurdi which is again connected with Pabna by the improved roads.

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* By-passe Ready Shops and other business activities along the main road causes traffic delay due to congestion, To avoid this problem by-pass roads have been constructed in such centres to enable thorough traffic move freely.

Jessore - Chuknagar - Satkhira, Jessore - Narail, Barisal - Faridpur roads serve vast area for the development of trade and commerce accordingly few trade centres developed along these routes. But the development is, practically, nil along the Jessore-Narail road. Narail a subdivisional headquarter, favourably situated on the river bank, Chitra, could not develop, probably, because of the tremendous effect of polarisation exherted by the nearby industrial complex along the Jessore-Khulna road. On the other hand due to the opening of Jessore-Chuknagar-Satkhira road, Satkhira has become a potential centre for economic and trading activities.

Roads and Highways in the west of the Ganges are the important road link in the province. They are the only road outlet from the industrial complex at Khulna and Daulatpur and serve the export and import traffic between Khulna - Chalna port. These roads are also the out let and source of supply to both the farmers and to the industrial complex in the area. They link the region with the rest of the province, serve the export, import trade and link the rural and urban area.

It is interesting to note that feeder roads connect it every one to ten miles along the route. These Kutcha roads link the Highways with the villages within a radius of about five miles. Some of them are motorable during the dry season. Horsedrawn Hackney carriage, Bullock-carts and the like are the main means of transportation. Car, Trucks, Scooters and Buses ply along the roads regularly.

Such as the case with the Highway system in north Bengal where the major roads converge at Nagarbari on the west bank of the Jamuna. Nagarbari-Bogra-Rangpur-Dinajpor road has been extended upto Titalya via Thakurgaon an important trade centre in the north. It serves Sera, Raiganj, Sherpur, Bogra, Gobindganj, Rangpur, Saidpur meets Dinajpur Thakurgaon road which extends upto Titalya via Pachagarh. Tarse, Phulchari, Gaibandha, Dewar, Ruhea,

Pirganj, are some of the important trade centres that connect the Highway by means of feeder roads. Saidpur, an important trade centre and the Pakistan Tobacco Experimental Farm served by this road need mentioning.

Another road runs from Kashinathpur,(three miles east of Nagarbari) to Pabna, then turns north to Natore from four miles west of Lahardi, by passes Natore and turns west to Rajshahi on the north side of the town and proceeds west to Godagari.

Besides, trading and other commercial facilities, opening of these roads have minimised the travel distance from Dacca to Rajshahi to a minimum of about 6 hours than that of by rail (Appendix V).

45520

Dacca - Daura - Daudkandi road connects Chittagong via Comilla. Laksham, Feni, Maijdirhat, Chittagong are the import centres served by this road. Chittagong connects Teknaf at the extreme southern tip of the province,* opens up the vast forest resources area and thereby enhance lumbering and fishing trade.

Comilla is now, well connected with the vast area of Tea and Bamboo resource in Sylhet, capital and the main sea port of the province and one of the river port at Chandpur where from trade is being carried to different part of the region. Various trade centres that are influenced by various roads and highways connecting Comilla town are : Laksham, Feni; Majiganj on the Comilla Chandpur road; Matlabbazar, Kachua and Faridganj via Chandpur; Hajiganj on the Daudkandi-Comilla road; Hasra; Burichang; Banchharampur, Habirajar, Barail and Nasirnagar via Brahmanberia; Laksham, an important railway junction on where from rail and road run for Comilla parallel to each other. Kasba, another trade centre depending on the railway; Brahmanberia, Debidwar, Nurudnagar. Ashuganj, Shaistaganj, Nabiganj, Khulna, Chhatak, Sunamganj are the important trade centres within Sylhet District.

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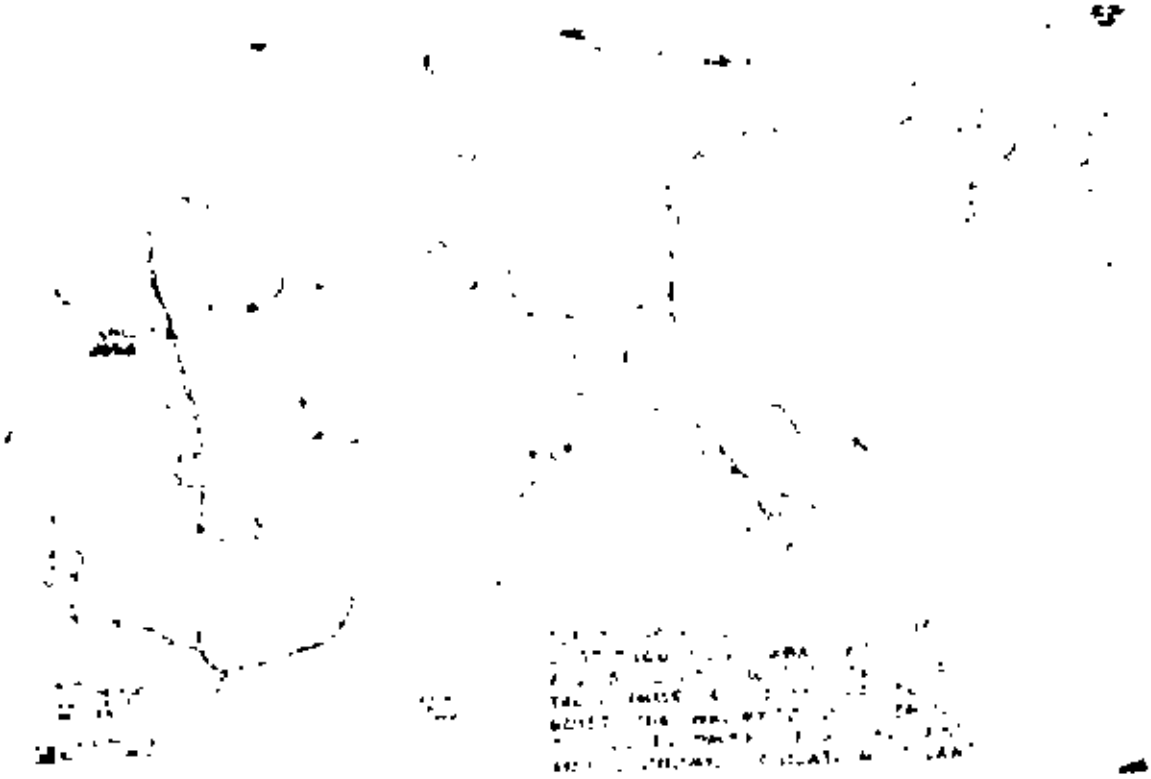
* Thus a Trunk road connecting extreme northern & southern corner of the province has been developed.

EAST PAKISTAN
EMERGING URBAN AREAS



COURTESY [illegible] GOVT OF EAST PAKISTAN

MAP 14

There is no road connection between Sylhet and Mymensingh. Dacca-Mymensingh road links Mymensingh with the provincial head quarters and opens the Madhupur Forest for lumbering. Kishorganj, Isherganj, Durgapur, Tangail, Nirjapur, Phulbaria, Jamalpur and Netrakona are the important trade centres to be mentioned.

Dacca city tends to expand along the tentacles of its road networks. With the development of transportation system resources are tapped from the surrounding region, necessitated processing which leads to the development of industrial complexes. Due to the growth of industrial complexes new urban areas such as Joydebpur, Tongi, Sabhar, Demra, Kamchan, Ghoraal, Naraingdi are emerging which calls for their immediate planning to guide the growth and to control the development for rational and economic utilisation of land ((Map 14).

Jhenida, Kaliganj, Kotchandpur and such other centres are now developing at faster rate because of the road development. Only railway can not help develope a trade centre. Safdarpur is a glaring example. The centre could not develop because of lack of road and water transport with the meagre frequency of rail services. But on the other hand, motorway can develop a potential trade centre - Khalishpur in Jessore and Maheshdah for example, or Harinarayanpur in Kushtia district have neither rail nor do they have water communication.

Transportation routes do not always help developing a trade centre because of other conditions Narail, a subdivisional headquarter's well connected by water and road transport services, could not develop because of its nearness to the Industrial and Commercial complex at Daulatpur and Khulna. Rail, Road and Water transport that run parallel to each other do not effect others. Kosapara and Daulatpur, bestowed with all these facilities, developing at a faster rate and influence the near by centres along

Jessore - Khulna road and demand more transportation facilities to serve them.

EPRTC* Coach Service and Inter District Transport Carrier, now, revolutionising the way of life, trade and commerce of the area opened by road net works. Trade develops along the roads and highways that brings the remotest corner accessible. Now it is possible to go to Dacca from Khulna by the modern Coach Services, a journey of about 9-30 hours at the cost of Rs. 25.00 only.

Unfortunately, rural areas have still been neglected. It is estimated that 95 percent of the rural road system are Katcha tracks and is not suitable for the use of motor vehicles.[1] Bullock Cart, the principal means of transport carry almost entire produce to the market and seeds, fertiliser etc., to the villages. The impact of transportation improvement is already resulting in the change in pattern of agriculture, trade and commerce in some parts of the country where greater emphasis is being laid on vegetables production and other cash crops instead of foodgrains.

There are a number of instances where improved transport has, almost, revolutionised the socio-economic conditions of the rural communities. Villages located near a pucca road are more progressive in their out look and adopt new ideas and techniques is farming and trading. To carry development far into the interior, to convert each village to the market.

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* East Pakistan Road Transport Corporation, an autonomous body.

1 Hashmi, T.H. Development of Road and Road Transport (Government Publication) p. 38.

C H A P T E R VII

TRADE CENTRE CLASSIFICATION

CHAPTER VII

TRADING CENTRE CLASSIFICATION

The network delineated in the preceeding chapters is the main frame of internal trade routes. The important fact about internal trade is that it is more important to the village economy than external trade. The opposite holds true for the economy of the urban areas.

It is interesting to note that most of the growing centres in East Pakistan are river oriented. With the advent of railways and water ways their pattern has changed considerably. Some centres have grown and depend purely on the railway, Saidpur for, example, or Saiderpur; on the roads and highways such as Daebailer Bazar on the Jessore - Jhenida road which has neither rail nor water connection. Some early centres, that flourished on the bank of the river, decayed due to the silting up of the river bed but tend to revive with the introduction of either rail or road system. Ketabandpur in this case is a glaring example.

With the development of better transportation facilities some centres develop rapidly, attract non trading institution such as administrative, educational and such other institutions that ultimately lead to the status of urbanity.

Those fortunate centres bestowed with rail, road and water communication facilities rise to the status of commercial or industrial complex which we find along Khulna road where rail, road and water run parallel to each other(Map.15). Instead of giving long exhaustive description about the important internal trade centres some of the information is presented in Appendix VI. An attempt needs to be made for co-relating facts in such a way as to bring them into fore, from a particular view point. An ideal classification, therefore, would have been possible with averaging the fact into a regional pattern the fact which disclose the collaboration of man and environment in trading.

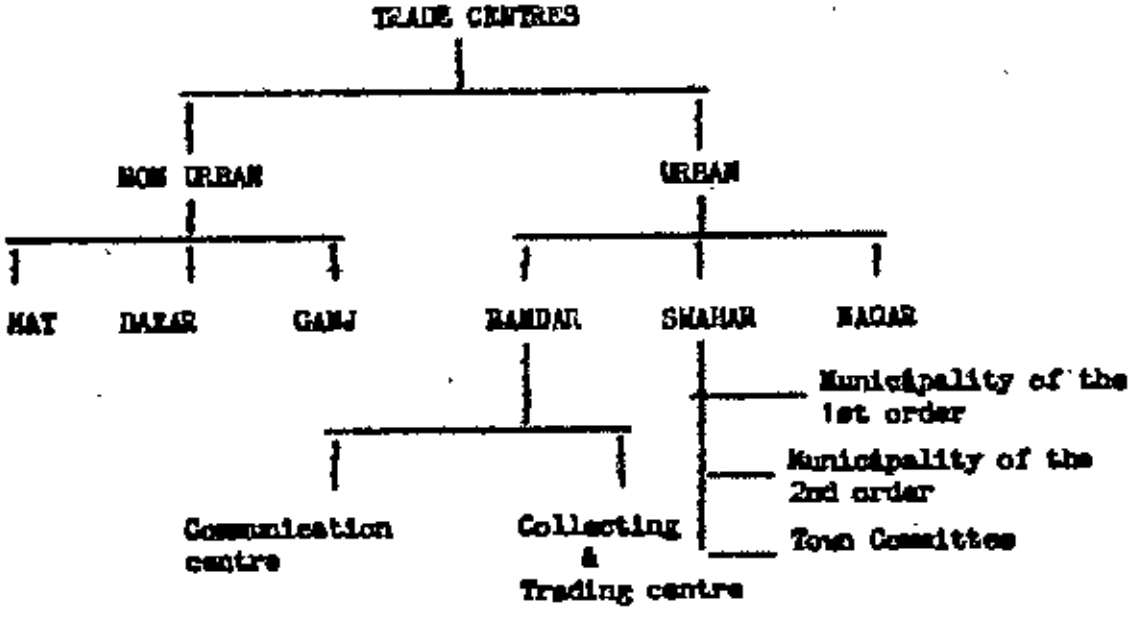
From our previous discussion it reveals that Topography dictates the direction and pattern whereas the development of roads and railways shapes and guides the physical development which is, again, specially in the case of East Pakistan, determined by the physical condition. It is planner's ingenuity to co-relate both of these physical and cultural phenomena in harmony with social and economic needs.

' Harris ' has classified American Cities by adopting functional unit as the basis of his quantitative analysis and employed different ratio for different functions in order to evolve a meaningful classification. The data have been collected from various occupation and employment figures available from the census of 1930. Cities with 60 percent employment in manufacturing cities, while, cities with only 20 percent employment in whole saling are classified as the whole saling district. For mapping metropolitan districts are taken into account rather than political districts. He classified nine types of cities according to their functions and gave a symbol of letter against each of them.

In this chapter an attempt has been made to classify trade centres on the basis of their functional efficiencies. Due to lack of sufficient data and other related information the author has taken the banking services as the guide to his classification. Trade centre is directly related to the transaction of money and banks are the most important institutions that deal with the present transaction. Again, banking service is controlled by the Private Organisations who are motivated to earn profit. Therefore, a network of banks are established all over the province, even into the remotest bazar where they feel profitable.

Trade centres may be urban or non-urban. In this emerging era of urban development many trade centres, because of their favourable location and other advantages, develops rapidly, attract other institutions and ultimately, becomes an urban centre. Therefore, this factor, also, needs consideration.

However, considering all these factors an attempt has been made to classify trade centres into two broad groups -'urban'and'non-urban' and then into sub groups according to their ranks and sizes. (as shown below).



Broad grouping has been done with those having the ranks of urban centres and that of the non-urban centres. Non urban trade centres comprise of small village Hat, Bazar and Ganj. Urban centres into Bandar, Shahar and Nagar. Bandar has been re-grouped into Communication and Collecting & Trading centres. according to their functional importance. Shahar has been classified as per BDLG[1] into three broad groups, such as:- i) Municipality of the 1st order, ii) Municipality of the 2nd order & iii) Town Committee.

Rank, Size and Distribution of Principal Trade Centres in East Pakistan:

Rank, Size of Principal Trade Centres in East Pakistan, thus classified have been shown with areal'Distribution' in Map 15.

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1 Basic Democrates and Local Government; handout, 1971, p. 1.

HAT : Trade centres of the 1st order; held bi-weekly, in most cases weekly, serve the local community within a radius of about 1-2 miles where the farmers and the artisans go to sell their products and to buy daily necessities. Shops are few and far between. An important Hat may have a permanent shop or two. These Hats are so widely scattered over the Province that a cultivator can invariably walk to one of them every day within five or six miles from his home. The Parias[1] and the Paikars[2] assemble here to purchase agricultural products and to sell salt, kerosene, match boxes and such other essential commodities. With or without communication facilities. Bullock Carts or Boats are, usually, the principal means of communications and are isolated from the rest of the world. Kaipur Hat in Kushtia district may be cited as an example.

BAZAR : Trade centres of the 2nd order; stands on the point of either of the communication facilities with permanent shopping facilities for daily needs of the villagers. Tea Stalls, Tailoring Shops, Sweetmeat Shops, retaill shopping and sometimes pucca houses of the rich people are the general scene of the Bazar. These elements form a small square where Hats are held bi-weekly.[4] Parias bring the commodities to sell to the Aratdars[3], and the Aratdars sell these to the Beparies for export to other regions(Nara Bazar on the Jessore Jhenida Road or Saifdarpur Bazar on the Jessore-Darsana railway section can be mentioned as examples.)

The Bazar communicates the villagers with the outside world where the people not only go for business but also to amuse them. Boats or Motorvehicles are the principal means of communications. It may have banking facilities or not. But generally, it does not exceed one with the exception of few cases. Retail business predominates here.

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1 The man who purchase commodities for the Aratdars.

2 Wholesale Dealers who move around to buy or to sell commodities from one place to another.

3 Businessmen with permanent Arat(Shop like structure where commodities are purchased), who lend money to the Parias to purchase commodities.

4. These permanent establishments provide a base for the daily bazar whereas most of the Hats are held weekly or bi-weekly.

GANJ : Trade centres of third order. This class of trade centres owe their existence largely, to local marketing, trade and transport. Here the Emporiae assemble the resources from its hinterland through local Hats & Bazars. They are mainly rural in character and mostly serve as collecting centres for local produce and distribute some consumer goods and necessities of life which are not on hand in the neighbourhood. Whole sale marketing predominates over retail shopping. Here the shopkeepers from different Bazar's come to purchase whole sale goods for their shops in local Bazars. Generally with banking services the number of which ranges from two to four. In some cases may be five. In some instances administrative centres fit into these semi urban areas. Many such centres are also survival of the past and there is very little that is new about them. Most of the Ganj's are river oriented; some have grown up during the last few decades, with the development of better transportation facilities and agricultural production, but developed little modernity. There are many examples, such as Kaliganj(Jessore), Nagiganj(Comilla).

BANDAR : Trade centres of fourth order; gains the status of township; trade and commerce flourish. Other institutions associated with trading and non trading facilities develop but trading activities are, all the more, the predominating factors. Banking facilities, generally, ranges from two to six, sometimes more as in the case of Chandpur and such other centres bestowed with excellent communication advantages through river, rail or road transport, have, thereby, acquired other important functions whose ranks and sizes, as a rule of this classification, overlap with that of the Shahar's. Therefore, banking facilities do not fit to classify such centres. So, communication facilities have been taken in to consideration and have been shown in the Map 15 by conventional signs.

a) Communication Centres: Because of that unique communication advantages some centres remain primarily notable as Communication Centres, e.g., Saidpur, Parbatipur, Lalmanirhat, Sirajganj, Ishardi, Chandpur, Santahar, Barisal, Jhalakati and Bhairab Bazar.

b) Collecting and Trading Centres: Mostly, of recent origin, with the expansion of Jute cultivation and its collecting trade around the last

sixty years, around which other distributive and market facilities have grown up. Bhairab Bazar, Kishorganj, Jamalpur, Netrokona, Bajitpur(Mymensingh); Mumshiganj and Naraingdi(Dacca); Brahmanbaria and Chandpur(Comilla); Gaibandha, Phulchari and Domar(Rangpur); Madaripur(Faridpur) can be grouped in this catagory.

SHAHAR: In some urban centres, administrative and other urban functions predominates over Industrial and Trading facilities. Such centres have been termed as Shahar. Shahar has been classified into 3 sub classes, such as, a) Municipality of the 1st. order, b) Municipality of the 2nd. order and c) Town Committee, on the basis of the DDLG's procedure with the exception that the urban centres with commercial and industrial activities have been excluded. Here, administrative, cultural and other non-trading activities predominate over trade and commerce.

a) Municipality of the 1st order: Those Shahar's whose yearly income exceeds Rs. 30 lakhs have been termed as Municipality of the 1st order, e.g., Rajshahi, Sylhet, Comilla. This class of towns, usually, have banking service that ranges from 10 to 20 numbers as well as with such other banks that deal with foreign exchange.

b) Municipality of the 2nd order: These Shahar's whose yearly income ranges between Rs. 5 lakhs and Rs. 30 lakhs. The number of banks that serve the centres ranges between 6-9, e.g.,Thakurgaon, Tangail, Manikganj.

c) Town Committee: Towns having an yearly income of less than Rs. 5 lakhs, generally with 1-2 banks have been termed as Town Committee, e.g., Kotchandpur, Maheshpur, Narail etc.

BAZAR: has been termed for those environs where at least 5 banks deal foreign exchange; industrial and commercial complexes develop and

inland and overseas trade assemble for manufacturing purposes. City of 1st order develop with multipurpose function but industrial and commercial activities predominate with the exception of Dacca the seat of the provincial headquarters, that guide and regulate inland and overseas traffic, trade and way of life, e.g., Chittagong, Dacca, Narayanganj-Adamjee Nagar and Khulna-Daulatpur complexes.

Most important feature to note in this study(Map 15), is that there exists a series of hierarchy in the province ranging from Hat to Nagar. Increasing size of the trade centre is directly co-related to the increasing function. Due to their different performance, they depend between the same hierarchy and between different hierarchy. Bigger centres are found to include all the functions of the smaller centres in addition with some other distinctive functions of their own. But the distribution of such centres do not fit'Christaller's'Hexagonal Theory', neither do they fit'Zipf's'Rank Size Rule!

Christaller states that city should be at central location of the area. There is no relationship with Hexagonal pattern and even the circular shape, for example, the growing industrial complex along the Jessore-Khulna road rises to a linear pattern of development.

He, again, mentions that the bigger the size of the city the bigger the tributary area, conversely the bigger the tributary area the bigger the size of the city. It is, also, not true in the case of East Pakistan. Transportation plays tremendous influence over the surrounding areas than the larger centres; Shirajganj, Chandpur may be mentioned, as for example. It is clearly found that the physical development in East Pakistan takes a definite pattern along the main transportation routes.

According to Zipf cities of equal sizes must be equidistant from the third which is not found in the case of East Pakistan. Both the Christaller's model and Zipf's rank size rule admit that as the urbanization advan-

ces the medium size of the city diminishes and accumulated to the bigger size city-- bigger cities begin to be bigger at the cost of smaller cities. It is partially true in the case of East Pakistan where urbanization affects non-urban centres which are mostly, neglected with the exception of few fortunate centres that incidentally fall within the range of other development. Urbanisation drains human resources from the non-urban areas, and consequently,remain backward. Areas having better transportation facilities develop rapidly.

From his previous discussion, the author finds that physical development in East Pakistan takes place along the main transportation routes and the direction and pattern of different modes of communications are dictated by the topography. Water ways, rail ways and roads & high ways are primarily north - south bound. Dacca - Aricha, the only east -west traffic road, exhert tremendous impact for the development of not only of this region but also the division of Rajshahi and Khulna.

Development of early trade centres along the banks of the rivers are the striking feature in East Pakistan. Here the river,as an agent, serves for the renewal of soil for better agricultural products as well as a transportation agent for the movement of such production. It implies that river system plays an important role for the development of early trade centres. With the advant of railways and motorways, trade pattern of this province has shown a gradual change. New centres began to emerge along the main transportation routes, vast areas are now being gradually opened up, centres having the privilage of all the modes of transportation facilities develop rapidly from their initial stage through a series of successive stages to an ultimate form, and their functional development demand the development of roads which shape the formal pattern of the centre.

C H A P T E R VIII

C A S E S T U D Y

(Rajshahi-Comilla-Chandpur)

CHAPTER VIII

C A S E S T U D Y
(Rajshahi-Comilla-Chandpur)

In different types of town, different use of land is possible due to various types of functions and the functions are mostly defined by the regional and geographical influences Basic forces involved in this process are economic, political and social condition of that area.

In this study the author has taken 3 different towns - Rajshahi, Comilla and Chandpur each of which represents its distinctive locational importance - such as cross road of rivers in the case of Chandpur, or the effect of linear but shallow river as in Rajshahi; lesser commercial importance of Gumti river in Comilla, but unique location in between the busiest Dacca - Chittagong highway is the glaring example for the Development of Comilla town and justifies the effect of trunk road that influences the economic and social condition of the town.

As per location is concerned, the shallow bed of the river Padma, nearness to the Indian border, insufficient industrial raw materials, remotest in terms of the accessibility to the capital city of the Province- the development of Rajshahi town is purely political. After partition Rajshahi gained the status of the divisional headquarter comprising 8 districts of North Bengal and this is the only consideration for which the highest seat of learning- the University of Rajshahi, was set up, which exherted the polarisational effect for the establishment of Medical College & Hospital, Engineering College and other institutions. Road communication developed to connect the capital city and other district towns.

Chandpur is an up and coming Commercial-Industrial port town with geographical location as its chief asset. Enjoying roads, rail and river

transport links with all major centres of economic activity in the Province Chandpur has an assured commercial future.

East Pakistan shows the sudden increase of population in the decade 1931-41 with a sharpfull in the next. The respite gained in the 1941-51 decade was followed by actual increase of 20.9%.[1]

In the decade 1951-61 the growth of population in the various parts of East Pakistan has obviously been uneven. There has come a slowing of the rate of increase in the more populous parts as in Comilla and an abrupt increase in comparatively low density of population as in Rajshahi. Chandpur, because of its commercial-industrial economic base and important inland port facilities, offer favourable employment opportunities and draws huge army of population from different parts of the country.*

' This is an welcome trend; possibly it was inevitable since in the absence of large scale urbanisation, the rural population was nearing the saturation point. Low density districts growing fast and the high density districts growing comparatively slowly'.

Table 19. PRESSURE ON ALL THE RESOURCES OF THE AREA[1]
&
PRESSURE ON THE SETTLED LAND AREA

(1) DISTRICT	(2) POPULATION 1961	(3) AREA IN SQ.M.(including SQ. M. water bodies & forests)	(4) POPULATION DENSITY/ SQ. M.	(5) AREA IN SQ. M.(excluding water bodies & forests)	(6) POPULATION DENSITY/SQ.M.
Rajshahi	2,810,964	3,654	769	3569	788
Comilla	2,388,906	2,594	1,693	2446	1,794

1 Khan, S. A.; Existing Land use Analysis: Rajshahi-Comilla & Chandpur, 1969; (unpublished report submitted to the Department of Physical Planning, EPUE); p. 6.

* Appendix VII & VIII

Table 19. shows the pressure on all the resources of the area(4), and the second one- the pressure on the settled land area(6):

Since the urban areas depend on the forms around them for much of their supply of food stuffs, they show the indirect pressure on land:

Table 20. DENSITY OF RURAL POPULATION ON THE CULTIVATED AREA*

DISTRICT	RURAL DENSITY/SQ. MILE OF CULTIVATED AREA	
	1961	1951
Rajshahi	900	710
Comilla	2,040	1,774

The highest population density are obviously reached in purely urban administrative units such as Comilla (2,031) thana the urban population is 27% of the total population- (lines in urban areas or in rural urban fringe).

The district of Comilla does not have a single thana with population density of less than 1,000/sq. mile; infact the average district population density is 1,693 per sq. mile with over 96% of the rural population.

In the north and west of Rajshahi district, there is a large area of low population density. It is partly due to the Barind and partly to the Bhar Basin. In riverine thanas with low population density- there has been some immigrants into these fertile but comparatively low population density areas since 1947.

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* Cultivated area = Net Cultivated area + occupied by homesteads the figures are estimated. Based on Agricultural Census; Govt. of Pakistan, 1961 and other sources.

RAJSHAHI TOWN
REGIONAL DESCRIPTION

LOCATION: Rajshahi town is situated on the left bank of the river Padma, between lat. 24°-21'-5" and 24°-22'-16" North & long. 88°-31'-9" and 88°-34'-37" East.

BOUNDARY(MUNICIPAL.):

a) River Padma on the south, railway on the north, University on the east and relatively high agricultural field on the West.

b) Limitation:

i) On the South, river Padma flows as a natural barrier & ii) on the North railway runs as a man made barrier.

Development on the north beyond the railway is of recent origin.

AREA: 2471 acres with in the Municipal boundary.
2054 acres out side the Municipal boundary.
Total: 4496 acres (occupied by the urban structure.

POPULATION: Present population approximately one lakh.

As per population analysis: i) the first impact of growth during the decade 1931-41; ii) tremendous growth after 1950, administration and educational, along with other activities, are worth mentioning.

Table 21. REGIONAL SEATING: THE IMPORTANT CONNECTIONS FROM RAJSHAHI TOWN BY MEANS OF RAILWAY & ROAD DISTANCE

SL.NO.	DISTRICT HEADQUARTERS/TRAFFIC JUNCT.	RAILWAY IN MILES	ROAD IN MILES
(a)	ISHURDI	42	60
(b)	BOGRA	86	62
(c)	NATORE	-	30
(d)	GOVERNMENT HOUSE AT DIGA PATIA	-	33
(e)	RANGPUR	150	126
(f)	DINAJPUR	140	160
(g)	PABNA	48	60
(h)	KUSHTIA	64	70

Source: Brief report on the proposed Land-use plan of Rajshahi: Physical Planning Division, Urban Development Directorate, Govt. of East Pakistan, 1968.

Table 22. THE POPULATION OF RAJSHAHI MUNICIPALITY IN DECENNIAL CHANGES FROM 1901-1961-1968 SHOWING THE VARIATION IN PERCENT AS PER DISTRICT CENSUS REPORT 1961 AND MALARIA ERADICATION OFFICE SURVEY

YEAR	POPULATION	PERCENT OF INCREASE OR DECREASE	REMARKS
1901	21,589	-	POPULATION WITH IN THE MUNICIPALITY AS PER CENSUS REPORT
1911	23,406	8.4	"
1921	24,598	5.0	"
1931	27,046	10.0	"
1941	40,778	50.6	"
1951	39,993	-1.9	"
1961	56,885	42.0	"
1964	85,886	50.0 OVER 1961	AS PER MALARIA ERADICTION OFFICE
1968	90,000	58.2 OVER 1961	AS PER MUNICIPAL OFFICE
1968	1,00,000	75.78	URBAN POPULATION-POP. WITHIN THE MUNICIPALITY PLUS THE URBAN AREAS EXTENDED BEYOND THE MUNICIPAL BOUNDARY

Source: Brief report on the proposed Land-use plan of Rajshahi: Physical Planning Division, urban Development Directorate, Government of East Pakistan, 1968.

ROAD PATTERN:

a) linear road pattern has developed;

b) is the result of natural growth;

c) is the result of the renewal of the unconscious design;

d) major linear roads developed parallel to the railway and the river;

e) one important road runs perpendicular to the railway and meets the CBD in the north south direction.

TYPES OF ROAD PATTERN

Three distinct road pattern can be recognised on the basis of their functions :

a) Arterial roads - i) link the town with its umland and also with other towns and viceversa, ii) mostly metalled; iii) cars, buses and trucks are main vehicular traffic.

b) Sub arterial roads - i) major roads of the town; ii) the inner and outer ring roads, the radial roads and a few intermediate roads can be recognised within this class; iii) carry main burden of the intra city traffic - mainly vehicular traffic; iv) main shopping and commercial areas of the city are located on these roads;

c) Neighbourhood roads - i) the roads of the 3rd order and the smaller connecting roads are grouped into this category; ii) serve the neighbourhood traffic and iii) lesser important in function, - provides access to the next higher order - 'subarterial road; iv) mostly concrete v) by cycles and rickshaws are main vehicular traffic.

PHYSICAL FEATURE

PHYSIOGRAPHY :

a) " Gangea flood plain," almost flat, characterised by ponds and ditches on the " Young meander floodplain " of the Ganges;

b) General level of the town is about 60' above the mean sea level (58' on the West & 59' on the East);

c) Gentle slope until it reaches 52' on the North.

CLIMATE:

a) Annual rainfall lowest around 50" (July- Sept);

b) Summer-dry, Humidity low, mean temperature 106° F; daily range 10° F;

c) Prevailing wind:

i) Summer & Rainy season-from south, south-east:

ii) Winter-from North & West.

DRAINAGE:

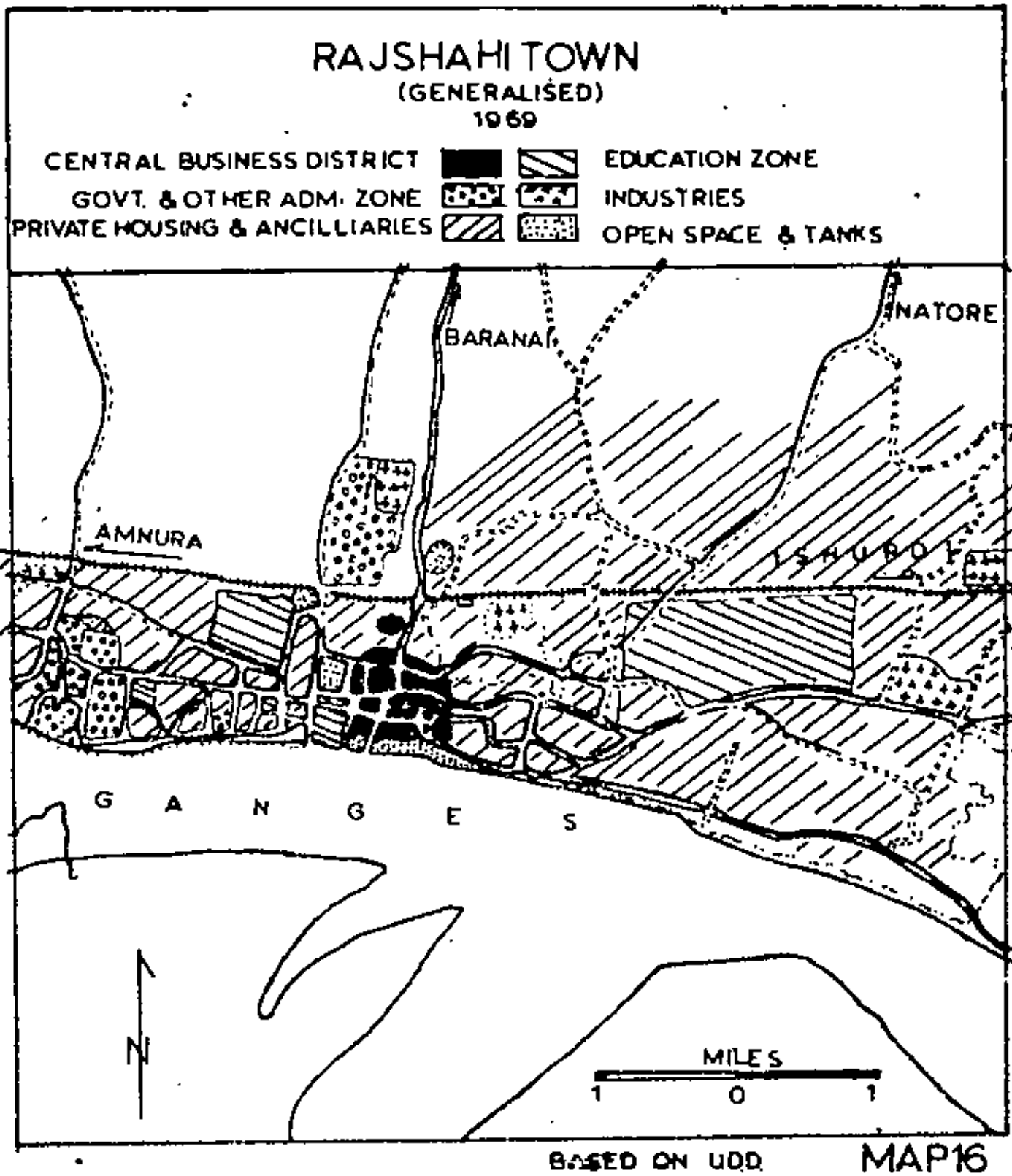
"Drainage and water logging"— an acute problem due to:

a) Blockade of the drains;

b) Random filled up of natural channels for building and other constructions.

PHYSICAL FORM:

Linear in shapre; extending East-West direction.


RAJSHAHI TOWN
(GENERALISED)
1969
CENTRAL BUSINESS DISTRICT
GOVT. & OTHER ADM. ZONE
PRIVATE HOUSING & ANCILLIARIES
EDUCATION ZONE
INDUSTRIES
OPEN SPACE & TANKS
BARANA
NATORE
AMNURA
ISHURDI
G A N G E S
N
MILES
1 0 1
BASED ON UDD
MAP16

GLIMPSE OF RAJSHAHI TOWN

ORIGIN & DEVELOPMENT :

a) Originated, until the beginning of the 19th. century, on the left bank of the river Padma as a small trading centre in Rampur-Boalia ;

b) Elevated to the status of a district headquarter in 1825;

c) Finally, Divisional headquarter of Rajshahi Division in 1947;

d) Became the seat of highest learning in 1953.

FUNCTIONAL IMPORTANCE

URBAN FUNCTION :

a) Predominently- i) administrative and
ii) educational ;

b) Secondary activities - Centre for the exchange of commodities.

Urbanfunction gravitated towards the east, mainly around the University area. Recent trend towards the north of the railway (Map 16).

BASIC FORCES :

ECONOMIC BASE :

Commercial area : Occupies 1.70% (about 42 acres) of the total urban acreage within the Municipal area. Three distinct classes can be recognised :

a) CENTRAL BUSINESS DISTRICT (C.B.D): Shaheb Bazar, Kazi Bazar, Ghoramara, characterised by highest density of population and incompatible uses of land mark, are the main shopping and commercial centre of the town. Shaheb Bazar is the central business District of the town where the principal arterial roads meet together and which is the main shopping, commercial and cultural hub of the town.

Basic economic forces: i) Silk and Silk production (for future expansion); ii) Industrial Estate (EPSIC)-(rate of growth slow); iii) Service industries and iv) Employment opportunities.

b) Neighbourhood Business Centre :

i) Primarily of neighbourhood significance;
ii) Developed along the important roads and cross roads;
iii) Functions depend upon the character of the neighbourhood;
iv) Four different centres can be recognised in Rajshahi town.

Court Market in the west and Talaisari Market in the east have been developed as neighbourhood shopping centres; New Market supposed to be a fashionable shopping centre of the town has been established by the Municipality on the station road.

Recent development: on the northern side of the railway station.

c) Wholesale District:

i) Collecting and distributing centre for the town itself and the surrounding regions that the town serves;

ii) Two areas can be recognised closed to the C.B.D and near the railway station and the arterial roads.

Table 23. THE INDUSTRIAL ACTIVITIES: THE TYPE & NUMBER OF INDUSTRIES WITH THE NUMBER OF THEIR EMPLOYEES IN & AROUND THE TOWN OF RAJSHAHI.

SL.NO.	TYPE OF INDUSTRIES	NO.OF INDUSTRIES	NO..F EMPLOYEES
1.	OIL MILLS	14	150
2.	FLOUR MILLS	4	100
3.	RICE MILLS	3	150
4.	WHEAT CRUSHER & RICE HUSKING	87	450
5.	ZARDA FACTORY	2	50
6.	PRINTING PRESS	9	125
7.	ENGINEERING FARMS	6	114
8.	MOTOR REPAIRING WORKSHOP	3	50
9.	PHARMACEUTICAL INDUSTRY	1	20
10.	METAL FACTORY	1	300
	TOTAL =	130	1,509

Source: Brief report on the proposed Land-use Plan of Rajshahi: Physical Planning Division, Urban Development Directorate, Govt. of East Pakistan, 1968.

INDUSTRIAL AREA: Occupies 1.67% (about 36.5 acres) within the municipal boundary. Another area on the north of the railway occupies 4.15 (about 85 acres) of the measured urban acreage out side of the municipal boundary:

a) Large scale Industry - negligible;

b) Basic economic forces: Silk and Silk production, (for future expansion);

c) Industrial Estate (EPSIC)- rate of growth slow;

d) Service Industries- segregated in the important sites;

e) Employment opportunities- unfavourable.

Neither any heavy industry in Rajshahi town nor is there any possibility of establishment of any such within the municipal area. The biggest of all the factories located near the town is a Match Factory which employs 300 persons.

POLITICAL:

a) Hierarchy:

i) Administrative hierarchy ranges from the simplest ward committee to the level of the Divisional headquarter;

ii) Similar hierarchy of different agencies, such as, offices of the - Central Government, Provincial Government, semi-government, Private Organisations and other services industries.

b) Administrative area:

Government administrative zone in Rajshahi town occupies 3.60% (about 89 acres) and government & other administrative zone occupy 0.8% (about 22.5 acres) of the total urban acreage:

The following characteristics can be identified:

i) segregation of the offices and buildings;
ii) distinction from other parts of the town in building structures;
iii) encroachment into the private residentials owing to the shortage of accommodation,
iv) incompatiable uses of offices and buildings.

SOCIAL & CULTURE:

a) Educational Institutions:

Educational areas occupy 4.05% (100 acres) within the municipal area and 61% (about 1250 acres) out side the municipal area :

i) Rajshahi University is the seat of highest learning;
ii) Higher Technical and Medical Institutions;

Dearth of Institutions for School going children & College students due to influx of population.

Problem: Uneven distribution.

b) Residential areas:

Government residence occupy .85% (about 23½ acres), private residences occupy 33.60% (about 833 acres) and 4.40% (about 90 acres) have been occupies by the Housing Estate.

1) Residential area(within the Municipality): i) most densely populated - Sagarpara & part of Tantipara, ii) along the river side-Pudkipara, Alupatti, Pathanpara, Dargapara and part of Kumarpara;

2) Less density: Quazihatta and Lakshmipur;

3) Modern building: Lakshmipur and along greater road.

Table 24. EDUCATIONAL FACILITIES: SHOWING NUMBER OF STUDENTS BOTH MALE & FEMALE WITHIN THE MUNICIPAL BOUNDARY OF RAJSHAHI TOWN.

SL.NO.	TYPE OF INSTITUTES	NO. OF INSTITUTES	NO. OF STUDENTS MALE	NO. OF STUDENTS FEMALE	TOTAL
1.	PRIMARY SCHOOLS	19	2,787	2,267	5,034
2.	HIGH SCHOOLS	15	4,704	3,840	8,544
3.	COLLEGES	5+1*= 6	3,532	698	4,680
4.	TRAINING INSTITUTE	4	302	5	307
5.	UNIVERSITY LAW DEPARTMENT	1	296	-	296
6.	ALIA MADRASA	1	350	-	350
7.	SPECIAL SCHOOLS	5	321	59	380
	GRAND TOTAL =	51	12,392	6,849	19,591

* Medical College.

Source: Brief report on the proposed Land-use Plan of Rajshahi Physical Planning Division, Urban Development Directorate, Govt. of East Pakistan, 1968.

Table 25. ANALYSIS OF THE EXISTING LAND USES WITHIN AND OUT SIDE OF THE MUNICIPAL AREA OF RAJSHAHI TOWN

Sl.No.	DESCRIPTION OF USES	AREA WITHIN MUNICIPAL BOUNDARY AREA(Acres)	% OF TOTAL AREA	AREA OUT SIDE OF THE MUNICIPAL BOUNDARY AREA (Acres)	% OF TOTAL AREA
1.	Government Administrative Zone.	89.00	3.60	56.00	2.63
2.	Government,other than administrative	22.50	0.81	-	-
3.	Government residence	23.50	0.85	324.00 Housing Estate	15.70
4.	Private housing and ancilliary	833.00	33.60	90.00	4.40
5.	Commerce	42.00	1.70	-	-
6.	Educational zone	100.00	4.05	1250.00	61.00
7.	Industry	36.50	1.67	197.00	9.57
8.	Green spaces and parks	552.00	22.40	-	-
9.	Mango garden	48.00	1.94	34.00	1.66
10.	Stadium	-	-	10.00	00.49
11.	Horticulture	-	-	93.00	4.55
12.	Tanks	119.00	4.82	-	-
13.	Vacant spaces	51.00	2.06	-	-
14.	Road (including railway) (within and outside the Municipality)	555.50	22.50	-	-
	TOTAL =	2472	100.00	2054	100.00

Source: Khan, S. A.; Existing Land use Analysis: Rajshahi-Comilla and Chandpur;1969;(unpublished report, submitted to the Development of Physical Planning,E'UET), p. 16(a).

Gradual infiltration of commercial, industrial, and official uses within the residential zone is a positive setback for the compact development of residential area which are already lacking the educational and other community facilities.

Characteristics:

i) Central zone is characterised by the incompatiable and multipurpose uses of the houses;

ii) Most of the houses are out dated out worn and the density decreases outwards from the centre;

iii) Most of the pucca houses are located on the principal roads of the town;

iv) Recent tendency for the development of upper class residential areas of higher architectural skill and aesthetic values.

c) Social and recreational areas:

Occupies 22.40% (about 552 acres) of the total urban acreage :

i) Dearth of recreational facilities-only one organised park(Bhuban Mohan Park); ii) The river embankment used by the town people as the spot for evening walk and open space; iii) Inadequate cinema hall and other recreational facilities are worthmentioning.

COMILLA TOWN

REGIONAL DESCRIPTION

LOCATION:- Comilla town is situated -

a) On the southern bank of the river Gumti;

b) On the main line of Pakistan Eastern Railway - between influenced zone of two largest cities,

c) Dacca- Chittagong highway which passes through the town;

d) Geographical location - between lat. 23° - 25' - 43" and 23° - 28' - 43"North & long. 91° - 9' - 27"and 91° - 12'-28"East.

BOUNDARY:

a) The town is bounded on the East by the Indian border, river Gumti on the North Lalmai hill on the West and on the South a low and medium level agricultural land.

b) Limitation: i) Natural barrier-river Gumti, Lalmai Hill and low lying agricultural land on the north, west and south respectively;

ii) Man made barrier-Indian border on theeast.

AREA:

2680.05 acres within municipal boundary.

POPULATION:

Present population approximately 59,500[1].

ROADPATTERN:

a) a "Spider Web" road pattern has developed;

b) is the result of natural growth;

c) unconscious design, and unplanned origin;

d) a major ring road developed parallel to the river from which the radial roads connect the short distant roads.

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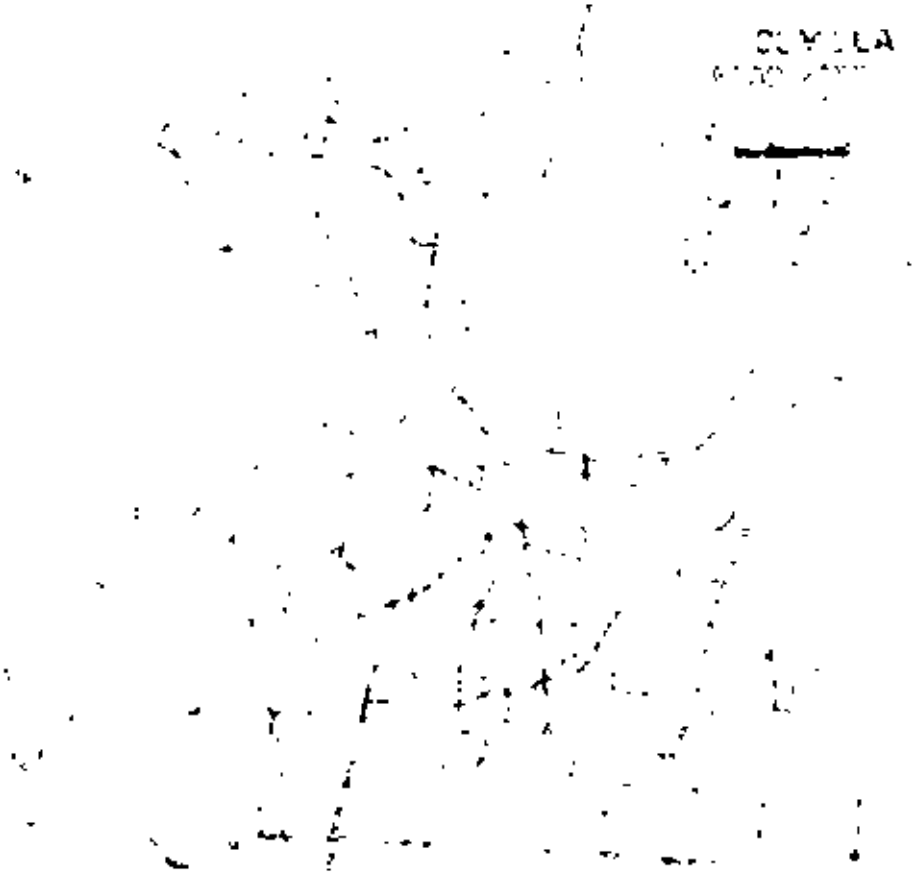
1 As per Directorate of Malaria Eradication Statistics.



TYPES OF ROAD PATTERN(Map 17):

3 district road pattern can be recognised on the basis of their functions:

a) Arterial roads - i) link the town with its umland and also with other towns and viceverra ii) mostly metalled; iii) cars, buses and trucks are main vehicular traffic.

b) Sub arterial roads - i) major roads of the town; ii) the inner and outer ring roads, the radial roads and a few intermediate roads can be recognised within this class; iii) carry main burden of the intra city traffic - mainly vehicular traffic; iv) main shopping and commercial areas of the city are located on these roads.

c) Neighbourhood roads: - i) The roads of the 3rd order and the smaller connecting roads are grouped into this category, ii) Serve the neighbourhood traffic and iii) lesser important in function,- provides access to the next higher order"sub-arterial road"; iv) mostly brick paved v) by-cycles and rickshaws are main vehicular traffic.

PHYSICAL FEATURE

PHYSIOGRAPHY:

a) Almost flat, characterised by ponds and ditches on the uplifted "Old Brahmaputra meander" floodplain;

b) General level of the plain is about 40' above the mean sea-level and is subjected to annual inundation;

c) Lalmai hill (11 miles long & 90' above the mean sea level) stands 5 miles west of the town.

CLIMATE:

a) Average annual rainfall for the year is about 76";

b)Temperature- summer maximum up to 103°F, winter cold, lowest temperature 45°F. (at night);

c)Humid tropic and humidity is rather high throughout the year.

DRAINAGE:

a) Acute problem during monsoon;

b) Inundation level (about 26' above the mean sea level);

c) Streets submerge owing to the onrush of water.

An embankment along the river protects the town from annual inundation.

PHYSICAL FORM:

Developed in a ribbon pattern along the highway and radial roads with an undesirable mixed type of land-use.

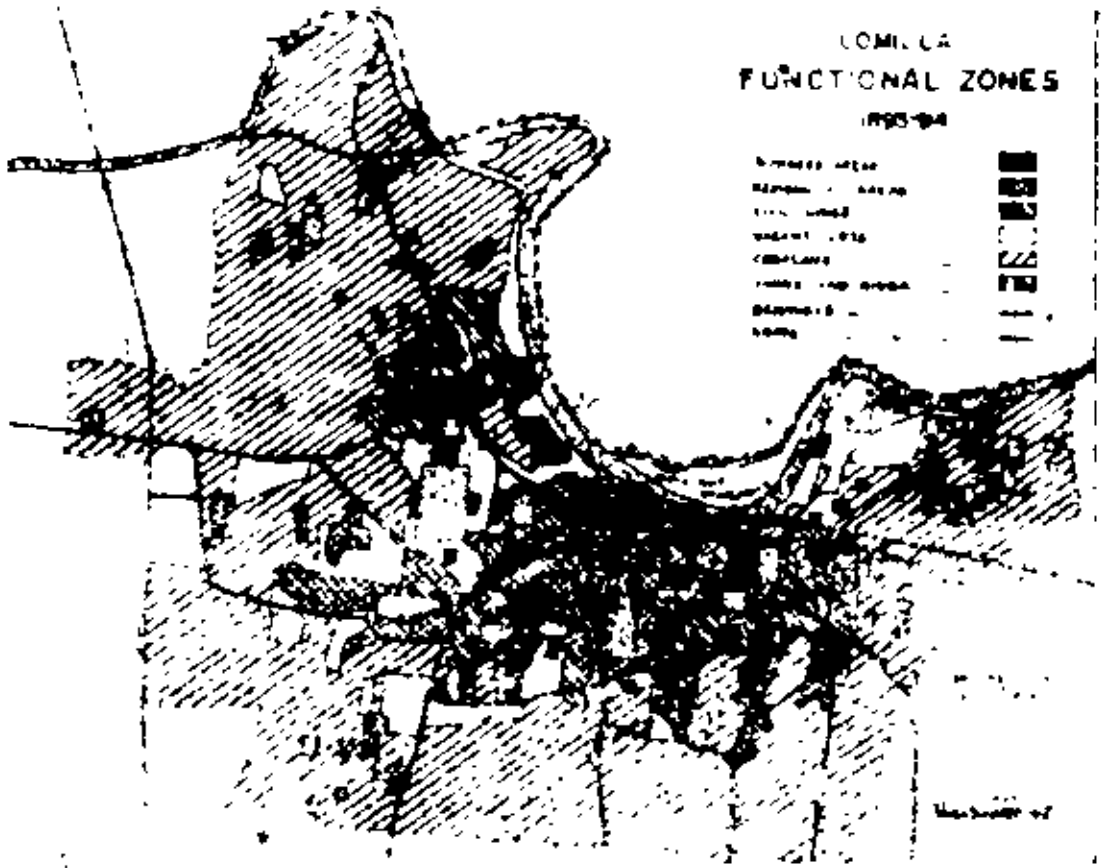
GLIMPSE OF COMILLA TOWN

ORIGIN & DEVELOPMENT:

a) First settlement dates back as late as the 7th centry A.D.; - the centre of all activities nucleated at chawkbazar on the left bank of the river Gomti, Kasar road being, pactically the axis & the southern limit.

b) During the Mughal period - better class residence extended North West;

c) Became the District headquarter in 1790;



COURTESY ORIENTAL GEOGRAPHER

d) Middle class residences began to grow in the south,
- growth accelerated with the establishment of the "Civil line", (Map 19).

e) Extended south and north ward within 30 years;

f) Municipality was constituted in 1865;

g) Marked West and Southward expansion during next 60 years;

h) During 1961, i) total stoppage of expansion on the east, ii) no change in the direction of growth, iii) some new areas have been developed on the West and South(away from the town); iv) natural expansion of the town towards the West and the South.

i) 1961-65, characterised by the addition of residential development on the south.

Recent southward trend due to the change in transport and communication system from riverine to surface and airbourne traffic.

ARCHAEOLOGICAL INTEREST:

a) Mainamati; b) Shalbanbihar; c) Dharmasagare; d) Numerous mosques etc.

FUNCTIONAL IMPORTANCE

URBAN FUNCTION:

a) Pre dominently- i) administrative and ii) cultural;

b) Secondary activities- centre for the exchange of commodities.

Urban function gravitated towards the north, perhaps, due to the change in transport and communication system from riverine to surface airbourne traffic(Map 18).

BASIC FORCES & LANDUSE ASSOCIATION:

ECONOMIC BASE:

Commercial area: Occupies 2.2% (about 60 acres) of the total urban acreage. Three district classes can be recognised:

a) Central Business Districts(C.B.D): i) nucleus of the commercial activities; ii) located on the inner ring road of the town; iii) extends mainly in the east west direction; iv) main focus of the pedestrian and vehicular traffic; v) convergence of radial road makes accessible from all parts of the town.

Originated in chakbazar, began to expand slowly with the growth of the town; initial growth direction- towards the railway station and principal residential area in the West; present tendency- along the principal roads.

b) Neighbourhood Business Centre:

i) Primarily of neighbourhood significance;
ii) Developed along the important roads and cross roads;
iii) Functions depends upon the character of the neighbourhood;
iv) Four different centres can be recognised in Comilla town.

c) Wholesale District:

i) Collecting and distributing centre for the town itself and the surrounding regions that the town serves;
ii) Two areas can be recognised closed to the CBD- near the railway station and the arterial roads.

INDUSTRIAL AREA: Occupies 1.5% (about 40 acres) of the total urban acreage:

a) Large scale Industry- negligible;

b) Light manufacturing Industries;

i) located closed to or within the CBD;

ii) seggnegation of light industries in a particular road or a small block;

iii) location of particular industry can be understood by the name of the road as in, "Chattipatti" only umbrella industry is localised.

Development of light manufacturing industries in the neighbourhood area are the development of the nucleus of that particular industry.

POLITICAL BASE:

a) Hierarchy:

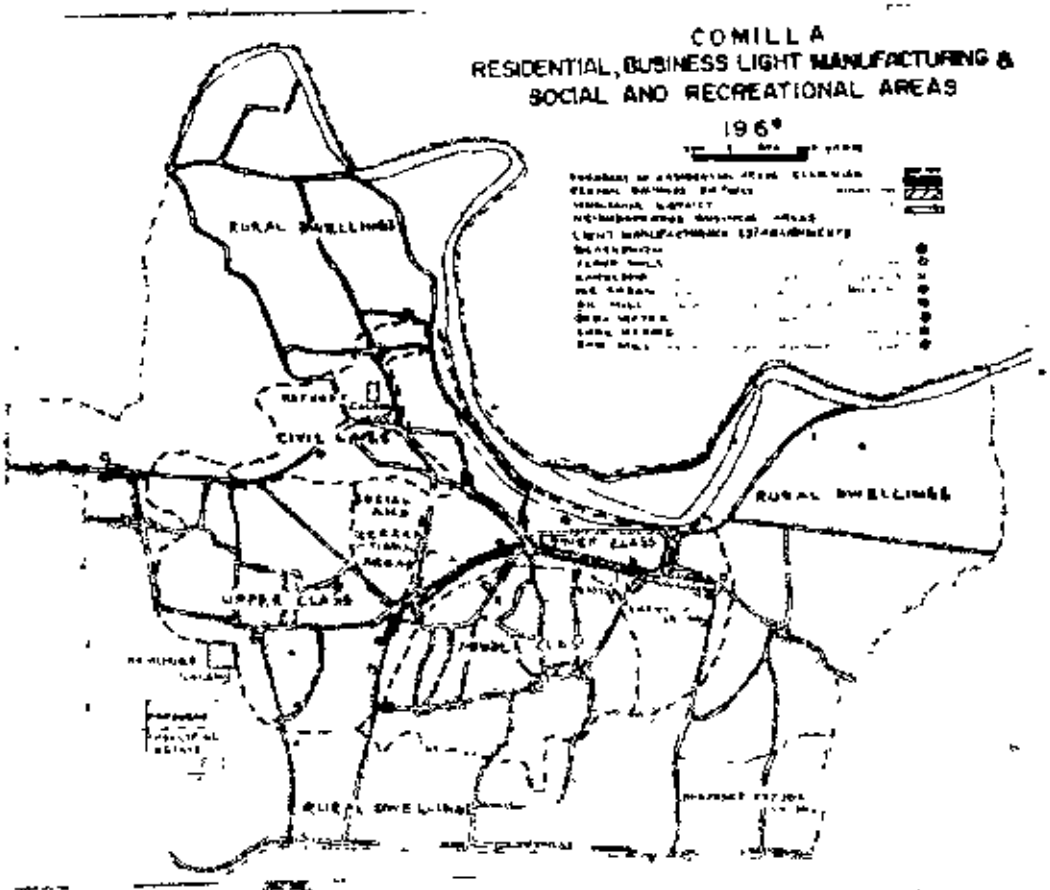
i) Administrative hierarchy ranges from the simplest ward committee to the level of the District headquarter;

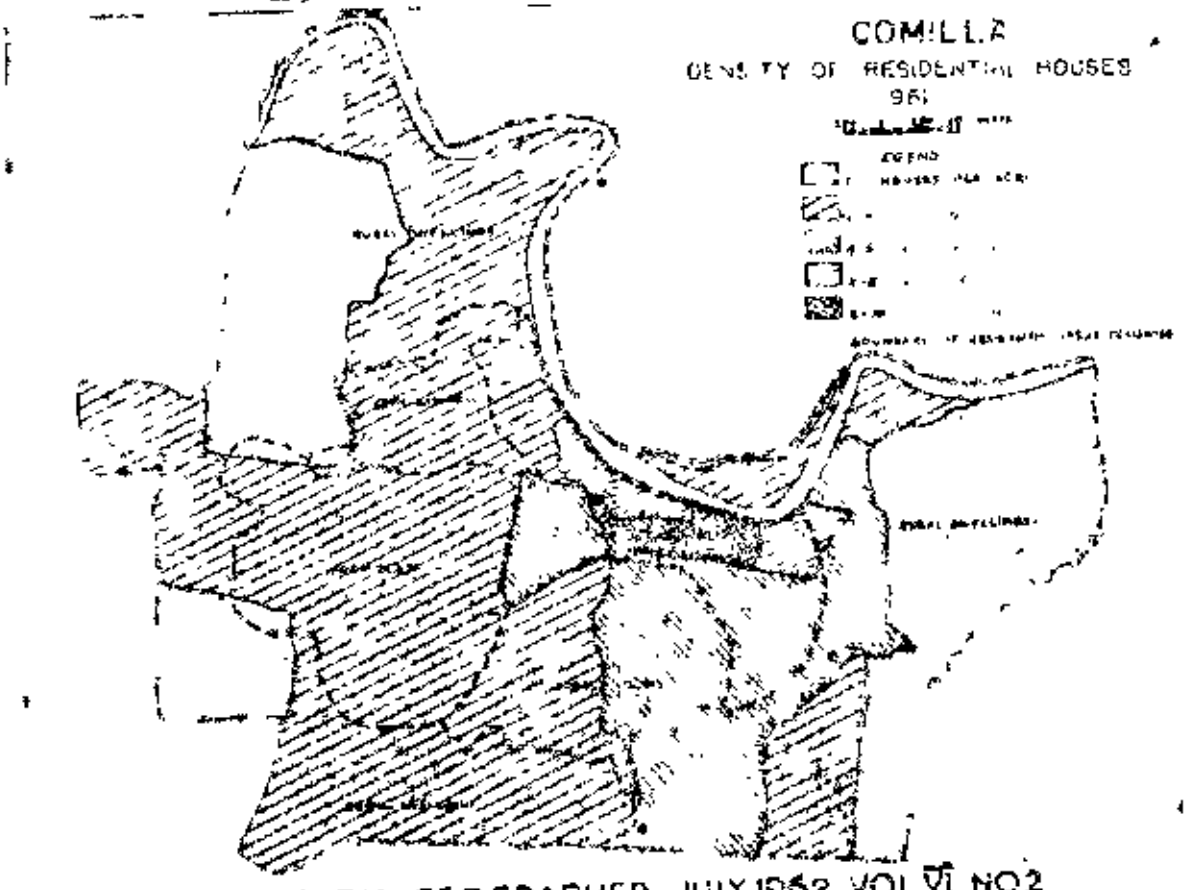
ii) Similar hierarchy of different functions of different agencies, such as, offices of the Central Government, Provincial Government, Semi-government, Private Organisations and other services industries.

b) Administrative area: The administrative area or civilians of Comilla town has about a mile east of the railway station and occupies about 2.93% (105 acres) of the total urban acreage. The following characteristics can be identified:

i) segregation of the offices and buildings;

ii) distinction from other parts of the town in building structure.





COURTESY ORIENTAL GEOGRAPHER JULY 1962 VOL VI NO 2

MAP 19

iii) encroachment into the private residentials owing to the shortage of accommodation;

iv) incompatiable uses of offices and buildings.

SOCIAL & CULTURE:

a) Educational Institutions;

Educational areas occupy 1.57% (about 42.05 acres) of the total urban acreage:

i) The schools & colleges are situated along the tanks of the town;

ii) Originally located in the main and better class residential areas of the town;

iii) The Govt. high school lies close to the CBD and is centrally located;

iv) Educational institutions are sufficient for the present day need;

Maldistribution and inconvenient location along with inadequate space provision are great set back.

b) Residential areas:(Map 19)

Comilla can best be called the town of residence, for it occupies 42.00% (about 1127 acres) of the total urban acreage.

The author has classified residential areas, unlike Radcliff and Homer Hoyt(on the basis of rent) or Hartman and Hook(on the basis of running water, flushtoilet and general upkeeping of the hours), into two broad classes-i.e., Government and Private residences due to insufficient information.

Table 26. ANALYSIS OF THE EXISTING LAND USE IN THE MUNICIPAL AREA OF COMILLA TOWN.

SL.NO.	DESCRIPTION OF USES	AREA(IN ACRES)	PERCENTAGE OF TOTAL AREA
1.	Government Zone	105	3.93
2.	Urban Residential Area	1127	42.00
3.	Commerce	60	2.24
4.	Industry	40	1.50
5.	Educational Zone	42.05	1.57
6.	Agricultural Zone	660	24.61
7.	Embankment	12	0.45
8.	Roads	108	4.04
9.	Railway	28	1.04
10.	Cantonment Area(Hill)	-	-
11.	Air Strip	-	-
12.	Archaeological site	-	-
13.	Tank, Open Space & Playground	263.00	9.83
14.	River & Canal	235.00	8.79
	TOTAL:	2680.05	100.00

Source: Khan, S. A; Existing Land use Analysis: Rajshahi, Comilla & Chandpur; 1969;(Unpublished Report, submitted to the Department of Physical Planning, EPWAT); p. 24(a).

1) Government residences - located on the civil line and on the adjoining areas on the west; distinctive from the Private residential areas in design and building structure.

2) Private residences have been spread out almost all over the town because of the lack of proper planning and housing regulations.

Characteristics:

i) Central zone is characterised by the incompatiable and multipurpose uses of the houses;

ii) Most of the houses are out dated outworn and the density decreases outwards from the centre;

iii) Most of the pucca houses are located on the principal roads of the town.

c) Social and Recreational areas:

Occupies about 9.83% (263.00 acres) of the total urban acreage, tanks, open space & play fields are the common features, and is located closed to the CBD; i) inadequate as per requirements; ii) town hall is the only civic centre; iii) commercialised recreation-available in the form of cinema, restaurants and theatre.

Stadium, town hall and Ramnagar located closed to the CBD are the important altractions.

CHANDPUR TOWN

REGIONAL DESCRIPTION

LOCATION:- Chandpur town is situated on the left bank of the river Meghna between lat. 23°- 12'- 44"and 23°- 14'- 2"North and longitude 90°- 38'- 8"and 90°- 40'- 14"East.

BOUNDARY:

a) Chandpur town in surrounded by the river Meghna on the north and north east and a vast agricultural low land on the west and south.

b) Limitation - Low lying agricultural land, ditches and irregular relief dictate the natural growth of the town.

AREA: About 1957.25 acres occupied by the urban structure.

POPULATION:

It is really a moderate town of about 35,000[1] persons. According to 1961 census report it is about 40,000. Malaria eradication reports about 60,000 population in 1968.

ROAD PATTERN:

a) Linear road pattern has developed;
b) is the result of natural growth;
c) unconscious design and unplanned origin;
d) mainly controlled by the natural topography.

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1 Naqvi, S.H.H: Mechanised Craft Cargo Traffic of Chandpur River Port; The Oriental Geographer, Vol.XII, July,1968,No.2; p. 4.

TYPES OF ROAD PATTERN:

Two district road pattern can be recognised on the basis of their functions:

a) Arterial roads- i) link the town with its umland and also with other towns and vice versa ii) mostly metalled; iii) has direct access to the riverport; iv) buses, trucks, rickshaws, & cycles are main vehicular traffic; v) carry main burden of the intra city traffic; vi) main shopping centre; residential, commercial, government offices and the like are located on these roads.

b) Neighbourhood roads- serve the neighbourhood traffic and i) lesser important functions- provides access to the main road, ii) mostly brickpaved, iii) by-cycles and rickshaws are main vehicular traffic.

PHYSICAL FEATURE

PHYSIOGRAPHY:

Chandpur town i) is situated in the lower Meghna river floodplain, ii) comprises slightly older tidal deposits; iii) has a rather irregular relief of gently undulating ridges and basin; iv) the sediments appear to be a mixture of the Ganges and Meghna alluvium; v) predominantly silty, sometimes slightl y calcareous.

CLIMATE:

a) Average annual rainfall for the year is about 75";

b) Temperature- summer maximum upto 100°F; winter cold, lowest temperature 45° F.(at night);

c) Mean July temperature 82° F & January temperature 62° F; rainfall recorded 75".

d) Humid tropic and humidity is rather high throughout the year.

HINTERLAND: Seasonally inundated & comprises mostly low land.

PHYSICAL FORM: Ribbon development along the Comilla-Chandpur trunk road and along the riverfront by farcated by the river 'Dakatia'.

GLIMPSE OF CHANDPUR TOWN

ORIGIN & DEVELOPMENT

a) Originated as the collecting and distributing centre and all activities nucleated on the river bank;

b) 1895, marks the importance of its favourable geographical location, along with the establishment of Assam Bengal Railway- a most important transhipment point, serving both Calcutta and the region commanded by the Assam Bengal Railway;

c) The Principal reason for the initial development of Chandpur town as an inland water port is the transit traffic between Assam and Calcutta;

d) A substantial down fall after 1947, due to the partition of the subcontinent;

e) 1958 marks the revival of the port town due to the governmental decision to disperse industries in suitable locations;

f) 1969, Chandpur continues to flourish as the principal transhipment centre of East Pakistan.

FUNCTIONAL IMPORTANCE

URBAN FUNCTION:

a) Predominantly - i) an inland port town;
ii) transhipment centre,
iii) important distribution and collection centre.

Unique geographic location where the main river ways, railways, and highways meet.

b) Secondary activities- i) administrative, ii) research centre(Govt. Fisheries Research Station is worth mentioning).

Urban function gravitated along both side of the river that can be compared to the city of Budhapest. Recent trend towards the north west along the Chandpur Comilla road(Map 20).

BASIC FORCES & LANDUSE ASSOCIATION:

ECONOMIC BASE:

Commercial area: Occupies 4.3% (about 89.50 acres) of the total urban acreage. Three distinct classes can be recognised:

a) Central Business Districts(CBD): i) nucleus of the commercial activity, ii) hemmed by the railway and the river on the north and south respectively, iii) extended mainly in the east west direction, iv) main focus of the pedestrian and vehicular traffic; v) characterised by commercial, administrative, residential and cultural activities.

b) Neighbourhood Business Centre:

i) Primarily of neighbourhood significance,

ii) Developed along the important roads and cross roads,

iii) Functions mainly depends upon the character of the neighbourhood,

iv) Three important neighbourhood centre can be recognised.

c) Wholesale District:

i) Collecting and distributing centre for the whole town itself and the surrounding regions that the town and the port serve.

ii) Two important wholesale districts on either side of the river are of equally important.

INDUSTRIAL AREA: Occupies 2.7% (about 53.25 acres) of the total urban acreage.

a) Small scale industries: mainly on the northern side of the river on the eastern & western fringe of the CBD.,

b) Heavy concentration of large scale industries along the southern bank of the river 'Dakatia',

c) The western margin of the southern bank is characterised by Industrial-Commercial activities.

POLITICAL BASE:

a) Hierarchy: i) Administrative hierarchy ranges from the simplest Ward Committee to the level of the subdivisional headquarter; ii) Similar hierarchy of different functions of different agencies, such as, offices of the- Central Government, Provincial Government, Semi-Government, Private Organisations and other services industries.

b) Administrative area: Centrally placed on the northern bank of the river 'Dakatia'; other Government offices etc, radiate along the principal roads to a considerable distance beyond the municipal boundary. The administrative area along with other government zones occupy about 9.3% (about 184.50 acres) of the total urban acreage.

Following characteristics are identified:

i) Segregation of the offices and buildings;

ii) Distinction from other parts of the town;in building structure. iii) Encroachment into the private residentials owing to the shortage of accomodation; iv) Dispersal tendency along the main road to a considerable distance; v) Incompatiable uses of offices and buildings.

SOCIAL & CULTURE

a) Educational institutions: Occupy about 3.0%(about 59.75 acres) of the total urban acreage:

i) Originally located in the main and better class residential areas of the town;

ii) College and other important cultural activities are located mainly in the CBD;

iii) Education institutions some how mitigate the present day need.

Maldistribution and inconvenient location along with inadequate space provision are great set back.

b) Residential areas: Occupy 30.6% (about 610.00 acres) of the total urban acreage:

i) Government residences are distinctive from the private residences in design and building structure; a recent trend of development along the main transportation about on the out-skirt of the urban structure unlike the previous tendency of concentration in the heart of the town.

Table 27. ANALYSIS OF THE EXISTING LAND USE IN THE MUNICIPAL AREA OF CHANDPUR TOWN.

SL.NO.	DESCRIPTION OF USES	AREA(IN ACRES)	PERCENTAGE OF TOTAL AREA.
1.	Urban Residential Zone	610.00	30.80
2.	Government Zone	184.50	9.30
3.	Commercial Zone	89.50	4.30
4.	Industrial Zone	53.25	2.70
5.	Educational Zone	59.75	3.00
6.	Agricultural Zone and Open Space	411.25	20.03
7.	Roads	50.00	2.50
8.	Railway	65.00	3.30
9.	Embankment	14.40	0.70
10.	Tank and low Lands	216.25	10.60
11.	River and Canal	225.00	11.30
12.	Brick Field	7.60	0.40
13.	Existing Jetty Facility	6.25	0.30
	TOTAL:	1,987.25	100.00

Source: Brief Report on The Proposed Land Use Plan of Chandpur: Physical Planning Division, Urban Development Directorate, Govt. of East Pakistan, 1968.

2) Private residences have been sprung out almost all over the town because of the lack of proper planning and housing regulations.

Characteristics:

i) Central zone is characterised by the incompatiable and multipurpose uses of the houses;

ii) Most of the houses are out dated out worn and the density decreases outward from the centre;

iii) Most of the pucca houses are located on the principal roads of the town.

c) Social and Recreational areas: Social and recreational areas along with agricultural zone occupy 20.3% (about 411.25 acres) of the total urban acreage, - tanks, open space and play fields, etc. are the common land marks and are located close to the CBD; i) inadequate as per requirements; ii) town hall is the only civic centre; iii) commercialised recreation - available in the form of cinema, restaurents and theatre.

The pattern of the retail structure of the town discussed do not fit in the theories of the internal structure of cities. None of the theories of 'Burgee', 'Hoyt', and Harris fully explain the areal pattern of their CBD 'Ribbon' development along the main street of Comilla and Chandpur can be explained partly by 'Harris' who thought that 'ribbon' development may also take place and at least part of the CBD occupies an area of considerable dimension, which is not found in those towns.

Linear development of Rajshahi town some how explains Norris' R. Davisargument that due to natural barriers and due to rail, road and other transportation utilisation concentric theory fails. He said that CBD is more irregular in shape, rectangular, for example, or gridiron, linear than circular.

Burgess and Hoyt have visualised the growth of CBD outward in a concentric form and have not suggested any possibility of the development of the major outlying business centre or the transfer of the CBD in a completely new area. Harris visualised these possibilities and the author finds that new fast growing business centre into a major out lying business centre in the west near the rail station in the case of Comilla and along the fastest transportation route as in Chandpur and Rajshahi which was explained by Hoyt.

None of the towns explain the distribution of different class populace in different zone as pointed out by Burgess's Concentric Zone Theory.*

Most of the light manufacturing industries are located to the CBD in Rajshahi, Comilla and Chandpur as has been pointed out in all the theories of urban structure.

New industrial establishments in those areas are neither coming up in concentric zone around the CBD nor in any sector moving out from the CBD. Industries are located near the centre of transportation -water, rail, road etc.

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* Recent trend for a separate upper class residential area in a separate zone in Rajshahi town, has been identified.

Residential areas do not follow any pattern and there are more variability than homogenity and unlike 'Burges' contenuous gradation is absent but poler opposite as has been pointed out by Walter Firey.

None of these urban structures explain residential rental values higher in the periphery and lower in the centre as mentioned in the Sector and Concentric Zone but it is found reversed and justify Ullman's Urban Renewal concept.

Multiple nuclai theory may be taken into consideration for the expansion facilities to the suitable areas, advantages of extra urban facilities e.g. Comilla and Chandpur, attraction of special function such as Rajshahi University etc. that help for their expansion.

CHAPTER IX

DEVELOPMENT PLAN

CHAPTER IX
DEVELOPMENT PLAN

In the process of Physical Development of East Pakistan, it is rightly observed that : " For synthesis of the inland waterways, railways, roadways and the power availability grid , we find that ' Physical DEVELOPMENT STRUCTURE' of our province is basically committed. A definite geographic shap of 'H' fitted for physical development, emerges on the face of the province, linked by an enormous water lobby in the centre and having three water antennas going into the hinterland. Location of future centres of urbanisation and industrialisation, will logically fall within this development frame work" [1] (Map 21).

Transportation system, plays important role not only, to meet the requirements for the physical development but also, is in itself a powerful force generating socio-economic development of an area. It leads to exploitation and utilisation of new unused resources , serves as a distributor of agricultural and industrial products to consumers and opens up the under developed areas to the influence of progress.

In most areas in East Pakistan waterways become the only means of transport along the bank of which many trade centres developed around the the 18th century (Map 4). Later, activities gravitated to the rails and roads due to the silting of the rivers as well as the development of rail and road networks.

However, unique waterways system provides opportunities for cheapest means of transportation but with slow speed. When bulk - goods of imperishable nature are to be moved over long distances and where time factors has no consideration, waterways provide an ideal solution (Appendix I & II).

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1. Physical Planning Progress; Urban Development Directorate, Govt. of East Pakistan, August, 1968; P.33.

EAST PAKISTAN
DEVELOPMENT FRAMEWORK

COURTESY
U.D.D. GOVT.
OF E.PAK.

MAP 21

Railways, on the other hand permit carriage of commercial traffic and passengers on long haul at relatively high speed and comparatively cheaper charges but with limited frequency (Appendix III & IV). The existing networks of railways and that committed during the next two Plan periods has taken up a definite form on the surface of the province. Road transport on the other hand is not only considered a efficient for short haul but also for long haul; number of service frequency is vital for the short distant travels,it can only be mitigated by the development of road transport.

The impact of transportation improvement is already resulting in the change in pattern of agriculture in some areas of East Pakistan. Vast areas of Sugar cane in Jhenida sub-division is now tapped by rail and road where also greater emphasis is being laid on vegetable production and other cash crops instead of food grains. Location of all the Nagars (metropolitan regions, Map 15) have distinct axis of development partly dependent on rivers and partly on railways and roads.[1]

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1. Dacca - Narsingdi - Narayanganj - Demra (Map 14).
   Chittagong - Fouzdarhat - upto mouth of Karnaphuli;
   Chittagong - Kaptai ; Chittagong - Hat Hazari .
   Khulna- Khalishpur - Daulatpur - Noapara(development rapid).

" Around Khulna is another .....

.....

..... Khulna being located within forty miles of Chalna, the second major port of East Pakistan, affords cheap water transport for raw jute to be exported outside. Khulna is also linked by railway and road transportation with other parts of East Pakistan. After partition, owing to its locational advantage a few jute mills have been established there. Since then it has become another important collecting river port. During pre-partition time the area, in the Satkhira sub-division especially south west of Khulna, jute cultivation was prominent owing to its close proximity to Calcutta."[1]

Narsingdi and Chandpur, well connected by perennial rivers and railways to Nagars at Dacca and Chittagong, gain immense potentialities for development where non-availability of high lands is the only draw back. Other emerging centres to be mentioned are Bhairab Bazar - Ashuganj on the bank of the Meghna. Bogra and Kushtia have sufficient built up lands and have potentialities for development.

Sprawling development of industries and other activities along the river banks utilising unnecessarily large Water Front and rendering the adjacent areas unsuitable for further development and depriving the public of the facility of access to the river. This unplanned and uncoordinated development led to uneconomic use of buildable land some times involving duplication of expenditure to provide necessary infrastructure and residential and civic facilities.

The determination of pattern and rank, size distribution of trade centres (Map 15) is a matter of integration of economic and industrial policy of the Government and also the limiting physical factors influencing the extent of their growth.

1. Islam, Dr., Aminul ;Crop combination Regions in East Pakistan; Oriental Geographer, Jan., 1965, Vol. II, No.I. P. 10-11.

location for new centres and possibilities of extending the urban facilities to the rural settlements to reduce the socio-economic and physical development gap between the urban and non-urban centres are all the more important to be considered. Integration of roads, railways and waterways must be looked into for saving time and for effectiveness of the communication system for over-all development of the province.

The unique system of hats offer the possibility for providing organised centres for activities and amenities in the non-urban regions. Hats are not places for living but for providing services — a place for employment and amenities for the people from surrounding haphazard settlements. This accepted principles offers the possibilities for selecting potential centres for rural development.

There are a number of instances where improved transport has almost revolutionised the socio-economic conditions of the rural communities . The road system and road transport services need better planning to carry development far into the interior.

Professor Rahman has rightly said that "The present slow rate of the country road development is also responsible for the slow rate of change in the country side. The process of development is continuing, but in only limited areas .... An overall scheme of regional roads should be worked out, for the improvement of the country's overall development."[1]

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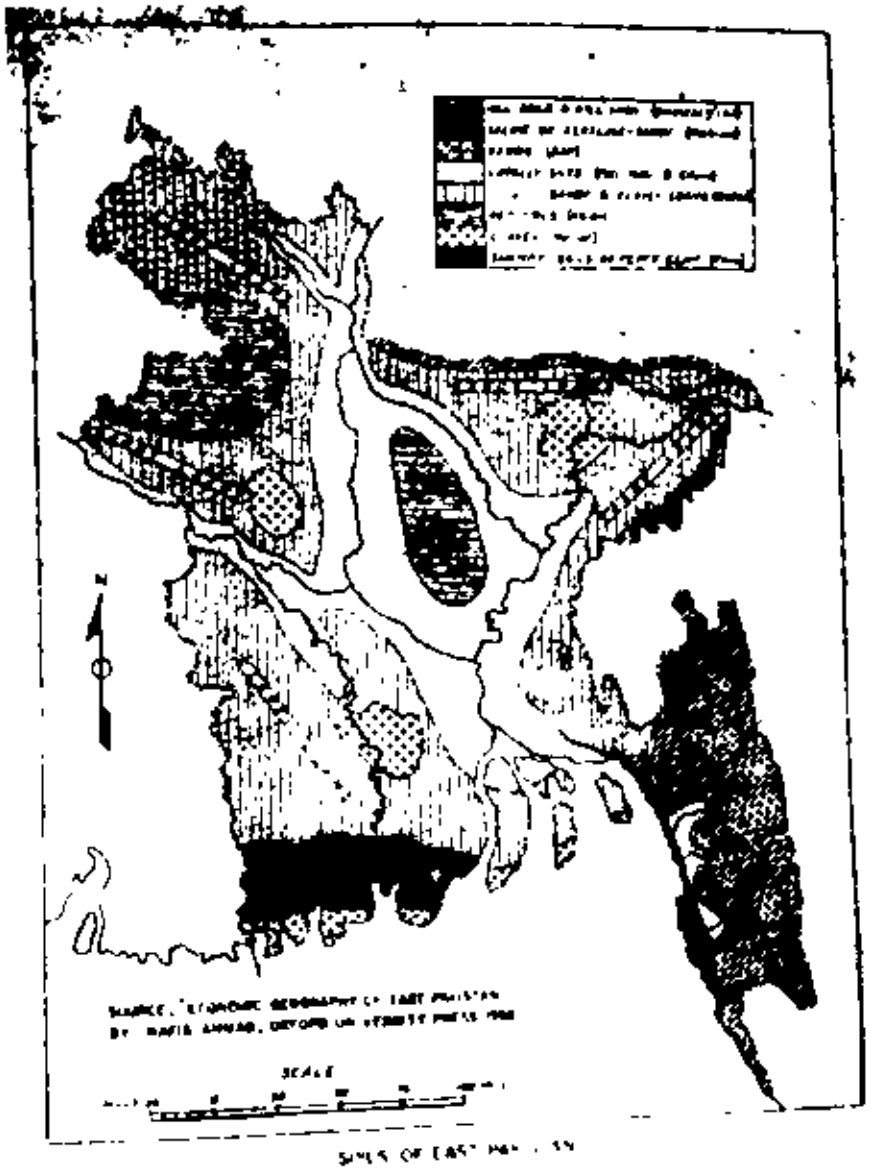
1. Rahman, Golam: Village Planning in East Pakistan; unpublished thesis, University Oklahoma Graduate College; Norman, Oklahoma, 1965, P. 46.

Regional Plan:

In an agricultural and developing province like East Pakistan, it bears a close relation to the agricultural resources. These in their turn depend partly on such geographical factors as relief, soil, climate, water supply, forest cover and the area available for cultivation. The distribution of population is also determined by economic factors, such as the amount of capital available for investment and method of cultivation. East Pakistan consists of a very large plain, ideal for agriculture. The rich alluvial soil is renewed every year by the flooding of the rivers during the rainy season (Map 22). The soil is good, the rain fall sufficient, and plenty of water is available from the rivers and hills for irrigation purposes if it is required. The temperature are such that the growth of plant life is not retarded at any season of the year. The production per unit area is therefore high and the land for this reason is able to support a dense population.

A very important factor which should necessarily control the planning of any surface communication, is the physical feature of the province. In East Pakistan, the topography is flat and only a few alluvial deposits and marginal hills exists (Map 23). Thus many districts are susceptible to normal flooding. Therefore it is found that this province nowhere very far from the sea and possessing no great mountain areas, has smaller range of temperature. The winter are very pleasant being both mild and dry. The Summers are long and hot. Rainfall is generally and varies from about 50" in the west, to about 140" in the south-eastern and northern part. Rainfall heaviest in the Sylhet district (200"- 250"), whereas the lowest recorded in the district of Rajshahi(Map 24).



MAP 22

East Pakistan is divided into distinct regions by the rivers that ranks amongst the biggest in the world— the Brahmaputra (Jamuna), the Ganges(Padma) and the Meghna (Map 25). The area that comes under the Rajshahi administrative division is separated from the rest of the province by the Hamuna and the Padma and also bordered by Indian territory. Other distinct zones are :

Khulna Administrative Division including the district of Faridpur.

Dacca Administrative Division excluding the district of Faridpur.

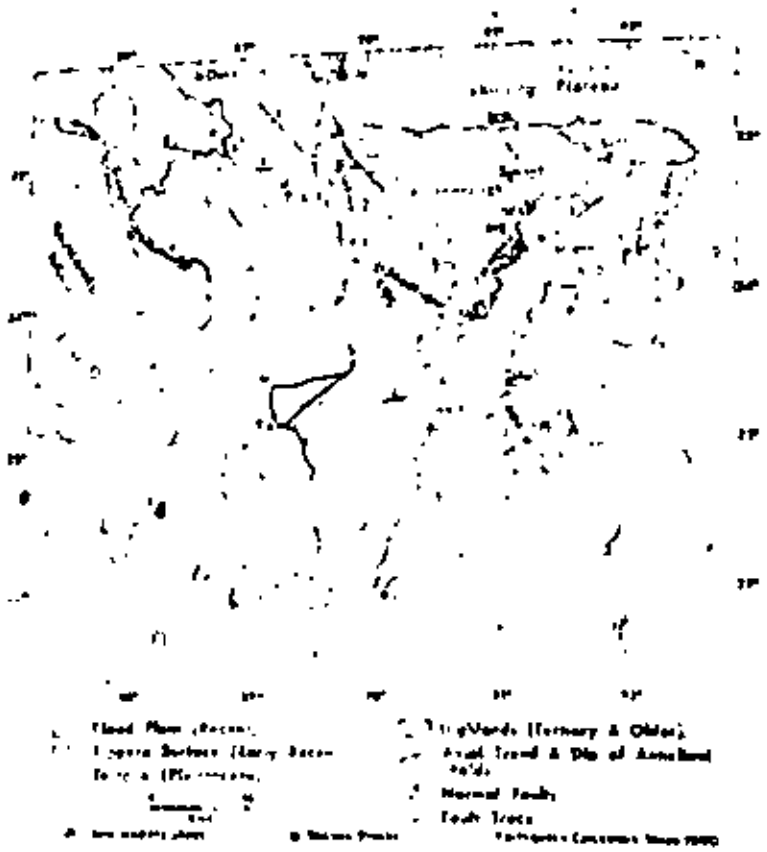
Chittagong Administrative Division.

These natural barriers that separate one region from the other necessitate proper planning to develop each of them as a separate economic unit. Each region, for instance, should have a road net of its own which can be connected with the net of the adjacent region. An well planned attempt be made to modernise ferries and also the construction of bridges wherever possible/feasible. Any overall road plan of the province which does not recognise the importance of the regional planning is bound to be unrealistic. The road system of the province can be classified as :

Trunk Roads: This system should connect atleast two regions, the capital city, atleast one port and connect an international route, such as the Asian High Ways. This system should be built with highest specification and in accordance with international standard. Such expensive route mileage should be as minimum as possible.

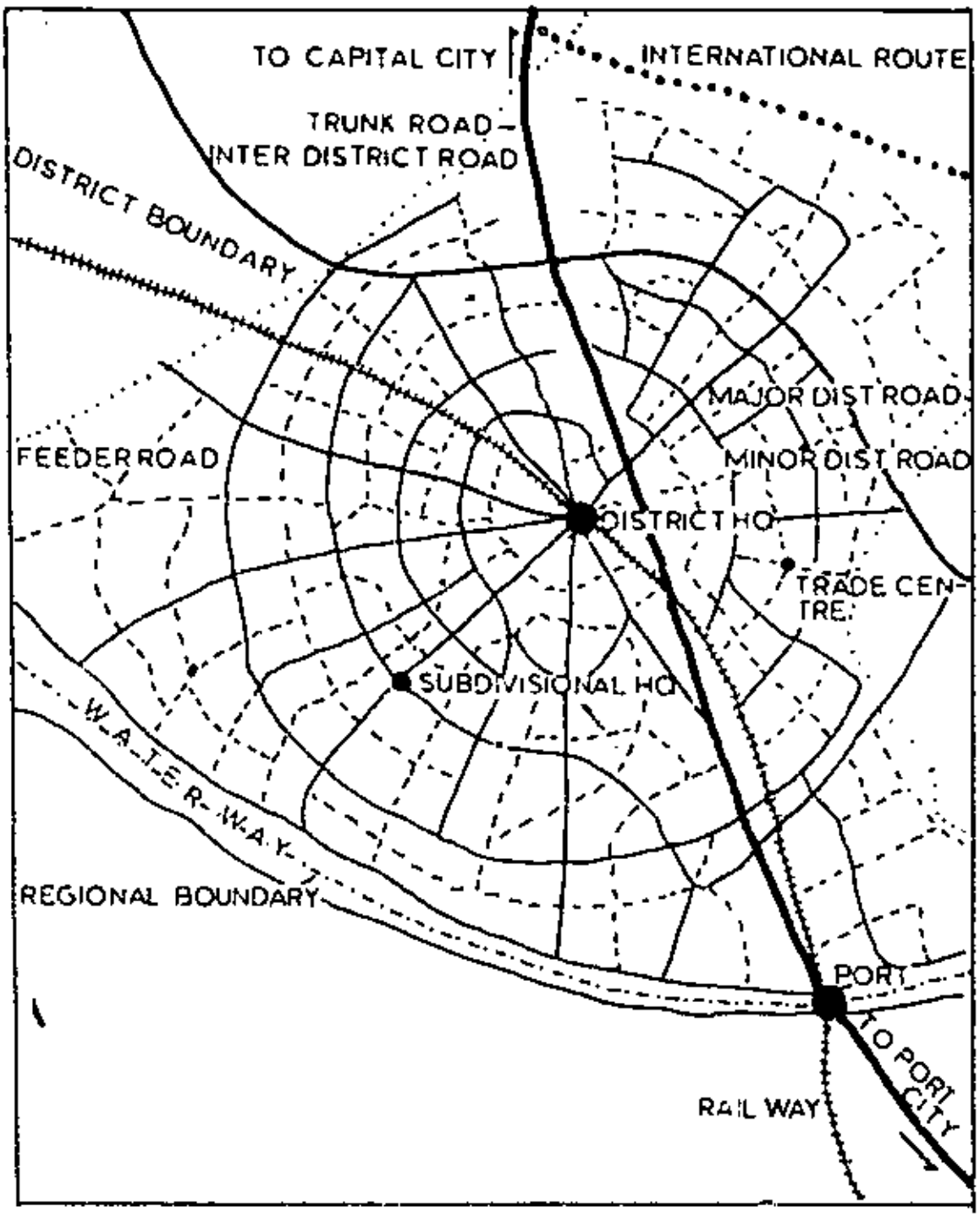
Inter-district Roads: This system will connect the Trunk road, important centres of administration, trade and commerce and atleast two neighbouring districts wherever feasible.

Major District Roads: These are the main road system of any district that will connect important centres of population, trade and commerce with the trunk route or an interdistrict route.



GEOLOGICAL MAP

MAP 2 5



A SCHEMATIC TRANSPORTATION MODEL SERVING DIFFERENT TRADE CENTRES OF A REGION

FIG. 2

Minor District Roads: These roads will connect the Thana head quarters with sub-division and other road system of the province.

Feeder Roads: Roads of short length that will link centres of population, trade and commerce, and the like with rail or water terminals or other system of roads.

Local Roads: This system will be planned and developed to form a continuous link with any other system of transportation available in the area. Local authority should be responsible for the development of such roads as per approved standard and specification.

A schematic transportation model serving different trade centres of a region has been shown in fig. 2.

CHAPTER X

SUMMARY & CONCLUSION

CHAPTER X

SUMMARY AND CONCLUSION

The intent of writing this thesis is to investigate the different modes of transportation routes in East Pakistan and their impact on trade centres. In writing this thesis, a brief historical back ground of the role of transportation routes in the formation and development of early trade centres have been discussed. It is concluded that early trade centres owe their origin to agriculture, which dates back to early settlement when the sedentary people felt the necessity for the exchange of their daily necessities, in a common accessible place of geographical centrality. Cross road position and geographical centrality are the two important factors for the emergence of such centres where different culture have mingled.

Geographically, East Pakistan being an integral part of the Indo-Pak sub-continent bestowed with its unique location and ample resources, attracted early trades from abroad and necessitate the discussion of the land ways of the Middle Ages, the Maritime traders and the role of Christian Missionaries for the opening of the environs.

The second chapter deals with the role of transportation for development, pattern and distributional early trade centres in this part of the sub-continent as late as the 18th century and it observed that early trade centres were, primarily, river oriented.

Different modes of transportation, their historical developments, principal routes, nature, direction, types, speed and service frequency; nature and volume of cargo and passenger traffic handled

and their impact on principal trade centres as well on their hinterlands have been discussed in chapter three to six. It reveals that the development of trade centres gravitate towards rail and road networks and follow the same spattern and direction due to the topographical reasons. Rail, road and waterways run almost parallel to the north south direction. East west bound road being, practically absent with the exception of Dacca- Ariche road that connects Khulna and Rajshahi division with the divisions of Dacca and Chittagong and exherts tremendous impact for the development and integration of these regions. It assures the possibility for the development of more East West bound road.

It may be argued that east west road will hamper the normal river channel causing rapid siltation of the river belts and will require a number of bridges which will involve higher costs. But the cost of bridge construction may be equated with the maintenance of the roads in long term programme for the rate of erotion of the east west embankments will be minimum than that of the north south bound. Besides, during rainy season the over fledding water will spread far into the hinter lands resulting minimum rise of water level than that of the north south that protect the water flow resulting high rise of water level causing heavy damage of crops and households.

It reveals that each of the systems of transportation has distinctive advantages of their own and necessitate the coordination of different modes of transportation routes. Accordingly, each of them has been classified for effective local and regional development.

Trade Centres have been classified according to their ranks and sizes based on their functional efficiency in chapter seven. In this classification indigenous terms have been accounted and number of banks have been taken as the basis for the determination of their sizes instead of population as reported in 1961 Census. The Census report does not reflect the true picture neither do the projected population can be the effective guide for this study. 1961 Census reflects Darshana as an urban centre[1], which is practically wrong. Darshana is not at all an urban centre . Choumohani* as per this classification should be grouped as an urban area but according to B.D.L.O it is not an urban centre. Therefore it has been grouped as Ganj a non urban centre of higher order. The number of banks that exceed can be explained as as number of urban functions of Noakhali district are performed here.

It reveals that transportation routes and trade centres are functionally correlated and depend on each other. Physical development takes place along the main transportation routes. It is also interesting to note that a definite geographic pattern of 'H' shaped for physical development, linked by an enormous water lobby in the centre and having three water antennas going into the hinterlands, emerges and dictates the location of future centres within this development frame work.

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1. OP.Cit., Ahmad, Nafis; P.315.

* It is the only exception found in this study.

Few centres have also been discussed as case study in chapter eight which reflects tremendous impact of transportation routes on their location, origin, development, morphology, functionality and explains that transportation and traffic problems or demands are created by changes in land use, while potentialities for changes in land are also enhanced by transport connections and improvements.

Any type of land use generates traffic ; any change in land use creates traffic problems and demands better transportation facilities. There is an intimate relationship between two land use linked by a constant flow of traffic. When there is a flow, there is a system which accelerates the potentialities for changes in land. Therefore, it is imperative to say that transport system is a function of land use and land use is a function of transportation system.

Transport system is vital to national economy. The utilisation of land whether for agriculture, lumbering, recreation of building will play an important role in transport demand and planning. By the careful application of control to land use planning and essential contribution can be made to the simplification and cost of transport. Traffic flow in East Pakistan developed locally as well as in the provincial level. It needs to be distributed throughout the hours of the day in a varying proportion.

Urban road traffic is the most important that needs proper attention for urban planning and , therefore, population explosion has to be considered for a realistic plan for period ahead.[1] Any improvement

1. Transport planning must always be considered in the light of long term effects otherwise it will be an unrealistic one.

in any part of the area should be considered with the whole system as it is the integral part of the area. The idea behind this planning is not only the distribution of movement but also the improvement of the environment. In preparing schemes for either a single road or a complicated road networks care must always be taken to ensure that the contemplated project is not treated in isolation but rather as an integral part of the whole transport system. The entire planning process should be regarded as a definite step in an advance of environmental progress and not just a concrete attempt to relieve congested traffic conditions.

The future patter of cities should be conceived as a patch work of environmental areas — both separated and connected by a network of distributors used for traffic and traffic only.

Location for new centres and possibilities of extending the urban facilities to the rural settlements to reduce the socio-economic and physical development gap between the urban and non urban centres. Integration of roads, railways and waterways must be looked into for saving time and for effectiveness of the communication system for overall development of the province.

APPENDIX

APPENDIX -I

ROUTES, DISTANCE, TIME & FARE
TABLE OF WATER TRANSPORT SERVICE

Route Service	Fare 1st.	2nd.	3rd.	4th	River miles Distance	Hour time taken	Service
1. Chandpur-Goalundo	29.43	17.05	6.11	4.18	95	11	Daily Mail Service from N'ganj-Goalundo
2. Dacca - Barisal	42.19	24.10	6.08	4.11	137	19Hrs.	Daily steamer service
						9-30	Dacca-N'ganj-Barisal-Pakwater way.4 time weekly
						8-10	Rocket.
3. Khulna - N'ganj	74.00	42.50	15.06	10.06	241	19-30	Rocket service 4 time weekly.
4. Narayanganj - Barisal	37.12	21.37	7.62	5.06	121	9-30	Rocket
						10-30	Daily steamer
5. Narayanganj - Chandpur	11.65	6.84	2.47	1.71	37	3-15	Rocket
						3-45	Goalundo mail
6. Narayanganj - Goalundo	32.15	18.40	6.65	4.46	132	15-30	Goalundo mail
7. Dacca - N8ganj	4.93	2.81	0.72	0.50	16	3	Daily steamer service
8. Dacca - Chandpur	16.40	9.40	2.52	1.72	53	6-30	Daily steamer service
						3-30	Pak waterway
9. Dacca - Khulna	79.06	45.31	11.74	7.85	257	19-30	Pak waterway
10. Barisal - Patuakhali	15.19	8.75	2.29	1.54	35	5-30	Daily steamer service

Route Service	Fare 1st.	2nd.	3rd.	4th.	River miles distance	Hour time taken	Service
11. Dacca - Manikganj	-	-	-	1.72	53	6-00	Steamer one alternate day
12. Chittagong-Narayanganj	84.25	48.06	16.99	11.31	203	9-30	EPSC control service.
13. Chittagong-Cox's Bazar	12.33	-	-	2.92	-	10-00	EPSC offshore island service every alternate day.

Source: Based on Pakistan River Service Time Table & Guide.

APPENDIX - II

LIST OF LAUNCH STATIONS

CLASSIFIED SHOWING THEIR ENTITLEMENT TO SIZE OF FLOATING TERMINALS/ PONTOONS.

District	Sl. No.	Name of launch stations	No. of daily launch touches verified by traffic Division.	Class of stations	Size of floating terminal/ pontoon entitled to
1	2	3	4	5	6
Dacca	1.	Katpatty	68	A	L
	2.	Kamalaghat	48	B	M
	3.	Munshiganj	106	A	L
	4.	Taltala	50	A	L
	5.	Saidpur	54	A	L
	6.	Ramkrishnadi	54	A	L
	7.	Lohajang	20	B	M
	8.	Manikganj	12	C	S
	9.	Sree Nagar	26	D	M
	10.	Narsingdi	10	C	S
	11.	Betka	50	A	L
	12.	Abdullapur	50	A	L
	13.	Gazaria	28	D	M
	14.	Gopaldi	10	C	S
	15.	Lakhpur	10	C	S

District	Sl. No.	Name of launch	No. of daily launch touches verified by stations traffic Division.	Class of stations	Size of floating terminal/ pontoon entitled to
1	2	3	4	5	6
Dacca	16.	Dadyar Bazar	18	B	M
	17.	Ibrahimpur	10	C	S
	18.	Shaker Nagar	54	A	L
	19.	Alampur	26	B	M
	20.	Balukanda	12	C	S
	21.	Kalirtok	12	C	S
	22.	Saram	26	B	M
	23.	Bhaggyakul	40	B	M
	24.	Kalakopa	22	B	M
	25.	Kuchimara	54	A	L
	26.	Mawa	20	B	M
	27.	Narundi	12	C	S
	28.	Nuria	12	C	S
	29.	Charigram	12	C	S
	30.	Ghuata	12	C	S
	31.	Jhanna	12	C	S
	32.	Kunda	12	C	S
	33.	Nimbari	12	C	S
	34.	Paragram	12	C	S

District	Sl. No.	Name of launch stations	No. of daily launch touches verified by traffic Division.	Class of stations	Size of floating terminal/ pontoon entitled to
1	2	3	4	5	6
25 Dacca	35.	Patiljhap	12	C	S
	36.	Durgarhat	10	C	S
	37.	Patrail	18	B	M
	38.	Tala	16	C	S
	39.	Bhower	20	B	M
	40.	Ulpur	16	C	S
Barisal	41.	Jhalakati	40	B	M
	42.	Hularhat	30	B	M
	43.4	Patuakhali	40	B	M
	44.	Kalchiti	30	B	M
	45.	Swarupkati	30	B	M
	46.	Bauaripara	16	C	S
	47.	Kawkhali	30	B	M
	48.	Inderhat	30	B	M
	49.	Nandibazar	16	C	S
	50.	Barguna	18	B	M
	51.	Bisla	10	C	S
	52.	Shahaberhat	18	B	M
	53.	Shafipur	18	B	M

District	Sl. No.	Name of launch stations	No. of daily launch touches verified by traffic Division.	Class of stations	Size of floating terminal/ pontoon entitled to
1	2	3	4	5	6
Barisal	54.	Nandirhat	22	B	M
	55.	Amua	10	C	S
	56.	Aurabania	10	C	S
	57.	Bakai Nagar	14	C	S
	58.	Botagi	12	C	S
	59.	Bhedarganj	10	C	S
	60.	Bhandaria	20	B	M
	61.	Bogs	28	B	M
	62.	Chowdhuryhat	20	B	M
	63.	Faisatola	16	C	S
	64.	Ihalta	28	B	M
	65.	Jaladi	14	C	S
	66.	Jululbar	30	B	M
	67.	Pakistanhat	14	C	S
	68.	Rubiniganj	24	D	M
	69.	Tushkhali	20	B	M
	70.	Jhilna	28	B	M
	71.	Baharchar	10	C	S

District	Sl. No.	Name of launch stations	No. of daily launch touches verified by traffic Division.	Class of stations	Size of floating terminal/ pontoon entitled to
1	2	3	4	5	6
Barisal	72.	Kalipur	20	B	M
Comilla	73.	Miar Bazar	10	C	S
	74.	Ashuganj	14	C	S
	75.	Satnal	24	B	M
	76.	Ramchandrapur	12	C	S
	77.	Homra	18	B	M
	78.	Daninagar	10	C	S
	79.	Goharnaghat	10	C	S
	80.	Nandinagar	12	C	S
	81.	Matlab Bazar	10	C	S
	82.	Ramkrishnapur	14	C	S
	83.	Bishnadi	12	C	S
	84.	Kanordi	28	B	M
	85.	Machuakhal	18	B	M
	86.	Mohanpur	26	B	M
	87.	Saliganj	10	C	S
	88.	Krishna Nagar	20	B	M
	89.	Kaligram	20	B	M
	90.	Sreenaddi	16	C	S
Faridpur	91.	Madaripur	20	B	M

District	Sl. No.	Name of launch stations	No. of daily launch touches verified by traffic Division.	Class of stations	Size of floating terminal/ pontoon entitled to
1	2	3	4	5	6
Faridpur	92.	Sindhiaghat	20	B	M
	93.	Kabirajpur	18	B	M
	94.	Manikdah	30	B	M
	95.	Suresmar	14	C	S
	96.	Tekerhat	14	C	S
	97.	Faridpur	14	C	S
	98.	Patty	36	B	M
	99.	Gopalganj	18	B	M
	100.	Bhatiapara	10	C	S
	101.	Khasherhat	12	C	S
	102.	Mandalalpur	16	C	S
	103.	Gangaprashad	12	C	S
	104.	Ghariasr	12	C	S
	105.	Shaikhpur	10	C	S
Khulna	106.	Gazirhat	12	C	S
	107.	Dagarhat	20	B	M
	108.	Morrelganj	28	B	M
	109.	Batiaghata	20	B	M
	110.	Birat	26	B	M
	111.	B.S. Ghat	24	B	M
	112.	Ghashiakhali	22	B	M

District	Sl. No.	Name of launch stations	No. of daily launch touches verified by traffic Division.	Class of stations	Size of floating terminal/ pontoon entitled to
1	2	3	4	5	6
Khulna	113.	Paikgacha	12	C	S
	114.	Batbunia	18	B	M
	115.	Assasuni	16	C	S
	116.	Satpar	16	C	S
	117.	Dalcopa	12	C	S
	118.	Baroari	18	B	M
Jessore	119.	Tona/Bardia	48	B	M
	120.	Malia	28	B	M
	121.	Kulsur	16	C	S
	122.	Joynagar	12	C	S
	123.	Baraipara	16	C	S
	124.	Jogarda	16	C	S
Sylhet	125.	Chhatak	12	C	S
	126.	Ajmiriganj	10	C	S
	127.	Sunamganj	16	C	S
	128.	Saahna	16	C	S
	129.	Markuli	10	C	S

District	Sl. No.	Name of launch stations	No. of daily launch touches verified by traffic Division.	Class of stations	Size of floating terminal/ entitled to
1	2	3	4	5	6
Sylhet	130.	Sherpur	10	C	S
	131.	Mamumukh	10	C	S
	132.	Abdullahpur	12	C	S
Mymensingh	133.	Bangalpara	12	C	S
Pabna	134.	Sirajganj	12	C	S

Source: IWTA, Annual Traffic Report 1966-67 & IWTA Progressive Report 1970.

APPENDIX - III

ROUTES, DISTANCE & TIME TAKEN IN PAKISTAN EASTERN RAILWAY

Route	Miles	Time taken Hours & Minutes	Via
Narayanganj-Dacca	9.34	0 - 50	-
Dacca - Khulna	368	13 - 55*	Jagarnathganj-Sirajganj Ghat
" "	"	17 - 50	" "
" "	-	29 - 00*	Narayanganj-Goalundo
Dacca - Rajshahi	253	12 - 20*	Jagarnathganj-Sirajganj
" "	"	14 - 15	" "
Dacca-Jagarnathganj	133	5 - 30*	" "
" "	"	6 - 40	" "
Dacca - Jessore	334	12 - 42*	" "
" "	"	16 - 32	" "
" "	-	27 - 20	Narayanganj -Goalundo
Dacca-Faridpur	326	24 - 50	" "
" "	-	19 - 30	Jagarnathganj-Sirajganj
Dacca-Kushtia	271	15 -30	" "
" "	-	23 - 30	Narayanganj-Goalundo
Dacca-Goalundo	315	20 - 25	Narayanganj-Goalundo
Dacca-Ishurdi	216	9 - 00*	Jagarnath-Ganj-Sirajganj
" "	-	11 - 45	" "
Dacca-Pabna	234**	11 - 00*	" "
" "	-	13 - 30	" "

Route	Miles	Time taken Hours/Minutes	Via
Dacca-Natore	238	17 - 57	Jagarnathganj-Sirajganj
Dacca-Bogra	203	12 - 4	Bahadurabad-Tistamukhghat
Dacca-Dinajpur	274	14 - 45	" *
Dacca - Rangpur	232	12 - 56	" "
Chittagong-Sylhet	235	7 - 40	- -
Dacca-Chittagong	293.25	7 - 15	- -
Dacca - Sylhet	198	9 - 55	Akhaura
Dacca-Mymensingh	76.25	3 - 15	-
Dacca-Bahadurabad	137.25	6 - 50	-
Chittagong-Khulna	534	25 - 35	Chandpur-Goalundo+
Chittagong-Goalundo	480	17 - 00	-
Chittagong - Rajshahi	418	21 - 45	Jagarnathganj-Sirajganjghat.
Chittagong - Dinajpur	439	23 - 15	Bahadurabad-Tistamukhghat
Rajshahi-Khulna	189	6- 35	- -
Dacca-Comilla	117	3 - 30	- -
Dacca-Chandpur	144	7 - 30	- -
Dacca-Sirajganj	166	6-40	- -

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* Travelled by fast moving train: Sundarban.

** Including 18 miles Bus route.

\+ 12 - 20 minutes Steamer journey

Based on Railway Time Table and other information.

APPENDIX IV

PAKISTAN EASTERN RAILWAY FARE TABLE

Sl.No.	Name of Station From	To	A/C Class	First Class	Second class	Third class	Actual miles	Miles charged	Remarks
1.	Dacca	Narayanganj	6.70	1.70	0.70	0.50	10	10	
2.	Dacca	Khulna	77.10	45.30	26.22	18.56	368	423	
3.	Dacca	Rajshahi	58.20	35.80	17.72	12.66	253	283	
4.	Dacca	Jagannathganj	34.90	22.10	8.62	6.06	133	133	
5.	Dacca	Jessore	72.50	43.00	24.12	17.16	334	389	
6.	Dacca	Faridpur	71.40	42.50	23,62	16.76	326	381	
7.	Dacca	Kushtia	64.00	38.80	20.32	14.46	271	326	
8.	Dacca	Goalunda	69.90	41.70	23.02	16.26	315	370	
9.	Dacca	Iswardi	53.20	33.40	15.42	11.06	216	246	
10.	Dacca	Pabna	-	-	-	-	-	-	Detrain from Iswardi and then by Bus for about 18 miles, fare being 0.75 and time taken about one hour.
11.	Dacca	Natore	56.10	34.80	16.82	11.96	238	268	
12.	Dacca	Bogra	50.70	32.10	14.32	10.26	203	228	
13.	Dacca	Dinajpur	60.30	36.90	18.72	13.22	274	291	
14.	Dacca	Rangpur	54.60	34.10	16.12	11.42	232	257	
15.	Dacca	Chittagong	61.50	37.50	19.22	13.66	294	308	
16.	Dacca	Sylhet	48.60	31.10	13.42	9.56	198	212	
17.	Dacca	Mymensingh	23.30	13.00	5.22	3.00	77	77	
18.	Dacca	Bahadurabad	35.80	22.90	8.92	6.36	138	158	
19.	Dacca	Comilla	34.50	21.80	8.52	6.06	117	131	
20.	Dacca	Chandpur	39.40	25.70	10.12	7.16	144	158	
21.	Dacca	Shirajganj	46.20	29.80	12.42	8.96	166	196	
22.	Chittagong	Sylhet	51.70	32.60	14.82	10.56	235	235	
23.	Chittagong	Khulna	108.30	59.40	37.82	26.76	534	613	
24.	Chittagong	Rajshahi	83.00	48.30	28.92	20.46	418	467	
25.	Chittagong	Dinajpur	85.80	49.70	30.12	21.36	439	488	
26.	Rajshahi	Khulna	48.80	31.20	13.52	9.66	189	214	

Source : Based on E.P. Railway Time Table

APPENDIX V

BRTC COACH SERVICE - FREQUENCY, FARE & TIME TABLE

STATION From	To	Time taken	FARE Adult	Children	Frequency
Dacca	Manikganj	1-30 hrs	5.00	3.50	1
Dacca	Aricha	2-30 hrs	6.00	4.00	2
Dacca	Goalanda	4-00 hrs	8.10	5.05	*
Dacca	Faridpur	5-30 hrs	12.00	8.00	1
Dacca	Khulna	9-30 hrs	25.00	18.00	1
Dacca	Jessore	8-45 hrs	22.00	16.00	1
Dacca	Kushtia	8-00 hrs	18.00	13.00	1
Dacca	Pabna	5-30 hrs	15.00	11.00	1
Dacca	Rajshahi	6-30 hrs	25.00	18.00	1
Dacca	Natore	7-00 hrs	20.00	15.00	1
Dacca	Bogra	8-45 hrs	20.00	15.00	1
Dacca	Dinajpur	11-30 hrs	28.00	21.00	1
Dacca	Rangpur	9-30 hrs	25.00	18.00	1
Dacca	Barisal	6-40 hrs	22.00	16.00	**
Dacca	Madaripur	-	-	-	-
Chittagong	Cox's Bazar	3-30 hrs	10.00	7.00	4 ***
Chittagong	Rangamati	3-00 hrs	4.00	3.00	-
Chittagong	Kaptai	-	3.00	2.50	-

Note: Fare in Rupee

* Including Aricha - Goalanda Ferry service.

** Time as well as fare taken for the journey being uneconomical in comparison to water services, BRTC has stopped their service.

*** 20 Seater Fiat Luxury Coach service connects the port city of Chittagong with pleasant tourist resorts of Kaptai, Rangamati and Cox's Bazar.

Source: BRTC Time Table and other information.

APPENDIX - VI

PRINCIPAL TRADE CENTRES SHOWING NUMBER OF BANKS, CLASS IN WHICH THEY HAVE BEEN GROUPPED & PRINCIPAL INDIGENOUS COMMODITIES THEY HANDLE

Trade Centres	District	Principal indigenous commodities handled	Nos.of Banks	Class
1. Boda	Dinajpur	Rice, Jute, Pulses, Hides & Skins	1	Bazar*
2. Baraupur	"	" "	1	"
3. Charkai	"	" "	1	"
4. Birganj	"	" "	1	"
5. Rubea	"	" "	1	"
6. Phulbari	"	" "	1	"
7. Pirganj	"	" "	1	"
8. Biral	"	Rice, Jute	x	"
9. Ulipur	Rangpur	Jute, Tobacco, Hides, Skins & Pulses	1	"
10. Nageswar	"	" "	1	"
11. Palasbari	"	Jute, Tobacco, Potato, Mustard	1	"
12. Shaapur	"	" "	1	"
13. Gangachara	"	Jute, Mustard, Rice, Pulses	1	"
14. Haragacha	"	" "	1	"
15. Pargacha	"	" "	1	"
16. Jaldhaka	"	" "	1	"

* Bazar includes 0-1 Bank.

Trade Centres	District	Principal indigenous commodities handled	Nos. of Banks	Class
17. Rukindipur	Bogra	Rice, Potato, Pulses	1	Bazar
18. Sheriakandi	"	" "	1	"
19. Chandaikona	"	" "	1	"
20. Chakcutrapur	"	Hides, Skins, Rice & Pulses	x	"
21. Sonatola	"	Rice, Jute	x	"
22. Mahadebpur	Rajshahi	Rice, Jute, Mango & Potato	1	"
23. Muktarpur	"	" "	1	"
24. Raninagar	"	Jute	1	"
25. Nasirpur	"	Rice, Jute	1	"
26. Rohanpur	"	Rice, Jute, Hides & Skins	1	"
27. Prosadpur	"	" "	1	"
28. Shardah	"	Mango, Lichu	1	"
29. Arani	"	Rice, Jute, Potato & Mango	1	"
30. Gurudaspur	"	" "	1	"
31. Naohata	"	" "	1	"
32. Godagari	"	Rice	x	"
33. Durgapur	"	Jute	x	"
34. Charghat	"	Mango, Turmeric, Khair	x	"
35. Shahjadpur	Pabna	Handloom Textiles, Rice, Shon	1	"
36. Nakalia	"	Rice, Linseed, Potato, Sugarcane	x	"
37. Dhangura	"	" "	1	"
38. Chatmohan	"	" "	1	"
39. Shahzadpur	"	" "	1	"
40. Khoksa	Kushtia	Jute, Rice, Turmeric, Gram, Linseed	1	"

Trade Centres	District	Principal indigenous commodities handled	Nos. of Banks	Class
41. Gagni	Kushtia	Khajurgur, Rice, Pulses	1	Bazar
42. Dattanagar	"	Khajurgur, Sugarcane, Rice, Pulses, Jute	1	"
43. Jibannagar	"	" "	1	"
44. Jagati	"	Sugarcane, Rice, Pulses	1	"
45. Daruana	"	Sugarcane, Rice, Pulses	2	Bazar
46. Sail Kupa	Jessore	Rice	1	"
47. Baradia	"	Rice, Khajurgur, Jute	1	"
48. Basundia	"	" "	x	"
49. Keshabpur	"	" "	1	"
50. Barobazar	"	" "	x	"
51. Lohagara	"	" "	1	"
52. Safdarpur	"	Rice, Khajurgur, Jute, Pulses, Pan	x	"
53. Rajapur	Khulna	Jute	x	"
54. Rampal	"	Rice, Jute	1	"
55. Patkelghata	"	" "	1	"
56. Kapil Muni	"	" "	1	"
57. Assasuni	"	" "	1	"
58. Boga Bandar	Barisal	Rice	x	"
59. Nalchiti	"	Betalnut, Rice, Cocoanut	1	"
60. Patharhat	"	Betalnut, Rice, Cocoanut	1	"
61. Gaurnadi	"	Rice, Jute, Kapok	1	"
62. Turki	"	Rice, Jute	x	"
63. Bhanderia	"	" "	1	"
64. Char Fasnion	"	" "	1	"
65. Gulachipa	"	" "	1	
66. Chakhar	"	" "	1	
67. Ghaor Bazar	Faridpur	Jute, Rice, Onion, Garlic, Chilli		
68. Takerhat	"	Jute, Ri		

Trade Centres	District	Principal indigenous commodities handled	Nos. of Banks	Class
69. Rajoir	Faridpur	Jute, Rice	1	Bazar
70. Khan Khanapur	"	" "	1	"
71. Hari Komaria	"	" "	1	"
72. Pangsha	"	" "	x	"
73. Tepa Khola	"	Jute, Rice, Pulses	x	"
74. Kamarkhali	"	Jute, Rice	1	"
75. Charmugria	"	Jute, Rice, Shon, Sesamum	x	"
76. Bausi	Mymensingh	Jute	x	"
77. Dewanganj Bazar	"	Jute, Sugarcane, Mustard	1	"
78. Gopalpur	"	Jute	x	"
79. Jamuki	"	Jute	x	"
80. Elasin	"	Jute	x	"
81. Ostogram	"	Rice, Fish, Sweet, Potato, Cheese	x	"
82. Karimganj	"	Jute, Rice, Chili, Mustard	x	"
83. Charpara	"	Jute, Rice	1	"
84. Halwarghat	"	Jute, Rice, Chili	1	"
85. Islampur	"	" "	1	"
86. Kathiadi	"	" "	1	"
87. Atharabari	"	" "	1	"
88. Madupur	"	Timber, Mumbi Leaves	1	"
89. Phulbaria	"	Jute, Rice, Chili	1	"
90. Tarakanda	"	Jute, Rice	1	"
91. Maidgyar Bazar	Dacca	Jute, Rice	1	"
92. Fatulla	"	" "	1	"
93. Kaliakair	"	Rice, Jute, Onion, Pulses	1	"
94. Shasipur	"	" "	1	"

Trade Centres	District	Principal indigenous commodities handled	Nos. of Banks	Class
95. Kaigaratul	Dacca	Rice, Jute, Onion Pulses, Garlic	x	Bazar
96. Dhaggokul	"	Fish	x	"
97. Tarpasa	"	Jute, Rice, Fish	x	"
98. Geor	"	" "	x	"
99. Kaoraid	"	Jute, Jack	x	"
100. Madanganj	"	Rice, Jute	1	"
101. Gopaldibazar	"	" "	1	"
102. Madhabdi	"	" "	1	"
103. Sibalaya (Aricha)	"	" "	1	"
104. Sailpurhat	"	Rice, Jute	1	"
105. Kapasia	"	" "	1	"
106. Jahajang	"	Fish, Rice, Jute	1	"
107. Kerantganj	"	" "	1	"
108. Khanepur	"	Rice, Jute	1	"
109. Nurapara	"	Rice, Jute	1	"
110. Dhamrai	"	Rice, Jute, Pulses, Jack	1	"
111. Sreenagar	"	Rice, Jute	1	"
112. Mirsarai	Chittagong	Rice	1	"
113. Dhoom	"	" "	x	"
114. Satkania	"	" "	1	"
115. Anirabad	"	" "	1	"
116. Barabakund	"	" "	1	"
117. Katgarbazar	"	Rice, Timber	1	"
118. Fatchpur	"	Rice	1	"
119. Juldia	"	" "	1	"
120. Fatikchari	"	" "	1	"
121. Santirhat	"	Rice, Pulses	1	"

Trade Centres	District	Principal indigenous commodities handled	Nos. of Banks	Class
122. Rowa	Chittagong	Rice, Pulses, Bamboo	1	Bazar
123. Sitakund	"	" "	1	"
124. Ichakhali	"	" Rice, Pulses	1	"
125. Rangunia	"	Rice	1	"
126. Dhumat	"	" "	1	"
127. Teknaf	"	Fish	1	"
128. Rangarh	Chittagong H.T.	Rice, Cotton, Sesamum	x	"
129. Lama	"	" "	x	"
130. Alikadam	"	Rice, Bamboo, Cotton	x	"
131. Sachna Bazar	Sylhet	Jute, Rice	1	"
132. Baralekhan	"	Jute, Rice, Bamboo, Tea, Shingles	1	"
133. Goplar Bazar	"	Jute, Rice	1	"
134. Juri	"	Jute, Rice, Bamboo, Tea	1	"
135. Khadim Nagar	"	Jute, Rice, Pineapple	1	"
136. Raniganjbazar	"	" "	1	"
137. Chhaglibazar	"	" "	1	"
138. Shahji Bazar	"	Jute, Rice	1	"
139. Asraaat Nagar	"	" "	1	"
140. Shamsernagar	"	Tea, Jute, Rice, Betal leaf(Pan)	1	"
141. Rajanagar	"	Jute, Rice, Pineapple	1	"
142. Tajpur	"	" "	1	"
143. Gaola Bazar	"	" "	1	"
144. Ramchandrapur	Comilla	Jute, Rice	1	"
145. Barua	"	" "	1	"
146. Chanddagram	"	" "	1	"

Trade Centres	District	Principal indigenous commodities handled	Nos.of Banks	Class
147. Debidwar	Comilla	Jute, Rice	1	Bazar
148. Dharampur	"	" "	1	"
149. Gouripurbazar	"	" "	1	"
150. Hachua	"	" "	1	"
151. Muradnagar	"	" "	1	"
152. Quaba	"	" "	1	"
153. Sarail	"	" "	1	"
154. Sonagazi	Noakhali	Rice, Jute, Oilseed	1	"
155. Senapur	"	Rice, Chilli, Pulses	1	"
156. Chandraganj	"	" "	1	"
157. Chhagalnaia	"	" "	1	"
158. Sonaimuri	"	" "	1	"
159. Parua Bar	"	" "	1	"

Trade Centres		District	Principal indigenous commodities handled	Nos. of Banks	Class
1.	Setabganj	Dinajpur	Rice, Sugarcane, Potato, Jute	2	Ganj*
2.	Chirir Bandar	"	Rice, Sugarcane, Jute, Pulses	2	"
3.	Panchagar	"	" "	3	"
4.	Alas Nagar	Rangpur	Jute	2	"
5.	Gobindganj	"	"	2	"
6.	Mahimaganj	"	Sugarcane, Jute	2	"
7.	Domar	"	Jute, Tobacco, Ginger	2	"
8.	Badarganj	"	" "	2	"
9.	Panchbibi	Bogra	Rice, Potato, Pulses, Hides & Skins	2	"
10.	Akkelpur	"	" "	2	"
11.	Joypurhat	"	Sugarcane, Jute, Rice, Potato	2	"
12.	Jamalganj	"	" - "	2	"
13.	Shibganj	Rajshahi	Rice, Mustard, Potato, Mango, Pan, Jute	2	"
14.	Ashanganj (Atrai)	"	Jute	2	"
15.	Singra	"	Rice, Jute, Mango	2	"
16.	Marian	"	Sugarcane, Rice, Jute, Mango	2	"
17.	Gopalpur	"	" "	3	"
18.	Alam Danga	Kushtia	Khejurgur, Rice, Cattle, Turmeric, Pulses, Jute, Hides & Skin	2	"
19.	Khrasara	"	Rice, Gram, Groundnut, Jute	2	"

* Ganj includes 2-4 Bank.

Trade Centres		District	Principal indigenous commodities handled	Nos.of Banks	Class
20.	Jhikargacha	Jessore	Khejurgur, Rice, Pulses, Jute, Hides & Skin, Betalnut, Potato.	2	Ganj
21.	Kaliganj	"	" "	2	"
22.	Noapara	"	" "	4	"
23.	Rupganj	"	" "	x	" *
24.	Morrelganj	Khulna	Rice	2	"
25.	Rupsa	"	Jute, Rice, Hides & Skin	2	"
26.	Kaliganj	"	" "	2	"
27.	Mirer Danga	"	" "	2	"
28.	Phultola	"	" "	2	"
29.	Khepupara	Patuakhali	Fish, Rice	2	"
30.	Bargund	"	Rice, Chilli, Betalnut	3	"
31.	Kauri Khara	Barisal	" "	2	"
32.	Swarupkati	"	" "	2	"
33.	Char Nugria	"	" "	2	"
34.	Gurhan Ganj	Faridpur	Jute, Rice, Onion, Chilli	2	"
35.	Kuladi	Barisal	Rice, Chilli, Betalnut	2	"
36.	Goalnari	Faridpur	Jute, Rice, Fish	2	"
37.	Shaugs	"	Jute, Rice, Pulses	2	"
38.	Sara	Pabna	Rice, Linseed, Potato, Sugarcane	2	"
39.	Ullapara	"	Rice, Shon, Pulses, Jute	3	"
40.	Bajiganj	Comilla	Jute, Rice, Chilli, Pulses	4	"
41.	Daulatganj	"	Jute, Poultry, Rice, Chilli	2	"
42.	Companyganj	"	Jute, Rice, Pulses	2	"

*. Due to nearness to the Sub-divisional headquarter's at Narail where the banking services are performed.

Trade Centres		District	Principal indigenous commodities handled	Nos.of Banks	Class
44.	Daudkandi	Comilla	Jute, Rice, Pulses	2	Ganj
45.	Matlabganj	"	" "	2	"
46.	Chandina	"	Jute, Rice, Pulses, Textile	2	"
47.	Akhaura	"	Jute, Pineapple	2	"
48.	Ashuganj	"	Jute, Rice	3	"
49.	Laksham	"	Jute, Poultry, Rice, Chilli, Sugarcane	4	"
50.	Zakiganj	Sylhet	Jute, Rice	2	"
51.	Balaganj	"	" "	2	"
52.	Shaestaganj	"	" "	2	"
53.	Nabiganj	"	" "	2	"
54.	Kulaura	"	Jute, Rice, Tea, Bamboo Pineapple	2	"
55.	Ajmerganj	"	Jute, Rice, Sweet, Potato, Fish	2	"
56.	Bariachong	"	Rice, Fish	3	"
57.	Biswanath	"	" "	3	"
58.	Fenchuganj	"	Rice, Fish, Bamboo	3	"
59.	Sabuganj	"	Rice	3	"
60.	Khayrtganj	"	Jute, Rice, Hides & Skin	2	"
61.	Lakshmipur	Noakhali	Betelnut, Chilli, Pulses	2	"
62.	Hatiya	"	Rice, Chilli	2	"
63.	Basherhat	"	Rice, Chilli, Betelnut, Pulses	3	"
64.	Chowmohani	"	Jute, Rice, Handloom, Textiles, Chilli, Linseed Hides & Skin	8*	"
65.	Begumganj	"	Rice, Oilseed	2	"

* According to BDLG do not fall within the class urban. Therefore, the author has classed it as Ganj though the number of banks exceed. It is probably due to the nearness to Maijdicourt and directly serve the administrative headquarters. However it is the only exception.

Trade Centres	District	Principal indigenous commodities handled	Nos.of Banks	Class
66. Raipur	Noakhali	Betelnut, Chilli	3	Ganj
67. Mirkadim	Dacca	Rice, Chilli, Banana, Potato, Pulses, Ginger	4	"
68. Kingira	"	Rice, Pulses, Jute	2	"
69. Savar	"	Jack, Rice, Jute, Dairy products	2	"
70. Daburhat	"	Handloom Textiles	2	"
71. Charpalas	"	Jute, Rice, Pulses	3	"
72. Dohasari	Chittagong	Bamboo, Tobacco, Vegetables	3	"
73. Hathasari	"	Rice	3	"
74. Patiya	"	Salt, Rice	3	"
75. Moiskhal (Gorakghata)	"	Pan, Fish(Dried)	2	"
76. Kalurghat	"	Rice, Fish	2	"
77. Sandiv	"	Rice, Pulses	2	"
78. Raozan	"	" "	2	"
79. Bandarban	"	Rice, Bamboo, Sesamum	2	"
80. Ishwerganj	Mymensingh	Jute, Rice, Tobacco, Mustard	2	"
81. Mirjapur	Tangail	Jute, Rice, Mustard	2	"
82. Jariajanjail	Mymensingh	" "	2	"
83. Kuliarchar	"	Fish	2	"
84. Mohanganj	"	Rice, Fish, Pulses	2	"
85. Nandina	"	Jute, Rice, Pulses	2	"
86. Sharishabari	"	Jute, Gram, Mustered, Pulses	3	"
87. Gaffargaon	"	Jute, Rice, Jack, Aichu, Cattle	3	"

Trade Centres	District	Principal indigenous commodities handled	Nos. of Banks*	Class of Bandar†
1. Parbatipur	Dinajpur	Rice, Jute, Pulses, Hides & Skins	4	C**
2. Lalmanirhat	Rangpur	Jute, Tobacco, Potato, Mustard	4	"
3. Saidpur	"	Jute, Tobacco, Mustard, Sugarcane, Pulses	2	"
4. Santahar	Bogra	Rice, Potato, Pulses, Hides & Skins	2	"
5. Ishurdi	Pabna	Rice, Turmeric, Sugarcane, Pulses	5/1+	"
6. Chalna	Khulna	Jute, Rice, Hides & Skins	3	"
7. Mongla	"	Jute, Rice, Hides & Skins	4	"
8. Cox's Bazar	Chittagong	Fish,	7	"
9. Sirajganj	Pabna	Jute, Rice, Fish, Shon, Chilli	9/1	TC++
10. Kumarkhali	Kushtia	Jute, Rice, Handloom	2	"
11. Jhalakati	Barisal	Betelnut, Rice, Cattle, co-conut	3	"
12. Bhairabbazar	Mymensingh	Jute, Rice, Onion, Garlic	7	"
13. Brahmanbaria	Comilla	Jute, Pulses, Rice, Hides & Skins	7	"
14. Chandpur	"	Jute, Chilli, Fish, Pulses	15/2	"
15. Madaripur	Faridpur	Jute, Rice, Pulses	3	"
16. Gopalganj	"	Rice, Sesame, Pulses	4	"

† Bandar based on Transportation facilities.

* Number of banks have been accounted only to determine their sizes.

** Communication centres.

++ Collecting and Distributing centre.

+ Schedule bank/banks dealing with foreign exchange.

Trade Centres	District	Principal indigenous commodities handled	No. of Banks 10- 20	Class Shahar
1. Dinajpur	Dinajpur	Rice, Hides and Skins, Mango.	10/1	M1
2. Bogra	Bogra	Jute, Tobacco, Ginger	13/3	"
3. Rajshahi	Rajshahi	Rice,Mustard,Potato, Mango,Pan,Jute	15/4	"
4. Rangpur	Rangpur	Jute, Tobacco,Rice, Hides and Skins, Potato.	10/3	"
5. Pabna	Pabna	Rice,Turmeric,Hides and Skins.	11/4	"
6. Faridpur	Faridpur	Jute, Rice, Hides & Skins.	10	"
7. Jessore	Jessore	Rice,Hides & Skins, Sugarcane,Fish	13/3	"
8. Barisal	Barisal	Rice, Hides & Skins, Sesamum, pulses.	10/1	"
9. Comilla	Comilla	Textiles, Rice,Hides & Skins.	17/1	"
10.Sylhet	Sylhet	Rice,Bamboo, Shingles.	14/4	"
11.Mymensingh	Mymensingh	Jute, Rice,Mustard, pulses.	13/3	"
12.Kushtia	Kushtia	Jute, Rice,Turmeric, Linseeds,Hides& Skins.	11	"
13.Gaibandha	Rangpur	Jute,Turmeric,Hides & Skins, Mustard.	7/1	M2
14.Silphamari	Rangpur	Jute,Tobacco,Turmeric, Mustard, Ginger.	6/1	"
15.Thakurgao	Dinajpur	Sugarcane,Hides & Skins	6	"
16.Nator	Rajshahi	Rice,Jute,Turmeric.	6	"
17.Chapai Nawabganj	Rajshahi	Rice,Mango,Lichis, Pulses,Brass and Bell metal-ware.	6	"
18.Nowgaon	Rajshahi	Jute,Tobacco,Ganjar, Ham, Mustard.	7/1	"
19:Bagerhat	Khulna	Kittel-nut,Pulses, Rice,Coconut.	7/1	"
20.Potuakhali	Potuakhali	Rice,Hides & Skins, Chili.	7	"
21.Moulvi Bazar	Sylhet	Rice	6	"

M1 : Municipality of the first order.

M2: Municipality of the second order.

Trade Centres	District	Principal indigenous commodities handled	No.of Banks less than 10	Class Shahar*
22. Feni	Noakhali	Rice,Chili, Pulses, Mustard,Pan,Hides & Skins.	6	M2
23. Jamalpur	Mymensingh	Jute,Gram,Tobacco, Sesamum,Mustard.	6	"
24. Kishorganj	Mymensingh	Jute,Rice,Sugarcane, Mustard,Potato,Pulses.	6	"
25. Tangail	Tangail	Jute,Hides & Skins	7	"
26. Sherpur	Mymensingh	Jute,Rice	2	M2*
27. Kurigram	Rangpur	Jute,Mustard,Rice, Pulses.	4	M3
28. Kotchandpur	Jessore	Khejur Gur,Gram, Rice Sugarcane,Mustard.	3	"
29. Narail	Jessore	Rice,Pulses, Fish	2/1	"
30. Meherpur	Jessore	Khejur Gur,Gram Rice Mustard,Sugarcane.	1	"
31. Magura	Jessore	Jute,Pulses,Rice, Earthen Pottery	4	"
32. Jhenida	Jessore	Jute,Rice,Pineapple	4	"
33. Meherpur	Kushtia	Mango	4	"
34. Chuadanga	Kushtia	Sugarcane,Khejurgur, Pulses.	5	"
35. Satkhira	Khulna	Rice,Pan,	5	"
36. Bhola	Barisal	Rice, Chili,Betelnut, Pulses.	3	"
37. Pirojpur	Barisal	Rice,Chili,Betelnut, Pulses.	3	"
38. Shunamganj	Sylhet	Rice,Linseid,Fish	4	"
39. Habiganj	Sylhet	Rice,Jute,Betelnut	5	"
40. Rajbari	Faridpur	Jute,Onion,Garlic, Chili.	4	"
41. Muktagacha	Mymensingh	Jute,Hides & Skins	1	"
42. Netrakona	Mymensingh	Jute,Rice,Mustard	4	"
43. Gouripur	Mymensingh	Jute,	3	"
44. Munshiganj	Dacca	Banana, Rice,Turmeric, cattle,Pan	5	"
45. Manikganj	Dacca	Jute,Rice	4	M3

M3: Town Committee.

Trade Centres	District	Principal indigenous commodities handled	No. of Banks	Class Shiher
46. Maijdi Court	Noakhali	Jute,Rice	3	M3
47. Rangamati	Chittagong Hill Tracts	Rice, Bamboo,Cotton	5	"
48. Kaptai	-do-	Power Station etc.	2	"
49. Chandraghona	-do-	Paper Mills	2	"
50. Tongi	Dacca	Industrial goods	7	"
51. Narsingdi	Dacca	Jute,Rice,Sugarcane, Pineapple,Banana,Fish.	7	"
52. Joydevpur	Dacca	Jute,Rice,Machine Tools Factory.	5	"
53. Ghorashal	Dacca	Industries	4	"
54. Sreemangal	Sylhet	Tea Estates,Pineapple	5	"
55. Chatak	Sylhet	Cement Factory	5	"
56. Daulatpur	Khulna	Industrial Estates	6	"
57. Chittagong	Chittagong	Rice,Jute,Pulses,Hides& Skins,Cattle. Port, Industrial and Commercial complex.	100/30	Nagar
58. Narayanganj-Adamjeenagar Complex	Dacca	Jute,Rice,Textiles, Hides & Skins, pulses, Provincial Head Quarters. Industrial & Commercial complex.	183/36	"
59. Khulna - Daulatpur-Mospara complex.	Khulna-Jessore	Transporto-commercial-Industrial Complex. Rice,Jute,Fish,Hides & Skins, Coconut,timber.	30/10	"

APPENDIX VII

POPULATION DENSITY BY DISTRICT, 1961

District	Land area 1 sq.miles	Population	Population per sqare mile.
Dinajpur	2,593	4,858,058	717
Rangpur	3,385	4,125,517	1,229
Bogra	1,486	1,710,540	1,168
Rajshahi	3,569	3,054,772	856
Pabna	1,693	2,128,782	1,257
Kushtia	1,323	1,267,435	958
Jessore	2,497	2,380,170	953
Khulna	4,080	2,661,392	652
Barisal	3,590	4,631,607	1,290
Mymensingh	6,151	7,627,815	1,240
Dacca	2,670	5,537,708	2,074
Faridpur	2,424	3,454,783	1,425
Sylhet	4,736	3,792,360	801
Comilla	2,446	4,769,180	1,950
Noakhali	1,623	2,590,120	1,596
Chittagong	2,619	3,241,518	1,238
Chittagong H.T.	5,095	438,243	82
East Pakistan	5,921,1	55,250,000	1,064

1. Land area exclusive of major river areas.

Source: " Population Census of Pakistan, 1961", Census Bulletin No.2.

APPENDIX VIII

GROWTH OF URBAN POPULATION, 1901 - 1961

Year	Total urban population	Percent Urban	Index of Urban Population growth	Index of total population growth
1901	702,035	2.43	100	100
1911	807,024	2.56	115	109
1921	878,480	2.64	125	115
1931	1,076,489	3.02	153	124
1941	1,537,243	3.66	219	141
1951	1,844,345	4.35	363	157
1961	2,640,726	5.19	376	188

Source: " Population Census of Pakistan", 1951, Vol.3.

" Population Census of Pakistan", 1961, Bulletin 2.

BIBLIOGRAPHY

BIBLIOGRAPHY

Books

Ahmad, Kafiz: An Economic Geography of East Pakistan (London: Oxford University Press, 1968, 2nd ed.)

Akhtar, S. M.: Economics of Pakistan. Vol.I & II. (Lahore: The Publishers Ltd., 1965)

Abrams, Charles: Man's struggle for shelter in an urbanizing world. (Cambridge, Mass. : The M.I.T. Press, 1964)

Ali, M.M. : An Outline of Ancient Indo-Pak History. (Adayle Brothers & Co., Dacca, 1964)

Bauman, A. L.: The Wonder that was India. (New York : Grove Press, 1959)

Bose, Sudhindra: Some Aspects of British Rule in India. (Iowa City, Iowa: The Chesnutt Printing Co., 1916)

Bigham, Truman C and Roberts, Merrill J. Transportation: Principles and Problems. (2nd ed. , New York ; McGraw Hill, 1952)

Bonavia, Michael R : The Economics of Transport. (London, Nisbet, 1947)

Brown, A. J. & H.M.Sherred: Town and Country Planning. (London. Cambridge Univ. Press.)

Curtiss, C. D. Urban Highway Planning: Its increasing importance. (Traffic Quarterly, 1957)

Chapin, F.S. Urban Land use Planning. (Urbana, 1965)

Cameens: The Lusiads, Trans. Atkinson.(Penguin Books), 1952

Daggett, Stuart: Principles of Inland Transportation. (3rd ed.) London, Harper.

Dorfman, Robert: Measuring Benefits of Government Investments, 1965

Das Gupta, A: Economic and Commercial Geography. (A Mukherjee & Co. Ltd.) India, 1962.

David Son: The Railways of India. London, 1868

Eaton, R., : The Elements of Transport. London, Pittman, 1959.

Fenlon, K.O. Transport and Communications. London, Pittman and Sons.

Fromm, Gary: Transport Investment and Economic Development. The Brookings Institutions, Washington, Feb., 1965

Friedman, Jhon: The Process of Regional Development. MIT U.S.A., 1964

Flaherty, C.A.G: Highways. Edward Arnold Ltd., London.

Gallion and Eisner: The Urban Pattern. New York(2nd ed.)1963

Garrison, William, L.: Studies in Highway development and Geographic change. Washington University Press, 1959

Geddes Patrick:	Cities in Evolution. Williams & Norgate Ltd: (Rev. ed.)1959.
Gibberod, F.	Town Design. The Architectural Press, London.
Hopkins, Gerrad:	The History of the World. New American Library of World Literature Inc. New York, 1962
Hulbert, Archer B:	The Path of Inland Commerce a chronicle of Rail, Road and Waterway. New Norms, 1920.
H. M, S.O.	Traffic in Towns. London, 1963
Johnson, Emory R and others:	Transportation, Economic Principles and Problems. New York, 1940.
Kirkaldy, Adam W and Evans, Alfred Dudley:	The History and Economics of Transport. London Pittman, 1915.
Karim, Masmul:	Changing Society in India & Pakistan. Pakistan; Oxford University Press, 1956.
Keeble, Lewis:	Principles and Practices of Town & Country Planning. London, 1964
Locklin, Dr. Philip	Economics of Transportation. Illions, Iowa, 1954.
Lansing John, B.	Transportation & Economic Policy. The Macmillan Company, 1966.
Mukherjee, Radha Kamal:	Changing Face of Bengal. Univ. of Calcutta, 1938
Milne, A.M.:	The Economics of Inland Transport. London, Pitman, 1960.
Moosman Frank Hamer:	Principles of Transportation. New York, 1957.
Rashid, Haroon-ER :	East Pakistan, A systematic Regional Geography and its development Planning.
Renne, R.R.	Land Economics. Harper & Brothers Publishers, New York.
Smith, J. R. & Others	Industrial and Commercial Geography. Henry Holo & Company, (4th ed.), New York, 1955.
Sarkar, J.	Industries of Moghal India, 7th Century. Calcutta, 1922.
Tetlow and Goss:	Homes, Town & Traffic. London, 1968
Turner, Roy:	India's Urban Future. Berkely, 1962
Winch David M.	The Economics of Highway Planning. Toronto University Press, July, 1962.
Wolfe, Jan De. :	Qualification of Road Users Savings. 1968.
Warden C. B. Martin	Transportation Planning in Developing countries. The Brookings Institution, Washington, 1965.

Howard, Ebenezer: Garden Cities of Tomorrow. London: Faber and Faber Ltd, 1902.

Majumder, R.C. History of Bengal. University of Dacca, 1943.

Mayer, H. M. and Kohn, C.F. Readings in Urban Geography. Chicago, University of Chicago Press, 1959.

Monahan, F. J. The Early History of Bengal. Oxford: Clarendon Press, 1916.

Mumford, Lewis: The Culture of Cities. Harcourt, Brace and Company, New York, 1938.

Waterson, Albert: Planning in Pakistan. Baltimore, 1963.

Public Documents

Government of Pakistan: Census of Pakistan. 1961, Vol.2 (Karachi: Manager of Government publications)

Government of Pakistan: The First Five Year Plan, 1955-60. National Planning Board (Dec., 1957)

Government of Pakistan: The Second Five Year Plan, 1960-65. Planning Commission (November, 1961).

Government of Pakistan: The Third Five Year Plan, 1965-70. Planning Commission.

Government of Pakistan: The Fourth Five Year Plan, 1970-75. Planning Commission (July, 1970).

Government of Pakistan: Pakistan Economic Survey, 1963-64. Ministry of Finance, 1964.

Government of Pakistan: Pakistan Economic Survey, 1969-70. Ministry of Finance, 1970.

Government of Pakistan: Statistical Pocket Book of Pakistan. Embassy of Pakistan (Washington D.C., 1956).

Government of Pakistan: Statistical Bulletin: Central Statistical Office, Economic Affairs Division, Karachi, Vol.10, No.9, September, 1962.

Government of Pakistan: Ditto - Vol.15, No.2, Feb., 1967.

Government of Pakistan: Ditto - Vol.18, No.5, May, 1970.

Government of Pakistan: Ditto - Vol.18, No.10, October, 1970.

Government of Pakistan: Trade(Pakistan), A monthly magazine, Department of Commercial Intelligence and Statistics, Karachi, Vols. I and II, 1950 and 1951.

Government of Pakistan: Development Projects; President's Secretariat, Rawalpindi, 31st March, 1962.

Government of Pakistan: "Transport and Industry"; Ministry of Industries, Karachi, 1949.

Government of Pakistan: Handout E No.3633, 1952; Press Information Department.

Government of East Pakistan: East Pakistan on the March, 1963; EPGP, Dacca.

Government of East Pakistan: Annual Plan, 1970-71, Public Sector Programme; Planning Department.

Government of East Bengal: PROGOTI Pariksar, 1940-45. BBG Dacca, 1954

Government of Bengal: Comprehensive Report on the Road Development Projects in Bengal. Calcutta, 1938.

Government of East Pakistan: Master Plan for Transportation in East Pakistan, Transportation Consultants Inc. 1961.

Makey, L.S.O.: Bengal, Behar and Orissa, Sikkim; Cambridge, 1917.

Ditto: Bengal District Gazetteers, Calcutta, 1923.

Pakistan Year Book, 1970, National Publishing House.

Port of Chittagong; Year Book of Information, 1968.

Government of East Pakistan: East Pakistan District Gazetteers, Dacca.

Government of Bengal and Assam: Rangpur District Gazettiar, Allahabad, 1911

Government of Bengal: District Gazettiar, Jessore, Calcutta, 1912

Government of East Pakistan: Pakistan Eastern Railway Time Table and Guide; Chittagong, 1970

Nasmi, T.H.: Development of Road and Road Transport. Government Publications, Govt. of Pakistan.

Government of East Pakistan: Handout 1971; Basic Democracy and Local Government, Dacca.

Government of East Pakistan: Proposed land use Plan of Rajshahi, Comilla and Chandpur; Urban Development Directorate, Dacca, 1968.

Government of East Pakistan: Physical Planning Progress. Urban Development Directorate, Dacca, 1968.

Government of East Pakistan: Twenty Years of Pakistan in Statistics, 1947, 1967.; Manager of Govt. Publications.

United Nations: Economic Development and Planning in Asia and the Far East. VI. Transport Development.

Government of Pakistan: National Sample Survey, Second Round, 1960; Central Statistical Office, Karachi.

Government of Pakistan: Hundred Years of Pakistan Railways 1862-1962. Ministry of Railways and Communications, 1962.

Articles and Periodicals

Government of East Pakistan: A Review on Road Building in East Pakistan; East Pakistan Annual, 1962.

Hamat, A.: Road Transport in East Bengal. Pakistan Economic Journal, August, 1954.

Government of Pakistan: The Flyer International; Aviation & Tourism, 1970.

Jaffar, M.A. : Communications in East Pakistan; East Pakistan Annual, 1962.

Khan, H. A.: Highways in East Pakistan; Roads & Highways Directorate, East Pakistan, 1968.

Khan, N. A. : Road Development in Progress - Buildings and Roads Bulletin Vol.I No.2, February-March, 1958.

Mohyuddin, M.K.: Rail Transport in East Pakistan. East Pakistan Annual, 1961.

Masood, N.: East Pakistan Inland Water Transport Authority. A Brief Survey of Activities. The Oriental Geographer, Monograph No.2, December, 1963.

Naqvi, S.H.H.: Mechanised Craft Cargo Traffic of Chandpur River Port. The Oriental Geographer, Monograph No.2, July, 1968.

Government of Pakistan: P.I.A. Market Research Bulletin, Vol.I, April, 1963.

Siddique, A. H.: Geographical Factors in the Development of Rail Transport in East Pakistan. The Oriental Geographer, Monograph No.1, January, 1968.

Bhattacharjie, J.P.: Interaction of Urbanisation and rural Development in India, Ekistics, Vol.17, No.98(January, 1964)

Gray, A.J.: This Historical Role of Physical Planning in T.V.A. and State Development Programmes. Proceedings of the 1964 Annual Conference of AIP.

Perloff, H.S. & Wingo, L.: Planning and Development in Metropolitan Areas, Journal of the American Institute of Planners. XXVIII(May, 1962).

Harkins, Edward Kenneth: Roads and Road Transport in an Under-Developed country, A case study of Uganda, London: H.M.S.O., 1962.

Walker, G.: Highway Finance, Journal of Industrial Economics, January, 1956.

Kalso, H.: Waterways Versus Railways. American Economic Review, September, 1941.

Nelson, J. C.: Highways, Waterways and Airways Facilities. American Economic Review, May, 1962.

I.W.T.A., Annual Traffic Report, 1966-68 EPIWTA

Progressive Report, I.W.T.A., 1971. EPIWTA.

I.W.T.A. Handout Bulletin, January & March, 1970

Chowdhury, A.R.: Road Development in East Pakistan, past and present. Bulletin Highways in East Pakistan, 1968.

Islam, Aminul: Crop Combination Regions in East Pakistan The Oriental Geographers, Vol.IX No.1, Jan, 1965.

Feasibility Studies and Reports

Government of East Pakistan: Brief History of Chalna Anchorage. East Pakistan Annual, Vol.2, 1962.

Haq, M. A. : The Port of Chittagong as it is today. East Pakistan Annual, 1961.

Government of East Pakistan: Chalna Port. East Pakistan Annual, 1961.

Government of East Pakistan: Jhenida, Kushtia and Ishurdi Road. Orange, New Jersy, August, 1963.

Government of East Pakistan: Faridpur, Jhenida, Jessore - Khulna Roads. Orange, New Jersy, August, 1963.

Edison, J. C. : An Appraisal of the Master Plan for Transportation in East Pakistan.

Government of East Pakistan: Dacca - Aricha Road. Ammann & Whitney, Dacca, September, 1963.

Government of East Pakistan: Rajshahi Division Road. Vol.I, II & III Harris- Bout Wall, Construction Engineers, 1963.

Government of East Pakistan: Pakistan International Airlines. East Pakistan Annual, 1962.

Government of East Pakistan: Report of the Economic and Engineering Feasibility of establishing permanent port facilities on the Pashur River. Frederic R. Harris Inc., 1964.

Government of East Pakistan: Report on the Master Plan for Dacca, 1960. Dacca Improvement Trust, 1959.

Government of East Pakistan: Nayarhari- Dinajpur - Kaginathpur- Godagari Road. Harris - Bout Wall, Consulting Engineers, New York, September, 1963.

Government of East Pakistan: Dacca- Sylhet cum Comilla Road. Louis Berger, Orange, New Jersey, August, 1963.

Government of East Pakistan: Dacca - Chittagong cum Narayanganj Road. Ammann and Whitney International Ltd., Dacca, September, 1963.

Government of East Pakistan: Mymensingh - Kishorganj- Bhairab Bazar Road. Kazi G. Rahman & Anwar Hossain, 1964-65.

Government of East Pakistan: Report on the Economic and Engineering Feasibility of Dacca, Narayanganj, Chandpur, Barisal and Khulna Ports. Frederic R. Harris, Inc., Consulting Engineers, 1967.

Government of East Pakistan: Surveys of Inland Waterways and Ports. MEDECO, 1963-67.

Government of East Pakistan: Feasibility Study concerning the Motorisation of Five Types of Country Crafts in East Pakistan. MAISE FORM, S.A. Geneva.

Government of East Pakistan: Transportation Survey of East Pakistan. Vol. I, II and III, Army Crops of Engineers, 1961.

Government of East Pakistan: Country Boat Survey (An Economic Analysis) Dr. Akhlaqur Rahman, Former Director, Planning and Research, I.W. T. A., 1963-1966.

Pakistan Eastern Rail: Dacca – Tongi – Arichs – Nasarbari – Ishardi, Detailed Traffic Survey, M. S. Ahmad, District Traffic Superintendent, 1962-63.

Pakistan Eastern Rail: Equitable Distribution of Import and Export Traffic between Chittagong and Chalna Ports. A.D. Khan, Chairman Traffic Survey Committee, January, 1960.

Pakistan Eastern Rly: Narsingdi – Madanganj, Traffic Survey. I. A. Ansari, District Traffic Superintendent.

Pakistan Eastern Rly: Faridpur – Barisal, Traffic Survey. A. B. Khan, Secretary, Railway Board, 1962.

Government of Pakistan: Arterial Freight Movement in East Pakistan. Transport Planning, September, 1966.

Government of Pakistan: Country Boats: Origin and Destination and Flow of Cargo. Professor Beasly and Transport Planning Group, 1964.

Government of Pakistan: Shahajahpur Port Engineering and Economic Feasibility Study. Commonwealth Transportation Consultants Inc., Pak Techno Consult Ltd., 1970.

Government of Pakistan: Ferry Requirements for the Roads system of East Pakistan and Proposal for Current Action. Transport Planning Group, 1969.

Government of Pakistan: Provincial Bus Survey. Transport Planning Group, 1966.

Government of Pakistan: Reorganisation of Road Transport and Traffic Control. Transport Planning Group, 1967.

Government of Pakistan: A Note on E.P.R.T.C. Plans for Monopoly Services on certain Routes in the Province – Proposal for Corporate Bodies of Bus Services. Transport Planning Group, Karch, 1965.

Government of Pakistan: Regulation and Control of Means of Transport. Transport Planning Group, July, 1965.

Unpublished Materials

Rahman, Gol: Village Planning in East Pakistan. Master of Regional and City Planning Thesis, The University of Oklahoma, U.S.A., 1965.

Khan, S. A.: Existing Land Use Analysis: Rajshahi – Comilla – Chandpur, 1969.