CHAPTER - 1

INTRODUCTION
PROLOGUE

PRESENT RESEARCH WORK IS CONCERNED WITH THE STUDY ON METROPOLITAN ENVIRONMENT OF CALCUTTA CITY AREA WITH A SPECIAL REFERENCE TO ITS DRAINAGE STATUS STUDY IN-RESUSCITATION

The 300 years old city of Calcutta, a huge conurbation developed on the largest deltaic plains of the world is considered as a sensuous city for its warmth and rich cultural backdrop. The city is not proud of a long past history like that of Delhi; Agra and many other cities of this ancient land but can definitely be proud of its status as a city of commoners and distinguished as well. It is a city of simple life style, reasonable cost, friendliness and of debatable issues as well. Fig.1.0 & 1.1

DEVELOPMENT OF CALCUTTA CORPORATION

The city of Calcutta which begun as a tiny British settlement from three Villages, Sutanuti, Kalikata and Govindpur has undergone gradual changes through the last three centuries. The governmental and mercantile buildings of the East India Company were constructed around original Calcutta settlement at Dalhousie Square, which still serves as the focal point of all commercial activities. The city in 1752 had an area of mere 4 Sq.Km. bounded by
LOCATION OF CALCUTTA IN INDIA

SOURCE: NOT APPLICABLE.
the Chitpore Road to the east, eastern bank of Hooghly on the west, Burrabazar to the north and the creek running between Chandpal Ghat to Salt water Lakes marked the southern periphery. Due to the shifting of Fort William to its present location, a large tract of land was cleared to provide a field for firing guns - later remained an open space known as the "MAIDAN". Commercial activities, imports - exports results in the development of a vast hinterland and thus the major Calcutta Port evolved (Fig 1.2, 1.3, 1.4).

The availability of industrial facilities and labour helped to grow industries like jute, textile, chemicals, paper, and light engineering works. By 18th Century, the city area was a little over 20 Sq.Km. Gradually more and more parts of 24-Parganas became a part of the city area. At the time of the 1981 census, the city had an area of 104 Sq.Km., the subsequent merge of Jadavpur, Behala and Garden Reach has made the city 171.24 Sq.Km. and recently its area has come up to 187.33 sq.km. (fig.1.5)

Although the population is predominantly Bengali (42%), the city is inhabited by people from Bihar, Orissa, Punjab, Rajasthan and the South. Colonies of few Chinese and Armenians are to be found who are living here through generations. An Anglo-Indian community of above 20,000 are also to be found.
Today a major portion of the internal trade of north east India passes through Calcutta as it is centre of rail, road, and waterways. With a hinterland rich in coal, iron and manganese deposits and agricultural products, Calcutta now is one of the major six ports in India. It handles about 40% of the Nation's imports and about 45% of the exports, accounting for roughly 50% of the total foreign exchange earnings.

Calcutta is also the seat of Government for the state of West Bengal and contains a large number of cultural organisations including universities and research institutes. Average per capita income within the CMD is Rs.900 as compared to Rs.320 for the entire State of West Bengal and Rs.280 for the nation. (Fig. 1.6)

Calcutta grew in a haphazard manner. During the days of the Raj, the central part of the city was developed in a planned manner. Through the efforts of the Calcutta Improvement Trust (CIT), some new areas were developed in a planned manner. Calcutta Metropolitan Planning Organisation (CMPO) was created in 1962. CMPO secured a WHO grant for drawing Master Plans for water supply, sewerage and drainage for the city.
CONJECTURAL
MAP OF CALCUTTA
IN ITS LEGENDARY PERIOD

FOUR STAGES OF GROWTH OF CALCUTTA

After five years of research and survey, CMPO brought out the "BASIC DEVELOPMENT" Plan (1966-1986) for identification of the massive deficiencies in the infrastructure of the city. Under the CMDA Act 1970, a corporate body was formed named as the Calcutta Metropolitan Development Authority that prevented further decline of physical infrastructure.

AREA AND LOCATION

The study area that is the Calcutta Municipal Corporation area is a part of Calcutta Metropolitan District Area, in the Eastern part of India in the State of West Bengal. Calcutta Metropolitan District Stretches approximately within 22°30'N to 22°38'N latitudes and 88°20'E to 88°30'E longitude. The Calcutta Metropolitan Area is now spread over four districts besides Calcutta Municipal area, having two Corporations, 33 Municipalities and 37 non-municipal units. The Calcutta Municipal Corporation area had an area of 171.24 Sq.Km., including Garden Reach, South Suburban and Jadavpur which merged with CMC after 1981 census. The Hooghly river demarcates the western border of the study area. The area forms parts of survey of India's topographical sheet No.79B/6. At present the Calcutta Metropolitan Corporation has an area of 185 sq.km.
OBJECTIVE OF THE STUDY

The purpose of the present enquiry will be a study in resuscitation of the metropolitan Calcutta specially in relation to its storm water drainage and waste water disposal. In order to find out the reasons for drainage crisis a detailed morphological analysis of the area will be made presenting its wet land features, palaeo channels, artificial canals and present general slope. Evolution of the drainage system of the city and its present status together with the distribution of rainfall over the last decade will be presented in the study. An attempt would also be made to evolve a scientific landuse plan as the landuse pattern is changing with time disturbing the ecological balance of this metropolitan drainage and environment. The exercise involves a multidimensional and integrated approach and the present thesis is aimed at contributing input towards such an objective.

METHODOLOGY

The present study will be based mainly on both primary and secondary data with an integrated approach. Attention will be given on the review of published information, recorded data and previous work on the subject from various sources of information and field investigation in some selected areas. The majority of the work has been dependent on the available reports and maps from Calcutta Metropolitan
Development Authority, Calcutta Corporation and Institute of Local Government and Urban studies, Calcutta, etc. The other sources of data and information are Environment Monitory Wing - Zoological Survey of India, Banghiya Vijaan Parishad, Institute of Wetland Management and Ecological Design, Geological Survey of India, National Atlas and Thematic Mapping Organisation, Centre For Urban Economic Studies, Calcutta and Calcutta University Library. Actually this study has been based on modern methodology, intensive fieldwork adapting advanced techniques of analysis of physical and socio-economic problems in terms of - (a) Prefield method, (b) Field-method, (c) Post field method.

PREVIOUS LITERATURE

Valuable works have been carried out on demographic characteristics, urbanisation, population control, physiographic expressions, broad morphological units by Bose 1968, Ghosh 1987, Bagchi 1980, 1986 and C.M.D.A. experts. Few have attempted to discern in detail the drainage characteristics alongwith the changes in the Metropolitan environmental conditions as well as the means and way of resuscitation which is the main theme of this study.

Intensive study on the groundwater conditions of the Calcutta Metropolitan area was carried on by A.B.Biswas from Department of Geology, Presidency College. Mr. Dhrubojeti Ghosh

IMPORTANCE OF THE STUDY AREA

The city of Calcutta is a controversial city continuously attracting the attention of critics and getting adorned with titles like "CITY OF PALACES", "CITY OF JOY" & A DYING CITY" etc. The city once beautifully sprawled over the left bank of the river Bhagirathi seems to be turning into a menace for its inhabitants. Metropolitan environment of Calcutta is posed with numerous threats. The city
developed as an estuarine and riverine port initially as navigation was the only line of communication in the 17th Century at this part of the World. Calcutta shot up as a commercial trading centre within a very short span of time and thus lured people, high and low, from all parts of the country. This unprecedented growth of population exerted pressure on land, ground water, drainage system and caused deterioration of the city environment as a whole. The present study deals with the growth of the city from its early period to the present status. It also explores the environmental degradation with a special emphasis on the surface as well as underground drainage system. Thus a composite picture of the urban growth will be presented with its geographical and economic background.