

Social, Infrastructural and Environmental Dichotomy in Chandannagar Municipal Corporation, Hooghly, West Bengal

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Abstract: Rural and urban dichotomy is a common fact prevailing in India in this modern civilization. But sometimes we also notice dichotomy within an urban area. For instance we can discuss regarding Chandannagar Municipal Corporation as a city of intra urban dichotomy. This city is situated at Hugli district in West Bengal and share a latitudinal extension from 22 °50'30" N to 22 °53'30" N and 88 °18'30"E to 88 ° 23'30" E . We visit infrastructural, social and environmental dichotomy in between eastern and western portion of this city. We observe strong inequality and disparity in social and natural field within this two part of this city. To mitigate this inequality and disparity within the city a proper comprehensive plan must be taken by the government.

Keywords: Dichotomy, Urban internal structure, Occupational structure, Environmental condition.

I. INTRODUCTION

People come to this city in search of work and residence since its inception as a settlement (.16th century). The coming of the French further accelerates people's movement into this area. The French gave this area an actual structure of an urban centre by providing all kind of facilities and infrastructure. But there was a difference of having these facilities between areas of French habitat and the native Indians. This dichotomy is still remaining in the city in a different manner. Every development takes place in the eastern part or older established city than the newly added area to the city. From 1952 to 1995 the city covers only 9.66 sq kms. area which is suddenly increased to 22 sq Kms. from 1995 by acquiring the surrounding panchayet area and converting them into six new wards (28, 29, 30, 31, 32, And 33). Anyone can easily find out the difference between the western and eastern Chandannagar from the angle of environmental, social and infrastructural set up.

Location of the study area:

Chandannagar is a small city situated about 30 kms north of Kolkata in West Bengal. Located on the western bank of Hugli River. This city has a latitudinal extension from 22 °50'30" N to 22 °53'30" N and 88 °18'30"E to 88 ° 23'30" E having an average elevation of 10 metres. Chandannagar Municipal Corporation covers an area of 22.03 sq. kms and consists of 33 wards having a population size of 166771 (Municipal Corporation Office, Chandernagore)

Objectives of the study:

- To find out natural and social as well as infrastructural characteristics of Chandannagar Municipal Corporation.
- To investigate intra urban dichotomy of CMC and applicability of Core-Periphery model.
- To investigate word wise environmental conditions in CMC and make suggestion to improve.

II. LITERATURE REVIEW

DICHOTOMY:

A dichotomy is an idea or classification split in two. When you point out a *dichotomy*, you draw a clear distinction between two things. A dichotomy is a contrast between two things. When there are two ideas, especially two opposed ideas — like war and peace, or love and hate or improvement and degradation etc. — you have a dichotomy.

URBAN INTERNAL STRUCTURE:

Urban internal structure is the arrangement of land use in urban areas. Sociologists, economists, and geographers have developed several models, explaining where different types of people and businesses tend to exist within the urban setting. Urban structure can also refer to the urban spatial structure, which concerns the arrangement of public and private space in cities and the degree of connectivity and accessibility.

OCCUPATIONAL STRUCTURE:

Occupational structure refers to the aggregate distribution of occupations in society, classified according to skill level, economic function, or social status. The occupational structure is shaped by various factors: the structure of the economy (the relative weight of different industries); technology and bureaucracy (the distribution of technological skills and administrative responsibility); the labour-market (which determines the pay and conditions attached to occupations); and by status and prestige (influenced by occupational closure, life-style, and social values). It is difficult to attach causal primacy to any one of these factors; moreover, their role in shaping the occupational structure changes over time, as society changes.

ENVIRONMENTAL CONDITION:

Environmental conditions refer to the quality and state of the environment, which can impact on health and daily life. Environmental condition includes water quality, air quality, weather conditions, pollutions, green spaces, level of O₂, water quality, climatic change, pH of soil and water etc. it can vary based on geographic locations.

III. METHODOLOGY

PRE FIELD WORK: In this session during which the plan to complete the entire project has been done, and all the secondary data which is necessary to prepare this project are collected from Chandannagar Municipal Corporation.

FIELD WORK: This project is mainly based on primary data i.e. collected from the study area in this session.

POST FIELD WORK: After collecting the data of all the wards, different types of statistical calculation have been done. Then prepare some thematic map using MapInfo professional -7.0 Software.

IV. FINDINGS AND DISCUSSION

1. Demographic profile

The demographic profile of an area includes all the population aspect like population composition, religion, literacy, household size, occupational pattern and structure, income structure etc. The total no of house hold of these six wards all together is 5638 in which only 50 households are taken during survey (average 8 from each considering the size of the wards) and total 238 population were surveyed among which are males and are females.

2. Growth of population

It is obviously a general error to know what is the result shown in growth of population of this area after the adjoining. Fig: 1: shows growth of populations; Source: CMC office

The change of populations in these six wards (28-33 no. wards) is very minimum. The average growth rate of these wards is around 1%. The lowest population growth is in ward no. 28 (0.2%) and highest is in ward no. 30(2%). This may due to the concentration of Muslim community in ward no. 30. So the households increasing highly in this ward.



3. Caste composition

238 people were surveyed in the newly added area among which 52% population are General, 23% are S.C, 10% are S.T and 15% are other category (in which 7% are O.B.C-A and 8% are O.B.C-B). The concentration of S.C and S.T population is comparatively high in ward no 28, 30 and 33 among the six, as during it is found that in ward no. 28 there is a particular area where most of these community lives called Raypara. Here most of the people are either backward people in society or poor people holding a BPL card. In ward no. 30 as there as mass concentration of Muslims, so Sc St Population concentration is low, and in ward no. 33 there is a big proportion of slum population live.

(Fig: 2)

4. Occupational structure

People engaged in various kind of occupation like salaried permanent job may be government or private or business or labours or agriculture etc. A noticeable thing is that almost in every ward the total no. of no worker is very high 62%. Not only that there is a huge difference exists between the male and female work participation. During field survey it has been noticed that family living in high income group class, less the number of female work participation.

OCCUPATIONAL STRUCTURE						
WORD NO.	LABOUR	CULTIVATOR	SERVICE	BUSINESS	OTHERS	NON WORKERS
28	5	5	11	5	5	69
29	5	10	10	3	7	65
30	11	2	4	11	7	65
31	3	0	13	13	13	58
32	10	0	25	0	9	56
33	8	0	31	3	8	50

Table No. - 1: Occupational structure (Source: Field survey, June- July 2023)

Here we find (from Table no. - 1) that in ward no. 28, 29 and 30 there is an existence of people engaged in cultivations they are the peripheral areas and more close to the nearby villages than the main city. On the other hand ward no. 32, 33, and 31 as they are almost become a built up area and due to closeness to the main city in both social and cultural term almost 80% people are engaged in non agricultural work and there is no further agricultural land exist. Again the figure shows that in ward no 31 a well amount of people engaged in business as this is the main market area.

5. Settlement characteristics

The settlement aspect concerns about many perspectives like native land of the settlers, housing condition, land value rise etc.

Native land:

Though cosmopolitan nature and flow or immigration is much lesser in this newly added part of the city still the area comprises of people coming from various regions. Here 70% people are local and 30% are migrated population. These migrants not only come from in between the district or state, but also come from outside the nation. (Fig: 3) Here 55%people coming from in between the state or district. The populations which come outside the state are mainly the migrants of Bangladesh. The reasons for coming are also different. Most of them come for occupation and facility. The reason other comprises those migrants who came from Bangladesh in 1947 at the time of separation of India and after that at the time of separation of Bangladesh from West Pakistan.



6. Rising land value

Land value rise is an obvious phenomenon as a rural area is converted into a urban area. The same thing is happened to this newly added area of CMC as it was previously a panchayet area consisting small a cluster of villages. So the land value was nominal. Though in ward no. 32, 33, 31 is quite high as these area already get a urban way of life from a long ago. But there is a huge jump in land value after officially getting the status of corporation. Mainly in ward no. 32 as it the most developed area among the six wards and almost a area of high income group. But one thing must have to mention that as in ward no. 31, 32, 33 agricultural land is almost abolish so there is only a rise of residential land value but in 28, 29 and 30 both a rise in agricultural land and residential land is fond and the rise value of residential land is higher than agricultural one.

7. Dichotomy in internal structure



1

2

1: Picture of Rural Morphology in ward no. 28 (Madhabpur),

2: Built up urban structure in ward no. 9 (Fatakgora area) - Source: Field survey, June- July 2023

The most important difference in the inter structure of this two parts of the city is , the eastern or older part is a well planned and well bounded city made rather than the newer one. There is proper city plane in the eastern part which emerged by the French which a little can found in the western portion. The presence of European styles buildings and the sprawling bungalows and houses also prominent this difference. Not only that whether the areas of older CMC are mostly built up area with high rises and shopping complex, the rural types of houses and mud houses or typical rural of huts still remains there which is found during the time of field survey.

8. Dichotomy in infrastructural facilities

A proper urban facility or urban ranges from the provision of housing services, piped sewage systems, running water, garbage disposal system to transport and communication , reliable electric supply, educational and health care system, recreational facilities etc the building of this facilities to service these new urbanites constantly lag behind existing need. Part of difficulty is financial, not enough money is present to the corporation to build new facilities fast enough to satisfy demand.

But it has been seen that after 18 years of this adjoining very little developments are took place. The most renowned, well equipped educational institution is still concentrated in the eastern part both governmental and private and the administrative authority can create very less infrastructural temptation to the private investor for new establishment in these areas. The situation is more critical in health. Except a government hospital in 31, no private hospital is present there. Even in ward no. 28, 29, there is neither a health centre nor a private doctor clinic, even not a single medicine shop present some time; only the ward no. 32, 31 as close to the city get the facility of private clinic. In ward no. 28, and 29 they even don't have a local market facility. Either they have to travel to older CMC or to the Bowbazar area (ward no. -31). But here is also a problem of transport and communication as the main city is very well connected with and within the city by lots of lanes and sub lanes where the distribution of roads are very unplanned. The modes of transport is also very less in this areas as no public transport is present in areas like Altara, Madhabpur, Garji, Swetpur, Nabagram., Bilkuli. The accommodation of street light is also poor in some areas.



Another problem is severe crisis of sanitation and garbage disposal facility which is sometimes completely absent or not maintained properly by the corporation.

9. Dichotomy in environmental conditions

The environment of these two areas is also different which have observed at the time of survey. Where the main city is transforming as a concrete jungle day by day, the newer portion still have the interlude of greenery. The increasing vehicle, population pressure, high rises and cleaning up natural vegetation and shrinkage of water bodies make the city more and more polluted where the western part enjoys a pleasant weather. The green touch of this

Portion will help to sustain the entire city in future if a proper provision can be taken for sustainable development.

These new 6 wards enjoying a vast green cover, near about 78% of the total city. In the winter, these green wards attracted the travelers' from the rest portion of the city as well as from different places causing a little economic up gradation the local peoples. (Fig. no. – 4)

Approximately 37.089 % (8.192 Sq. Km) of the total CMC area was covered by patches of vegetation in 2011. The vegetation patches were composed of big trees. The area covered by various vegetation patches decreased steadily in the year 2020 by Amphan Super Cyclone in West Bengal. Although compare with other regions these six wards of the western part of Chandannagar vegetation patches slightly increased between 2011 and 2022, with an increase of 3.513% (i.e., from 8.192 Sq. Km to 8.968 Sq. Km).

Considering all the following parameters are the environmental issues in CMC:

- 1. Air pollution- Air pollution is a mixture of solid particles and gases in the air. Emission of chemicals from urban and industrial activities in the form of dust, pollen and mold spores may be suspended as particles. Basically the eastern part is suffering from this problem.
2. Water pollution- Water pollution is the contamination of water bodies, usually as a result of human activities. Averagely all the wards suffering from as a problem although the newly added sex wards are minimum.
3. Soil & Land Pollution due to Household & Industrial Waste – This is a very genuine issue in the wards of eastern part of CMC and rapidly increases day to day causing degrading the biodiversity.
4. Overpopulation- Due to the nearness and having very easy access with the state capital, population is increasing day by day. This huge population within this area creating too much burden on its local environment.
5. Loss of Biodiversity- It is a biggest environmental issue in chandannagar Municipal Corporation. Biodiversity in and surrounding areas of CMC deplete due to rapid increasing of population, unplanned urbanization, ultra modern life style, all sorts of pollution etc.
6. Urban Sprawl- Urban Sprawl brings about expanded movements, environmental concerns, and well-being concerns. It is observed that urban sprawl is going on in large scale in this area. It is expanding in the western margin of the towns besides the Hooghly river. In near future urban administrative boundaries should have to revise.

10. Level of backwardness

Backwardness of Chandannagar Municipal Corporation is empirically calculated through composite Z-score considering the four variables – scheduled tribe and scheduled caste population, illiterate population, persons engage in agriculture and nonworking population.

Table with 6 columns: WARD NO., Z -SCORE OF NONWORKER, Z- SCORE OF ILLETAREATE, Z- SCORE OF SC, Z- SCORE OF ST, Z- SCORE OF CULTIVATORS. Rows 1-3.



4	0	0.1	-0.6	0.8	-0.3
5	-0.8	0.6	1.9	-0.1	-0.25
6	-1.36	1.2	1.9	-0.4	-0.4
7	0.27	0	0.08	-0.4	-0.4
8	0.27	0.1	-0.6	0.2	-0.2
9	0.41	-0.7	-0.7	-0.4	-0.4
10	-0.27	-0.3	-0.06	-0.3	-0.3
11	1.36	2.9	0.8	-0.4	-0.3
12	0.27	-0.7	-0.4	-0.4	-0.25
13	0.82	-1.3	-0.9	-0.4	-0.4
14	1.9	-1.1	-0.8	-0.4	-0.3
15	0.41	-0.8	-0.9	-0.4	-0.4
16	1.9	-0.5	-0.8	-0.4	-0.4
17	0.54	-1.2	-0.9	-0.4	-0.4
18	0.27	-0.6	-0.8	-0.4	-0.4
19	0.54	-0.4	-0.9	-0.4	-0.2
20	0	-0.2	-0.9	-0.4	-0.4
21	-0.27	-0.5	0.4	-0.4	-0.2
22	-0.8	0	1	-0.3	-0.3
23	0.27	-0.9	-0.6	-0.4	-0.4
24	0.82	-0.8	-0.3	-0.2	-0.4
25	-0.54	1.6	0.9	-0.4	-0.4
26	1.9	2	1.1	-0.1	-0.4
27	-0.8	0.1	0.2	-0.4	-0.4
28	-2.72	0.9	0.68	2.7	3.3
29	-1.9	1.4	-0.1	0.1	0.6
30	-0.66	1.4	-0.06	1.4	1.5
31	0.54	-0.4	-0.3	-0.4	-0.3
32	-0.27	-1	-0.6	-0.4	-0.4
33	0	0.9	0.2	-0.3	-0.3

Table no. – 2 Composite Z score value of the wards (Source: Census of India, 2011)

An idea of clear cut division between the western and eastern part of the city in terms of level of backwardness is get though Table no. -2 (Map no. -2). Though the general level of backwardness is low in the eastern part but a variation is also prevail there because of the presence of slums mainly in ward no. 25, 26, and 11 and sometimes for the high concentration of SC, ST population like in ward no. 5,6 etc. On the other hand, the backwardness is at lowest level in the central wards of the eastern part of the city. The causes are it is the most developed part of the city mainly the wards like 13 to 23. It is also the most built up area of the city and most of the schools and colleges and nursing homes, government offices, even markets are concentrated here. But this concentration of development is not a recent phenomenon it started from French time. Present areas of Borobazar, Bagbazar were developed since the French regime which further helps to develop the immediate surrounding areas of it and attract the high income group immigrants and elite class immigrants to these areas. But the situation of the newly added area is really poor in comparison to the old established one. Here out of six wards, four score a high level of backwardness because of low literacy level, lower economic level etc. maximum persons of these wards still engaged in subsistence agriculture.

**APPLICATION OF CORE PERIPHERY MODEL OF FREIDMANN**

Here we found a similarity with the core-periphery model of Friedman. As in his model Friedman chalk out a core region having all the potentiality of development, here also the main city is the centre of all kind of major economic and cultural activity and work as engine of growth to its surrounds and the adjacent city region.

Map no.- 3, help us to conclude that there is some pockets which are most developed, pose, area and also play as a centre of attraction to the residents. Those are the areas which are circled with red marks are the major focal point of all kind of educational, health, services and commercial centres. Bagbazar, Fatakgora, Padripara, Barabazar, Palpara are the areas where the above said facilities are clustered.

The 2nd major centre of growth and attraction shown in figure no., either newly emerged with spectacular high residential buildings with some new facility or rejuvenated by restructuring of existing old buildings or facilities. They can be considered as resource frontier region, as described as Freidman's model, which will be more intensively used in upcoming 5 or 10 years or may be less than that.

The newly added areas and the other areas of the main city are the peripheral area which has two distinct divisions. Areas which situated in the main city do not have so poor condition like the peripherals areas of the newly added area which remain as rural in nature as before. The possibility of change this region with a proper urban nature is not as faster as the areas which come under the main city boundary. The areas peripheral areas of the main city like ward no. 1, 2, 3, 4, 5, 6, 7, 13, 15 etc are needs restructuring which is already started in some cases. But the slum areas of the city is the blighted areas with a stagnant situation.

Now if we consider the model in which Friedman discuss about the emergence of a complete urban system with the development of transport and communication. He divided it in four phases –

FIRST STAGE, where, localized economies and small scale isolated settlement characterized by low mobility is found. In case of Chandannagar this was the stage before the French settled in this area.

SECOND STAGE, is that stage when a core region develop as result of concentration of economy and industrial growth. The French regime of Chandannagar can be compared with this stage.

THIRD STAGE, through a process of economic growth and diffusion other growth centre appear with increased interaction between the elements of urban system and the construction of transport infrastructure. Up to 1995 from the time of independence (1960 onward)

FOURTH STAGE, when the whole urban system becomes fully integrated and inequalities are reduced significantly.

According to the last two stages Chandannagar lies between the 3rd and 4th stage. The main city portion is fully integrated. There are a no of growth pockets appear in the city. But there is also intra urban disparity within the city. Inequality can be found within the pose area and the slum areas of the city. And a striking disparity can be found between the newly added western part and the older eastern part of the city. The two part of the city is still not fully integrated.

IV. CONCLUSION

To make the urban system of this city complete and to reduce inequality and disparity within the city a proper comprehensive plan must be taken to integrate the underdeveloped area for betterment of their situation.

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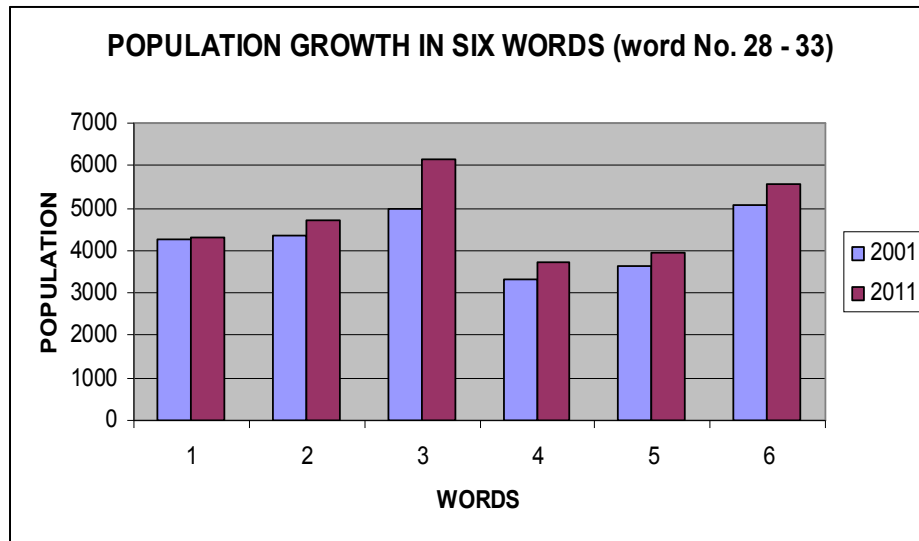


Fig- 1: Population increase in newly added words (Source: CMC office)

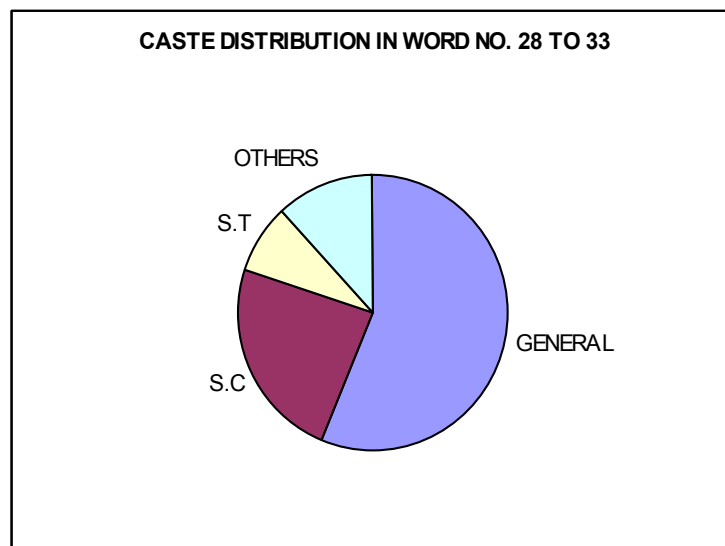


Fig- 2: Caste Distribution in newly added word (Source: Field Survey)

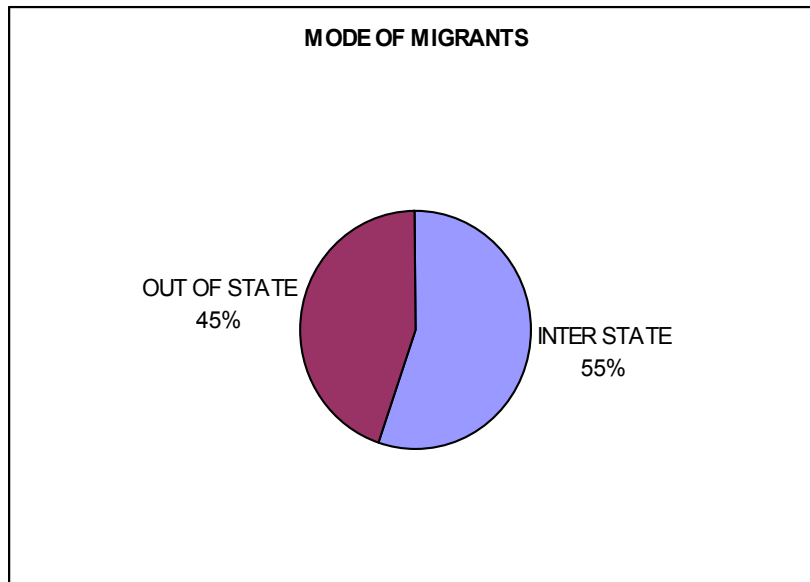


Fig -3: Mode of Migrant
(Source: Field survey)

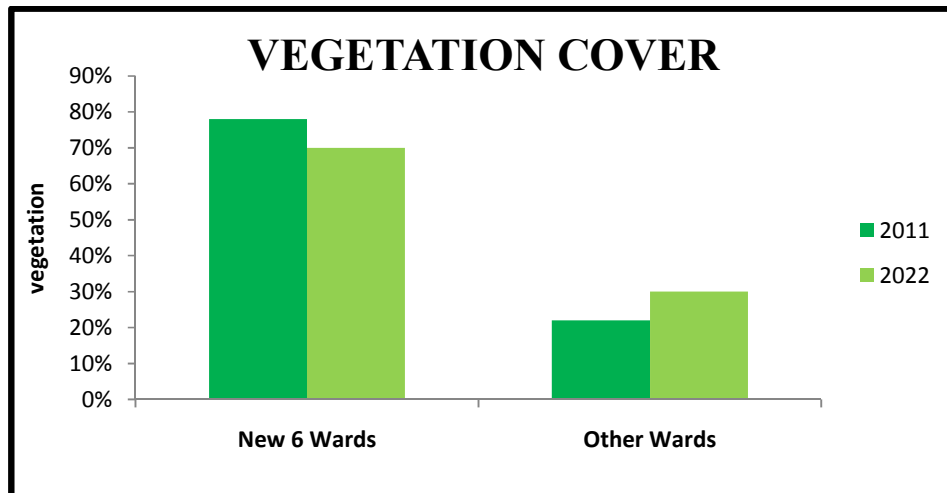
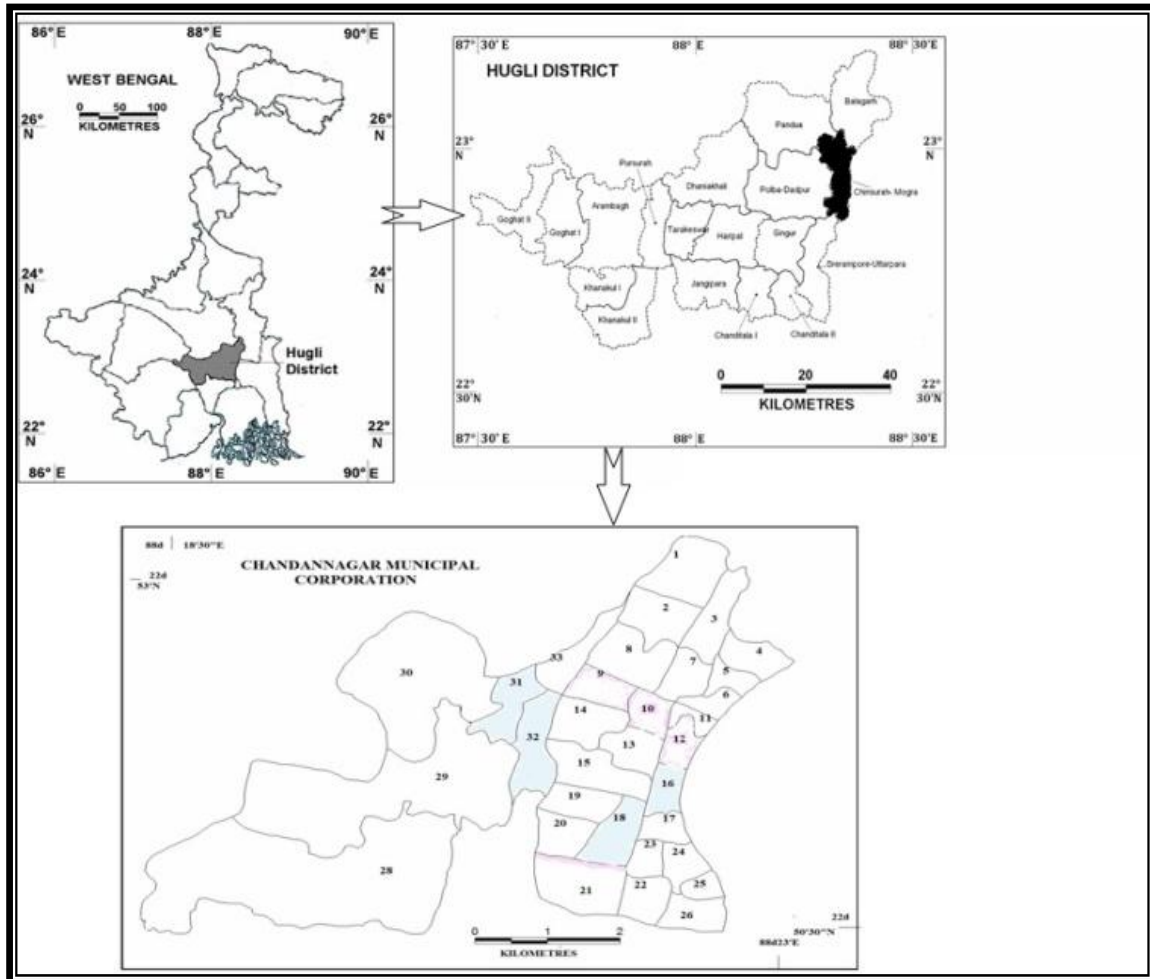
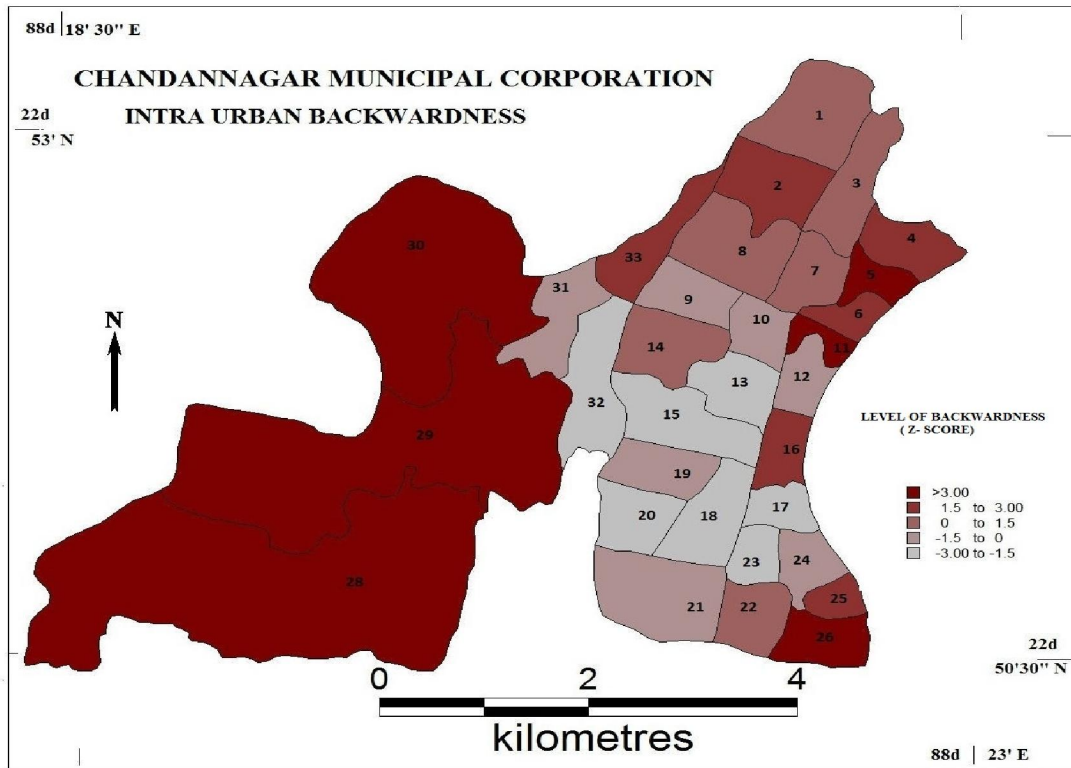


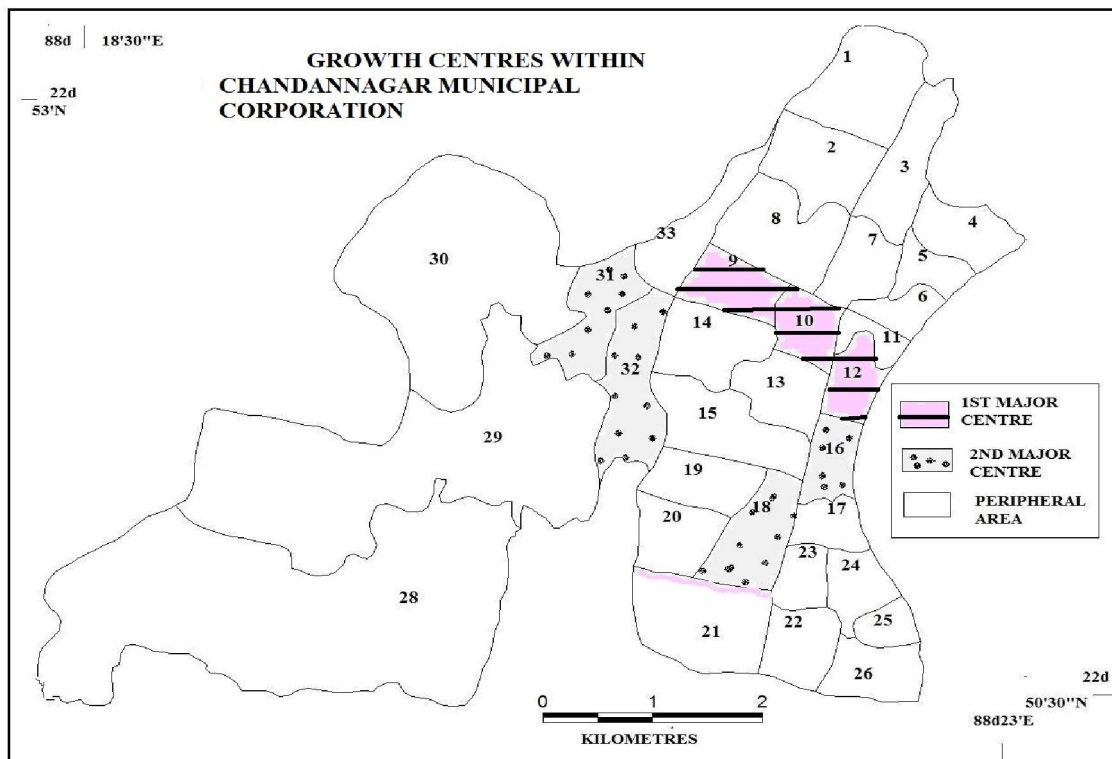
Fig: 4 (Source: Hooghly district survey report)



Map No. 1: Location Map



Map no. - 2: Intra Urban Backwardness (Source: census of India, 2011)



Map- 3: Growth centers within CMC (Source: field survey, June- July 2023)