

## **Trend of urbanization in Chakdaha urban area in preceding few decades**

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### **Abstract**

Urbanization has not been uniform all over the world. Different ages have witnessed localized growth. The dawn of modern age saw the spread of urbanization to almost all the parts of the world. With the spread of globalization, all the places get connected with each other. Developed and developing places are moving towards more urbanized condition. West Bengal is one of the most urbanized states of India, where the urbanization is spreading now in all over the state. But the district-wise, Urbanization rate has made a clear differential scenario. The state capital, district head quarters are well known urban bodies, beside the others are no so notorious. In spite of that Chakdaha Municipality was one of the old and significant urban centres of Nadia district. The trend of urbanization Chakdaha recent decades, the urban geographic investigations are connected primarily with the areal variations within, between and beyond cities. The Township, formally known as 'Chakradaha' was an agro-based rural settlement before 19<sup>th</sup> century, located in the Nadia District, West Bengal, India, extending from 23<sup>o</sup>01'45" N to 23<sup>o</sup>06'55" N & 88<sup>o</sup>29'50" E to 88<sup>o</sup>34'07" E respectively and traverses an area of 15.56 Sq. Km as a core and few surrounding. In the present work the urban scenario of Chakdaha Municipal area in last 100 years has been attempted to examine. To investigate the impact on urbanization different quantitative and qualitative techniques have been adopted.

**Keywords:** Globalization, urbanization, urban spreading and geographic investigation.

### **Introduction**

The location of town in an area shows its latitudinal and longitudinal position and its significance and importance. Location shows the importance of towns and highlights about the surrounding environment (Mandal, 2000). Urban settlement is primarily evolved from the coalescence and symbiotic interaction between people, economic activities, different modes of communication and basic infrastructure During

the historical periods the problem of communication was an important consideration in the location of cluster settlements. The natural levees along the Hooghly River, embankment provided commanding sites for ports and settlements. Chakdaha is an important municipal urban settlement has been emerged out from an agro-based rural settlement before 19<sup>th</sup> century

(Nandy, 1994). But the Chakdaha settlement was notorious for the Ganga pilgrimage at the time of development of Sooksagar (presently submerged under the Hooghly river due to river sifting) during 17<sup>th</sup> century (Garrett, 1910). Chakdaha derived its name from its mythological past. According to, traditional Hindu mythology, Bhagirath (An Hindu King of ancient Bharat), when bringing the Ganges from Himalaya to Ganga Sagar to water his fore-father's bones, left the traces of his chariot wheel (chakra) here; from then on, that place became known as Chakradaha or Chakdaha (Garrett, 1910). The Chakdaha settlement was evolved in the embankment of Hooghly River in the Indian state of west Bengal. Rivers have always been the source of drinking water supply for the human being during the historical periods and also create barriers for land routes and tracks for which crossing began to be used at ferry point and this favoured the location of towns such as Chakdaha in Bengal. In spite the construction of metalled road and railways, the rivers were the main transport lines and modes of communication. This type of transportation system invited the European merchants to come to the area when they were developed the Chakdaha settlement.

#### **Study area**

Chakdaha is an emergent urban area is situated north- west part of Chakdah Block of Nadia in Indian state of West Bengal. The study area is encircled by Gangaprasadpur in the north, Tatla-1 and Tatla-2 in the east, Rautali and Simurali in the south and Ganga flows as the western boundary of the Chakdaha urban area. Buriganga and Churni flows through the old Chakdaha into Ganga. The nearest town within 10 kms radius is Ranaghat; while the district headquarter Krishnanagar is about 38 kms away in the north of Chakdaha also the

state capital Kolkata is about 66 kms away in the south of the Chakdaha. Predominantly Chakdaha city has been developing on the Chakdaha municipality area which is consists of 21 wards covering an area of 15.54 sq/km and adjoining part of Tatla-1 and Tatla-2 Panchayet in the east and Chanduria-1, rautali, Simurali, Madanpur-1 Panchayet in south. The Chakdaha city has total population of 132855 persons in census of India on 2011 and it is known as Chakdaha Urban settlement. The male is 67135 and females 65720 out of total population and the number of literate are 111895 i.e. a total literacy rate of 90.95 percent. The total number of literate males are 58405 and total number of literate females are 53490 i.e., 93.96 percent male and 87.88 percent female literacy (Census of India, 2011).

#### **Objective**

Basic objectives of the present paper are as follows:

1. To know, how Chakdaha settlement were urbanized from a hamlet to urban one.
2. To find out main causes of development of Chakdaha and its expansion.
3. To demarcate the zone of influence of the study area.
4. To assess the changing pattern of land use over time consequent upon the formation and deformation of Chakdaha town.

#### **Database and Methodology**

To analyze the urban scenario in Chakdaha Municipal area in last few decades, the data have been collected from various sources. Secondary data have been collected from Census of India, Bureau of Applied Statistics and Economics, Govt. of West Bengal; different Local Urban Bodies, Ministry of Urban affairs,

## LOCATION MAP

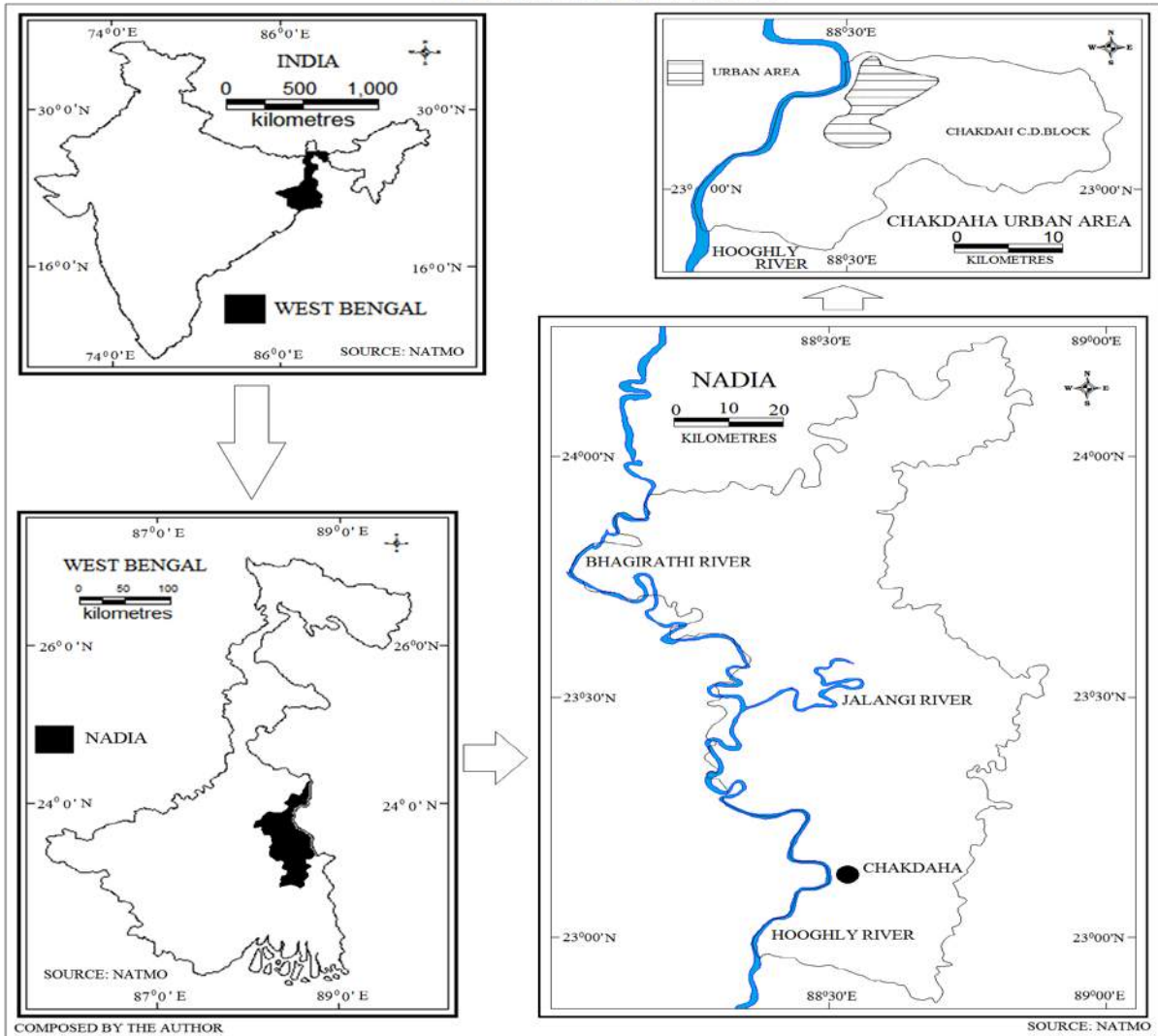


Fig.1. Location map of study area.

Table 1. Decadal growth rate of population of Chakdah Municipality.

Census Year	Population	Decadal growth rate in %
1901	5482	0
1911	4931	-10.05
1921	5216	5.78
1931	3986	-23.58
1941	5494	37.83
1951	15372	179.8
1961	35089	128.27
1971	46345	32.08
1981	59308	27.97
1991	74769	26.07
2001	86999	16.36
2011	95203	9.43

Source: Computed by the Author from District statistical Handbook, Nadia.

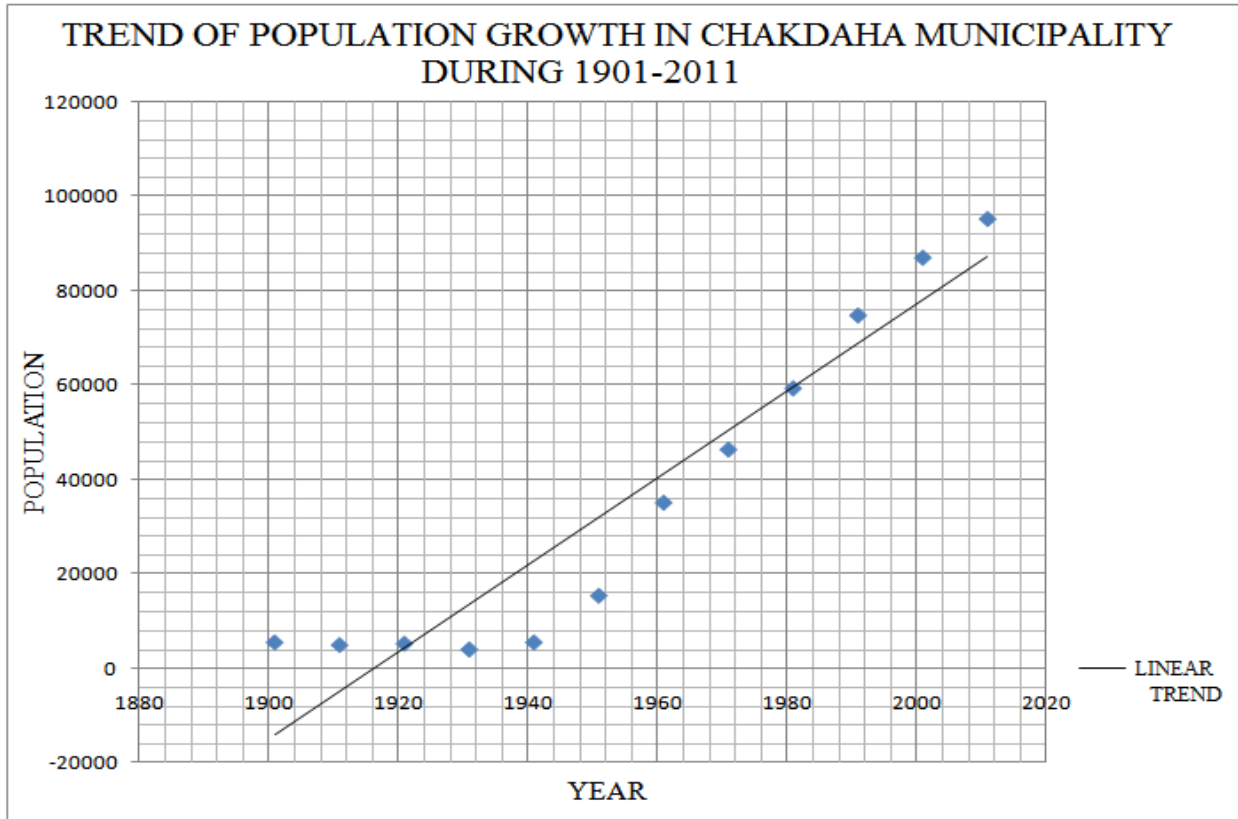


Fig.2. Urban Population Growth in Chakdaha Municipality.

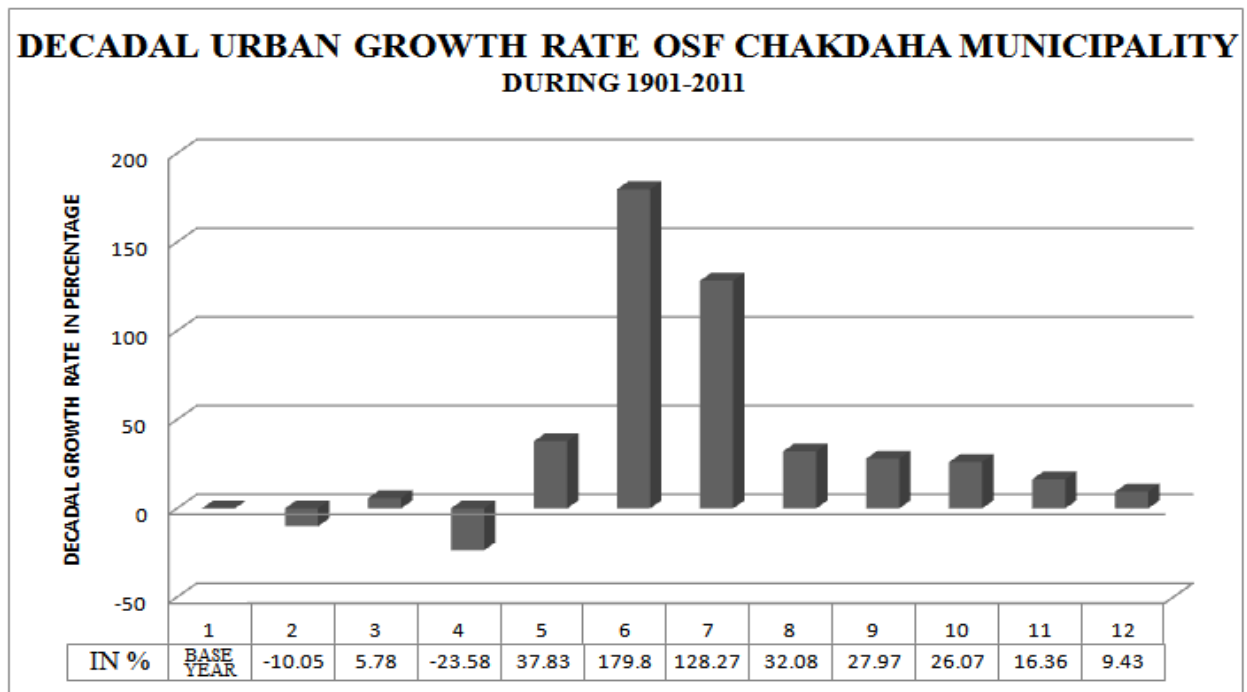


Fig.3. Decadal growth rate of Chakdaha Municipality.

Govt. of West Bengal etc. Primary data have been collected through field investigation of different urban centres of Nadia districts.

To investigate the urban scenario in Chakdaha Municipal area, both qualitative and quantitative methods have been adopted. However, in quantitative analysis both simple and standard statistical techniques have been used for analyzing the study.

### **Data analysis**

#### **Urban Population Growth over the Chakdaha Municipality**

Chakdaha Settlement was initially evolved in left bank of Hooghly River in the south-west part of Nadia at 23°05'N & 88°32'E. In the 1770, the settlement of Chakdaha was an agro-based rural settlement (Nandy, 1994). Since then the settlement has been changed into Class-I Urban Settlement in present day after the 240 years. Before the 1770, the settlement of *Chogda* (Nandy, 1994) now known as Chakdaha at present time was well developed urban settlement. The *Chogda* was mainly evolved based on the riverine ports of Anandaganj presently ward no.11 of Chakdaha Municipality, which was once a business centre (presently known as old Chakdaha).

Chakdaha was a Panchayet (local self-government at village-level) in 1885, under the British rule with a population of just 5000 people (DDP of Chakdaha Municipality). In 1886, under the initiative of a British Architectural Engineer-John Beglar, Chakdaha was declared a Municipality on May Day. But the real urbanization processes has shown after the independence of India due to population exodus between India and Bangladesh. As a whole, the population pattern, growth and status reflects a wondering population scenario of the municipality. With the other

municipalities of Nadia district (Nabadwip, Krishnanagar, Santipur, Ranaghat, Kalyani etc).

Chakdaha Municipality has a huge number of urban population. Studying the census, report we can see the population growth from one census year to another. The trend of urban population growth is increasing rapidly in every year (Table no. 1). According to census 2011, the total population of the Chakdaha Municipality was 95203. The number of male population was 48047 and the number of female population was 47156. In 2001 census, the population was 86999 and the total male population was 44239 and the female population was 42760 (Census of India, 2011 & 2001). The literacy rate of the urban population in 2011 census was 83.86 percent. In addition, Rural-urban migration is much more here. So the population is also increasing day by day. Many migrants are coming from the neighbor country Bangladesh. This also raises the population in an upward direction.

#### **Main Causes Of Urbanization in Chakdaha Municipality and its Expansion**

Urbanization is the process of becoming urban: in general usage, urbanization refers to the relative concentration of a territory's population in towns and cities. The urbanization involves towns and cities growing in relative size within a space-economy through, first, an increasing proportion of the population living in urban places and second, their concentration in the larger urban settlements and the end of the sequence is an almost completely urbanized society (Ramachandran, 2012). In the beginning of 20<sup>th</sup> century, there were only a few urban areas in Nadia district. Urbanization in Chakdaha Municipality is mainly cherished by self induced processes like –

### **Transport Facilities**

Chakdaha is an emergent urban area is situated north- west part of Chakdah Block of Nadia in Indian state of West Bengal. Chakdaha is an important municipal urban settlement has been emerged from an agro-based rural settlement before 19th century. During the historical periods the problem of communication was an important consideration in the location of cluster settlements. Initially the Chakdaha urban area has been evolved due to transport facilities on the Bhagirathi river. But the ever changing meandering course of river Bhagirathi made a huge impact of transport system of Chakdaha urban area. But thanks to East India Company, they made an alternative mode of transportation beside the Bhagirathi River, which is named the Eastern Bengal State Railway. In the present time the City of Chakdaha has been connected with other cities of Bengal in three different mode of transportation. Chakdaha is the main linkage city between Kolkata and district town Krishnanagar, by the Eastern Bengal State Railway and Kolkata and Siliguri is also connected by NH-34. Stretching the heart of Chakdaha U/As. Chakdaha is also important city for exchange of goods of International trade because of Chakdaha-Bongaon Road. Bhagirathi is flowing in the western side of Chakdaha. So ferry and steamer services are also available here. Regular boat service is also available from Chakdaha to Jirat and Balagarh.

The municipal area is connected by a bituminous road network of a length of about 102.5 km having widths varying from 12 ft to 60ft. Different types of vehicular traffic including heavy vehicles like buses and trucks ply on them. Most of the major roads are damaged and subjected to encroachments and congestion. The total length of roads according

to municipal records is 150.50 kms (2010). According to the Urban Household Survey, According to the Urban House reported that approach road is semi Pucca by access of Pucca road by 24% households and Kutcha road by 28.83% Households. Population residing at Ward No 1,3,4,10, 18, 19, 20 has opined of access of Semi Pucca road while residents of ward no 2, 8, 18, 5,6,12, 15, 17 has reported access to Kutcha road (DDP of Chakdaha Municipality).

### **Administrative Facility**

Chakdaha was once a Panchayet (local self-government at village-level) in 1885, under the British rule with a population of just 5000 people. In 1886, under the initiative of a British Architectural Engineer - John Beglar, Chakdaha was declared a Municipality on May Day with Kazi Mirza Ittेशamuddin as its first Chairman (DDP of Chakdaha Municipality). Now Chakdaha is the headquarter of administrative divisions of Nadia and The Administrative status is ULB. So it is an important urban area and it is also oldest urban area of Chakdah Block. B.D. Office, Post office, Police Station and other important administrative offices are found here.

### **Educational Facility**

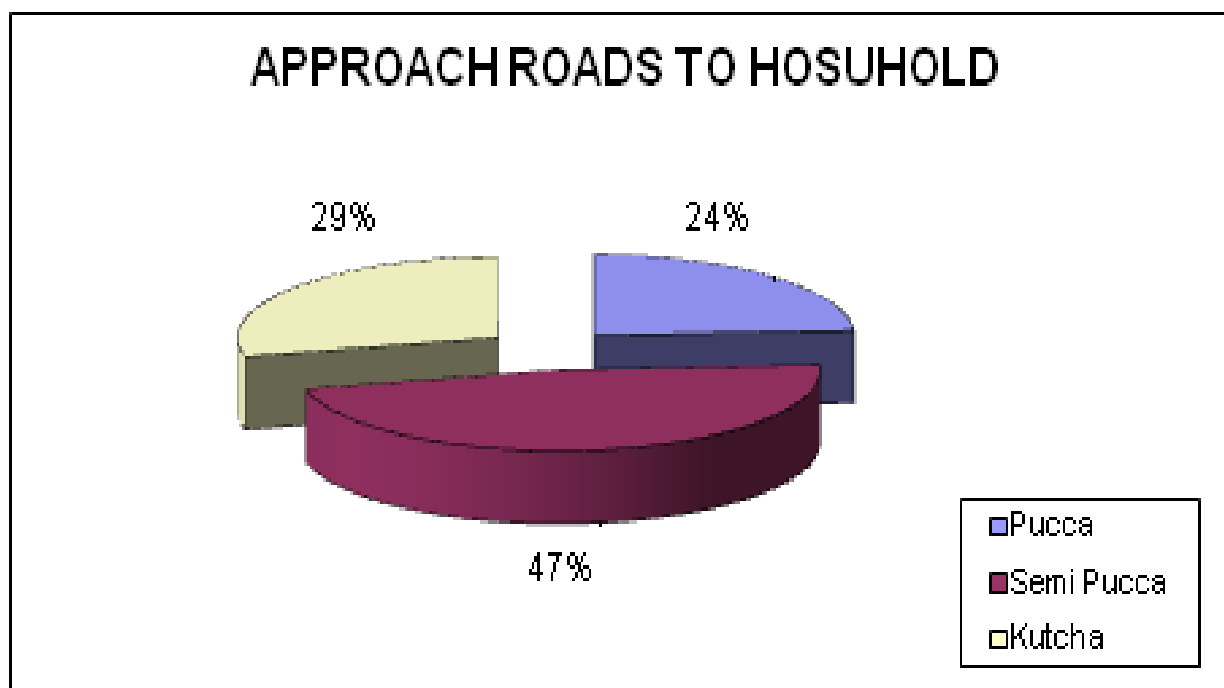
Due to educational opportunities, it has become an important educational centre. Most of the inhabitants of this Block and Urban areas around Chakdaha Municipality come here for the Educational purposes.

The Primary Education Improvement Plan involves improving the delivery of educational services through improvement in physical infrastructure, school management and ensuring satisfactory quality of education in schools. It will emphasize on the improved delivery of Government Plans/Schemes, dealing

**Table 2. Type of roads in Chakdaha Municipality.**

Sl no.	Type	Length in kms
1	Black topped	114.40
2	WBM Road	8.00
3	Brick Solving	22.80
4	Concrete	3.35

Source: Municipality records



**Fig.4. Distribution of road in Chakdaha Municipality** (Source: Urban Household Survey).

**Table 3. Educational Centre in Chakdaha Municipality.**

SL NO.	Education Centres	Numbers
1	Primary school	46
2	High School	07
3	Higher secondary school	12
4	General College	01

Sources: Chakdaha Municipality

Breaking point analysis can be used to define the sphere of influence between competing centres by using the formula:

$$\text{Breaking point from (B) small town is: } \frac{\text{Distance between AB}}{\sqrt{\text{Population A / Population B} + 1}}$$

with exclusion issues, opportunities for public-private partnership and community participation in schools. The primary education plan of the municipality targets improvement in the school infrastructure through identified infrastructure developments as well as involving other excluded children through improving the

**Table 4. Zone of influence of the Chakdaha urban area in 2011.**

Municipality	Population	Municipalities	Population
Chakdaha	132855	Santipur	288718
		Ranaghat	235583
		Krishnagar	181182
		Nabadwip	175474
		Kalyani	100620
		Bongaon	110668

Municipality	Distance (in km)	Distance (in cm)	Bp(In cm)	Bp(In km)
Chakdaha	22	2.2	1.31	13.1
	11	1.1	0.63	6.3
	35	3.5	1.89	18.9
	41	4.1	2.19	21.9
	14	1.4	0.65	6.5
	34	3.4	1.62	16.2

*Source: Census of India 2011*

**Table 5. Zone of influence of the Chakdaha urban area in 2001.**

Municipality	Population	Municipalities	Population
Chakdaha	101320	Santipur	138235
		Ranaghat	145285
		Krishnagar	148709
		Nabadwip	125341
		Kalyani	81984
		Bongaon	102163

Municipality	Distance (in km)	Distance (in cm)	Bp(In cm)	Bp(In km)
Chakdaha	22	2.2	1.18	11.8
	11	1.1	0.60	06.0
	35	3.5	1.92	19.2
	41	4.1	2.16	21.6
	14	1.4	0.66	06.6
	34	3.4	1.71	17.1

*Source: Census of India 2001*

existing services like child labour school etc (DDP of Chakdaha Municipality).

The educational set up of Chakdaha Municipality is as follows:

**Economic development**

It is a true that urbanization development and the economic are intimately associated.

The urban area is a heart of economic activities like major commercial areas, trade centre, banking facilities etc. In term of Administrative status Chakdaha is Urban Local Body.

The Local Economic Development (LED) involves identifying the local



resources; local skill sets and seeks to generate ideas to fully utilize the available skills to stimulate economic growth and development. It aims to create employment opportunities and to improve the living standard of the residents, especially the poor. Local Economic Development (LED) is an outcome based on local initiative and driven by local stakeholders. An Integrated Approach requires all the local stakeholders including all levels of government, business, education institutions and the community to work together so as to create a vibrant local economy, through a long-term investment strategy (DDP of Chakdaha Municipality).

The Municipal area does not have an existing industrial setting. Limited resource and limited skill have led to the emergence of small scale manufacturing like readymade garment making etc. The trend of urbanization has created space for certain services like electronics servicing, wholesaling and distributorship. Promotional initiatives like creation of market complex envisaged with Public Private Partnership can bring in a boost to the economy.

List of Industrial sectors-

1. Industrial estate-1
2. No. of industries-7 small scale
3. Trade and Commerce – Vegetable Markets, Cloth Markets, Weekly Market (Hat).
4. Mini Market 5 Markets, 5 no. of Shopping centres
5. No. of Shops –6700(approx)
6. Principal items of Trade – Cloths, agricultural products Like Jute, vegetables etc.

### **Health Facilities**

In Chakdaha Municipality, health facility has been improved mainly through the establishment of hospitals, which are under Health and Family Welfare department, Govt. of

West Bengal. At present One State General Hospital, One Veterinary Hospital has been served the citizen of Chakdaha. The thrust of the Health Care Delivery Improvement Plan is on holistic health care in order to achieve an overall, improvement in the health of citizens through better management and creation of health infrastructure.

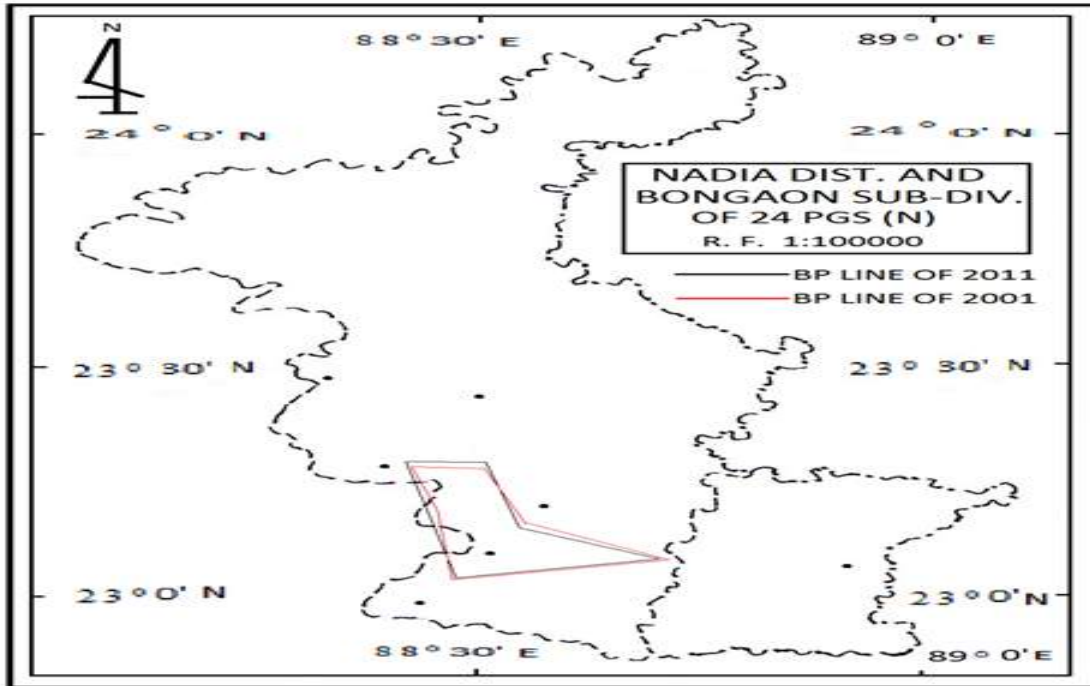
The urban poor lack access because primary health care is seen as an extension of the national health care system rather than as a municipal service. Lack of adequate man power coupled with lack of awareness of the beneficiaries on key preventive aspects like vector control, RCH and Public Health issues leads to partial coverage in terms of population and service.

The Municipality thus needs to stimulate the provision of appropriate primary health care targeted towards the low-income neighborhoods. This will include strengthening of facilities through provision of creation of sub centres under VBPHCS programme. Another very important intervention has been along the lines of Health Information Base Creation and Information Dissemination through strategically designed IEC material and campaigns. Community participation in primary health care is of particular importance to ensure sustainability and affordability of the system (DDP of Chakdaha Municipality).

### **Other facilities promoting Urban Agglomeration**

Based on Municipal records (2001), about 29175 houses are electrified. Different kinds of amusement facilities are also present here, like Cinema-Hall, Community Hall, Auditorium, Play Ground etc. All of the items attracting people from different parts of the other portion of Chakdaha Municipality based on which counter urban agglomeration is taken place.

### ZONE OF INFLUENCE OF CHAKDAHA URBAN CENTRE (2001 AND 2011)



source : Computed by Researcher

Fig. 5. Zone of Influence of Chakdahā Municipality.

### CHANGING PATTERN OF LAND USE OF CHAKDAHA URBAN AREA

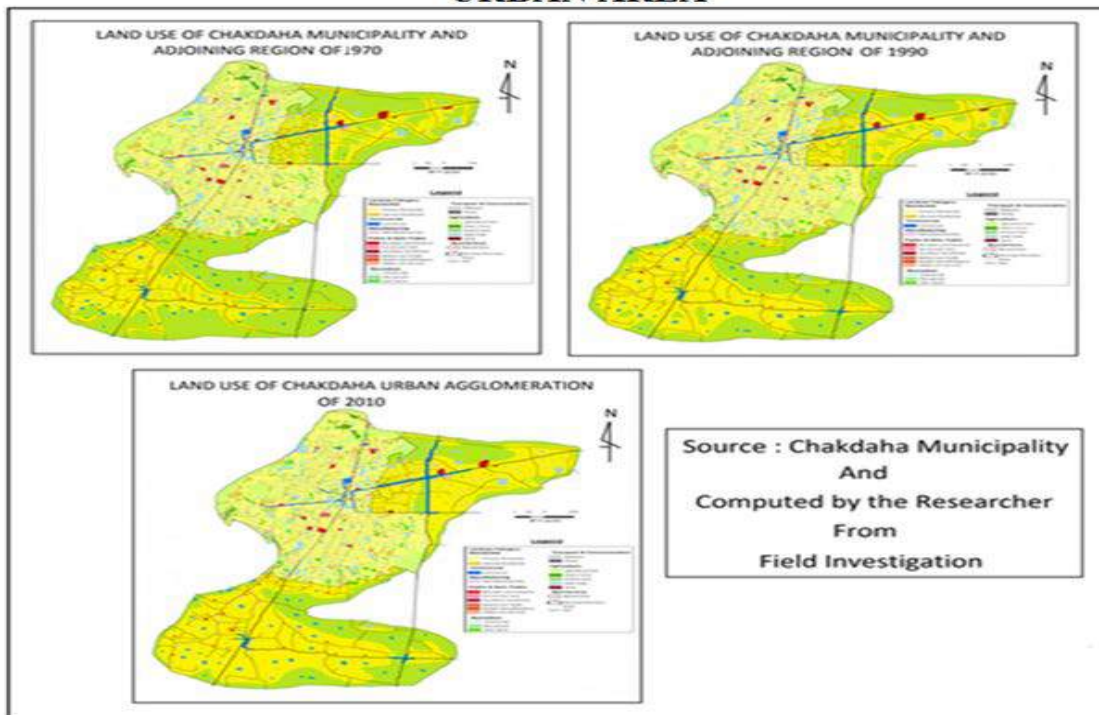


Fig.6. Changing Pattern of land use around the Chakdahā Municipality.

### **Spread of Urban Agglomeration around the Chakdaha Municipality**

Chakdaha is situated at the southern part of the Nadia district and also the left bank of Bhagirathi River. The other municipalities are situated like a star shape around the Chakdaha municipality. The zone of influence of the urban area is increasing and spreading in every decade. Breaking point analysis of 2001 and 2011 census is showing the trend of urbanization in Chakdaha Municipality. The urbanization is not only encircled in municipality but also spreading in the rural area of outer side of Chakdaha municipality. The areas are gradually evolved and urbanized and urban agglomeration is going ahead.

### **Changing Pattern of Land Use of Chakdaha Town**

Chakdaha is an important municipal urban settlement has been emerged from an agro-based rural settlement before 19<sup>th</sup> century. Once a time Chakdaha were predominantly a Panchayet area under the British rule with 5000 populations in 1885, it became a municipality on the May Day 1886. After the established of municipality the proper land use plan has been done.

Now Predominantly the Chakdaha urban agglomeration has been developing on the Chakdaha municipality area which is consists of 21 wards covering an area of 15.54 sq/kms and adjoining part of Tatla-1 and Tatla-2 Panchayet in the east and Chanduria- 1, rautali, Simurali, Madanpur-1 Panchayet in south. Now the whole urban area was under the land use planning of the municipality and B. D. Office.

Land is the basis of terrestrial biodiversity by providing the biological habitats and gene reserves for plants, animals and microorganisms, above and below ground (the biotic environmental function). The land use of

Chakdaha Urban area has been changed in various time. Land is a scarce and the most important natural resource in a municipality and a city (DDP of Chakdaha Municipality). The relevance of land use planning assumes all the more significance due to increasing pressure of urbanization. The purpose of land use planning is to regulate the use of land to prevent misuse, overuse and abuse of this resource. Thus land use planning is mainly done for meeting the consumption needs of growing population by efficiently using the resource, by identifying the prospective uses of land, conservation and development of land and devising suitable regulatory control over development. Chakdaha municipality was established in the year 1886, but the real development has been initiated after the Independence. In the present paper, we were analysis the changing pattern of urban land use of Chakdaha Municipality and urban area.

### **Conclusion**

The historical evolution of any urban settlement is a spatio-temporal change in perspective of physical, socio- economic and demographic aspects. Before 19<sup>th</sup> century, Chakdaha was an agro-based rural settlement which was influenced by river- based transportation. The shifting of Hooghly river channels creates tremendous locational hazards to these settlements. But the settlement has survived and evolved as an urban one. This is a huge transformation of this urban settlement. Therefore, Chakdaha urban agglomeration needs some suitable policies to survive in future; likes- to prevent the landmass from river bank erosion, to make a land use plan to create proper balance between residential area and agricultural zone, to establishment of an over bridge on railways and two- lanes N. H.-34 to diminish the transport hazard .

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