

Rajarhat New Town an Urban Perspective: A Case Study of Urbanization, West Bengal, India

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Abstract— New Town Rajarhat is a planned city of West Bengal near Kolkata. It's also called fast growing planned satellite city in West Bengal. This city is situated in mainly North 24 Parganas, partly South 24 Parganas and eastern side of Salt Lake city. Mainly two types of inhabitants are living here. One type of them who are living from their birth and growing to adjust with the environment which has changed by Government policy and land use patterns. Other type of inhabitants who have come from outside to take land plot or flat for living. They have chosen this area for good services and facilities provided by Govt. So Rajarhat New Town belongs to various stages which are based on the occupational structure of total inhabitants in this area. Surveying, collecting data (primary and Secondary) and information it infer that there are maximum facilities and services which are provided by this type of modern city. Different types of land uses are seen here but it's separated from different area wise. Some of the most important facilities are modern educational institute, IT industry, different cultural centres, modern super speciality hospitals, planned road construction, under construction metro railways, different types of head office, eco-park, Museum of modern art, shopping mall, star category hotels etc. Yet this substantive and original contribution to the study of Rajarhat New Town Municipality critically analysis the Strength and weakness of the Indian urban system and provides new insight into contemporary urban problems. For critical explanation, have been collected different data and sample-survey from old inhabitants who are suffering from this changing environment controlled by Govt. policy, private companies and organizations. It is accepted that Rajarhat New Town is very important planned city in this time after Salt Lake city in West Bengal.

Index Terms— Land use changing pattern, Demographic set up, Urban Structure.

I. INTRODUCTION AND BACKGROUND OF STUDY AREA

New Town, a neighbourhood of Kolkata, located in North 24 Parganas District of the Indian state of West Bengal, it a fast growing planned satellite city. This new information technology located in Sector-V and residential hub is being developed on the north-eastern firings of Kolkata. It consists of the two erstwhile villages Rajarhat and Bhangar (located in South 24 Parganas), which is now statutory planned development area. The area mainly consisted of huge acres of cultivated lands and water bodies, which have been acquired and developed in a planned manner. The process of investing for residential and industrial facilities and infrastructural

development of the area has mainly started under the leadership of the then chief minister of West Bengal Buddhadev Bhattacharya in the 1990. The New Town has been also declared as a solar city by the previous UPA Government at the centre and now the initiatives are being taken to declare this city as smart green city, a dream project of Narendra Modi (Prime Minister of India) with the help of Mamata Benerjee (Chief minister of W.B) Rules of business change in 1997, entrusting Housing Development for development of Rajarhat Township comprising Rajarhat Police Station of North 24 Parganas and east while Bhanagar Police Station of South 24 Parganas. Series of studies were made and reports from experts including environment clearance on the environment Impact Assessment were obtained. With the objective of developing an eco-friendly green dotted New Town, it was designed develop the area in different phases. The area was initially divided into three action areas. At present action areas have been re-aligned as follows:-

Description of different area of Township of New Town

Location	Action area-I	Action area-II	Action area-III	CBD
Area in hectares	677	1310	783	183
Progress of infrastructure development	All most complete	More than 50% work completed	Work in progress	Work in progress

Beside an area of around 135 hectares is earmarked for setting up water treatment plant and garbage disposal centre.

A. Study Area:

Rajarhat is a neighbourhood of Kolkata, located in North 24 Parganas district of the Indian state of West Bengal. Lying just on the periphery of the planned New Town, Kolkata, Rajarhat has seen huge spurt in real estate development. The New Town Kolkata was enabled with 10.5km of Wi-fi Zone connecting the Rajarhat Main Arterial Road to the airport to sector V, which also makes it India's first Wi-fi road connectivity . The stretch has already been declared as a green corridor . New Town is located at 22°21' N to 22°35' N and 88°17' E to 88°28' E. This Township covers an area of 67km² and is located in Barasat Sadar Division of North 24 Parganas, District, West Bengal, India.

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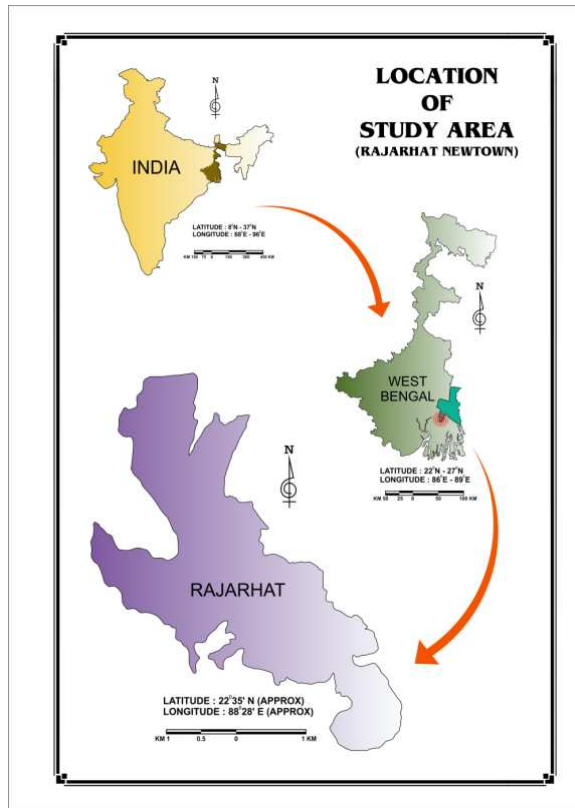


Figure 1: Location Map

Source: Orient Longman School and WBHDCO

B. Objectives

The present study is divided into two parts. The first part is non analytical covering the genesis of New Town. The second part covering analytical part whereby many local aspects has been studied intensively. The following objectives have been located upon:

1. To assess the demographic characteristics of the Town
2. To evaluate the socio-economic facets by nothing the literacy, land use character etc.
3. To assess the urban importance and status of the town.
4. To analyse the status of the original people of the area.

Due to planned urbanization in the study area, there is a significant change in land use land cover and as well as in demographic structure. The prime objective of the study is to provide quantitative information about spatial change of land use and to analyse people's perception about this ongoing township project. This paper has made an attempt to analyse the socio-economic structure of selected study area

II. METHODOLOGY

For the study, some secondary data (land use) were acquired from internet. New Town project area map is collected from Bijon Bhaban, West Bengal Housing Infrastructure Development Corporation Ltd. (WBHIDCO), Govt. of West Bengal.

Field survey involves the work that is done in the study area. It involves collection of both primary and secondary data, drawing of maps; conduction GPS survey, market survey and House hold Survey are so on.

A Perception survey has been under taken to measure the level of satisfaction/dissatisfaction and to explain the factors behind it. A careful study to observe the effect of land use change on the socio-economic condition of the existing rural settlement of that region has also been made.

Past study is the most important part of this paper. The huge data and information are collected from the field is processed, tabulation and analysed using various statistical and other techniques to arrive at the meaningful of the study.

After collecting data, different cartographic techniques have been applied and critically explained through the interpretation.

All these secondary information have been tabulated and diagram have been prepared with the help of Microsoft Office Excel 2007. MapInfo Professional version 10.5 has been used for thematic mapping and photo shop software has been also used for insert images.

III. DATA ANALYSIS

A. Land use Changing Pattern

Land use of a region is the mirror image of the people's livelihood. In rural areas agricultural land play the dominate role in its economy and build up area i.e residential, commercial and industrial area which control the economic activities of the region. Land use change occurs due to various reasons in different places and time. In 21st century rapid urbanization causes not only the changes in land use but also it becomes a threat to the environment and ecology. So the land use change needs a special attention for sustainable development. This ongoing township project causes a huge change in land use and the changing land use has an enormous effect on the inhabitants of the old rural settlement. As the agricultural land transformed into residential parts and commercial or other urban functional areas, these is a gradual influx of population from different parts of Bengal and other parts of India as well. Some of rural populations are rehabilitated by the government of west Bengal in other part of the New Town. Some of the people lost their agricultural land and some of them lost their work related to primary activities.

Land use and its change are the burning issues of contemporary Geography. Due to rapid urbanization land use changes occurs at past rate in different place. For this reason more than 85% of agricultural labour and cultivator are now in other occupation activities like security guard, care taker etc. So it is necessary to know the socio-economic condition of the existing rural population of the region.

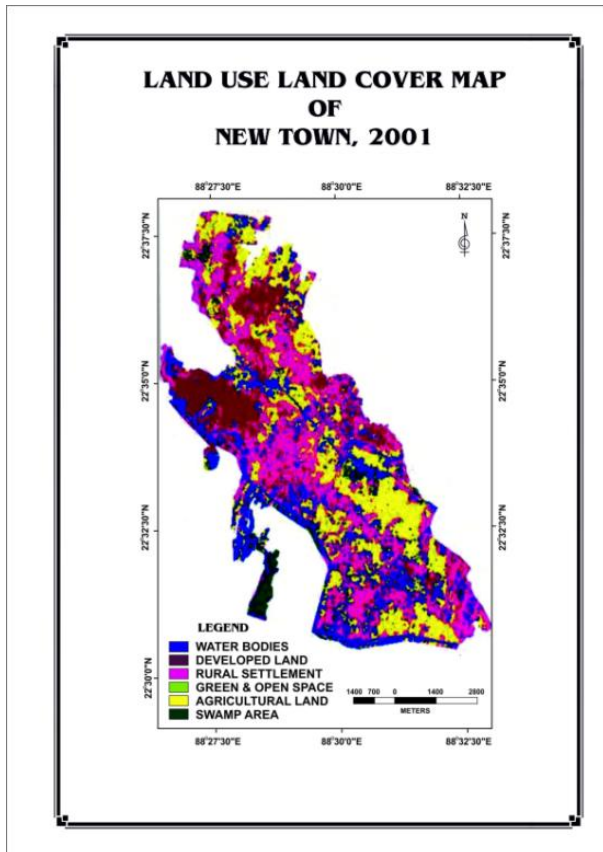


Figure 2: Land use and Land cover Map of Rajarhat New Town, 2001

Table-1: Land use pattern in Rajarhat, New Town, 2001
Source: WBHIDCO

Sl No.	Land use land cover	Detail	Area in sq km.	Area in percentage
1.	Rural Settlement		19.74	29.40
2.	Developed Land	i)Business & Market ii)Industrial Area iii)Educational , Institutional & Cultural Area iv)Road & Transportation v)Others	14.37	21.41
3.	Water Bodies	i)Pond ii)Cannel	10.53	15.54
4.	Green & Open Space	i)Recreation ii)Vacant land	.10	0.03
5.	Agricultural Land		4.48	6.67
6.	Swam Area		18.09	26.95

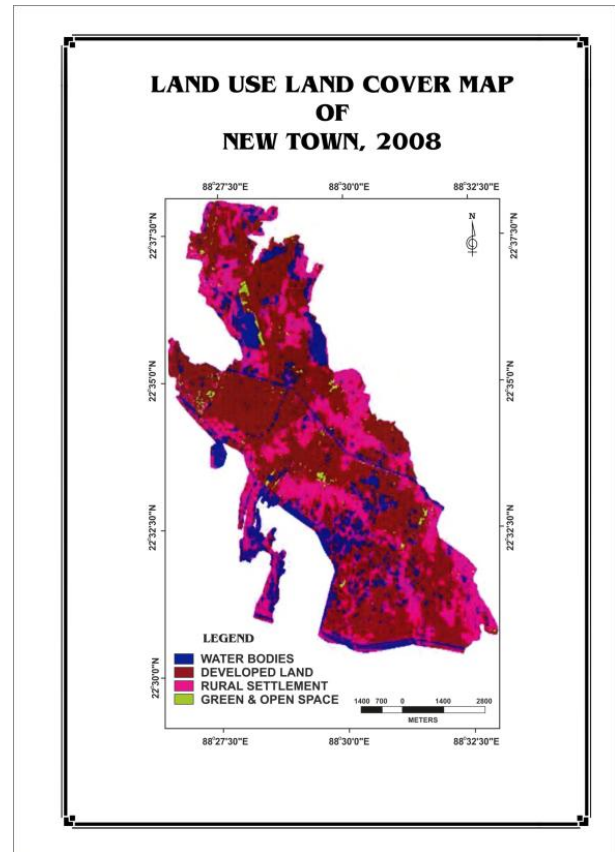


Figure 3: Land use and Land cover Map of Rajarhat New Town, 2008

Table-2: Land use pattern in Rajarhat, New Town, 2008
Source: WBHIDCO

Sl No.	Land use land cover	Detail	Area in sq km.	Area in percentage
1.	Rural Settlement		22.45	33.35
2.	Developed Land	i)Business & Market ii)Industrial Area iii)Educational, Institutional & Cultural Area iv)Road & Transportation v)Others	36.68	54.49
3.	Water Bodies	i)Pond ii)Cannel	7.31	10.86
4.	Green & Open Space	i)Recreation ii)Vacant land	.87	1.30

From several land use map it has-been observer, there was only one metalled road connecting few villages i.e. Recjuani, Hatiara with Kolkata. In 2001 it is seen that phase I of project area was reclaimed/ developed for urban utilities. In 2008 total area was developed with roads and built up areas. Except exiting rural settlement area the agricultural land use was converted into developed area.

From there the land use land cover maps were derived with the following six classes:

i) Agricultural Land

- ii) Developed Land
- iii) Water Bodies
- iv) Swamp Area
- v) Rural Settlement and
- vi) Green open space.

Due to this township project agricultural land and swamp area was vanished from this area in 2008. It indicates agricultural land loss and job loss of the cultivators and agricultural labours. Water bodies decreases 3.04 sq km within 7 years, in other hand green and open space increases .772 sq km.

B. Demographic set up

As per the 2011 census Rajarhat had a total population of 189893 persons. Male constitute 50.55% of the total population and females 49%. Rajarhat has an average literacy rate of 73.49%. With the completion of the establishment and development of the township, the population of the area is poised for a significant increase. The sex ratio, literacy rate and every other regional statistics will therefore see radical changes within a few years. The existing population is mainly engaged in subsistence agriculture, animal husbandry with skilled and unskilled labour. The population intended to be settled here is the chief professional segment, the upper middle and middle classes. Also non-resident Indians are investing in residential and commercial spaces. It will be a vibrant cosmopolitan demographic mix.

In this project area, nearly 50% population belongs to scheduled caste and 1.46% belongs to scheduled tribe. The concentration of population is high in the northern part due to nearness of the Rajarhat-Golpalpur municipality. Also the people of this region are mostly engage in household and other than household activities. In rest part of New Town area belonged to agriculture. So that most of the people were cultivators or agricultural workers. And a large number of people were marginal agricultural workers or marginal household worker.

Male Female composition: The male female composition shows the variance of male and female in statistical manner. The area surveyed under Rajarhat-New Town Municipality shows the total male population 51% and total female population 49% are balancing halves.

Age sex composition: Age sex composition represents the variation of population in different age groups. In area of Rajarhat New Town Municipality; three types of age groups are seen, there are children (male and female), adult (male and female) and old (male and female) population, there are the adult population is 65% where the old and child population are 8% and 24% respectively. This composition shows a low dependency ratio.

Literacy status: Rajarhat New Town municipality have literacy status which includes the number of literates, illiterates and child below 3 years. As per the survey and collecting data there is not much difference between the total literates (56%) and the total illiterates (39%). The female literates are much less than the male literates and vice versa in the case of illiterates.

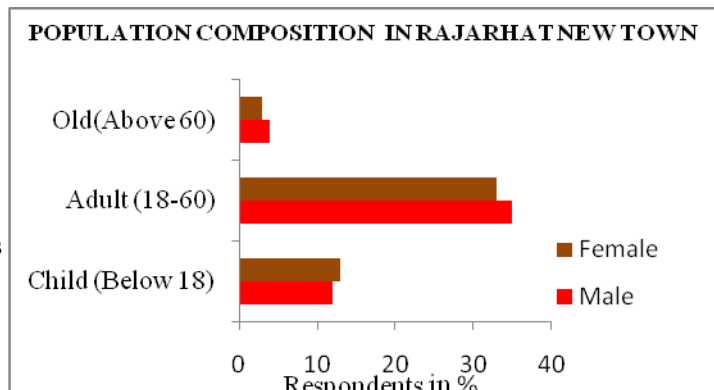


Figure 4: Population Composition

Table-3: Present Status of inhabitants in Rajarhat NewTown
Source: Field Survey, 2015

Sl. No	Particulars	Percentage of Responds
1.	Total Male Population	51
2.	Total Female Population	49
3.	Adult Male Population	35
4.	Old Male Population	4
5.	Child Male Population	12
6.	Adult Female Population	33
7.	Old Female Population	3
8.	Child Female Population	13
9.	Total Literate Population	56
10.	Total Illiterate Population	39
11.	Child Below 3 Years	5

Education Status: In survey area there are total literate population as 57% and total illiterate population as 38% and child below 3 years is 5% which is not considered under literates. According to this sample survey, there are education statuses under various categories. Maximum people have completed their education up to Higher Secondary level. Remain of male and female population have completed their education in Graduate level. Mainly few male candidates who have overcome in Post Graduate level and technical education.

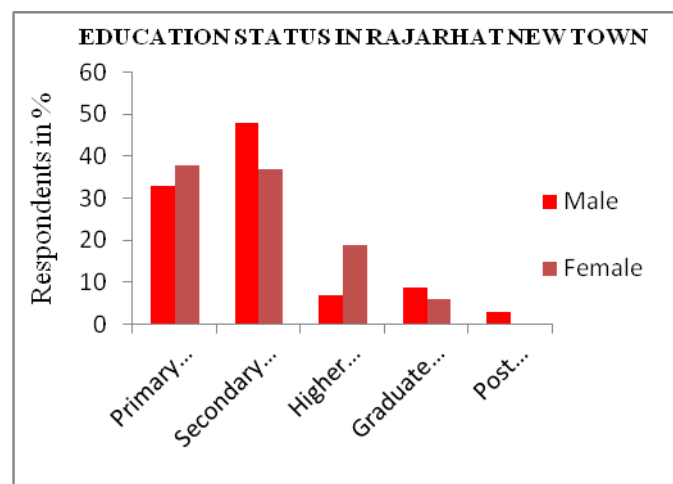


Figure 5: Education Status

Table-4: Present Status of inhabitants in Rajarhat New Town Source: Field Survey, 2015

Sl. No	Particulars	Percentage of Responds
1.	Male Population Under Primary Level	33
2.	Male Population Under Secondary Level	48
3.	Male Population Under Higher Secondary Level	7
4.	Male Population Under Graduate Level	9
5.	Male Population Under Post Graduate Level	.5
6.	Male Population in Technical Level	.5
7.	Male Population in other education	2
8.	Female Population Under Primary Level	38
9.	Female Population Under Secondary Level	37
10.	Female Population Under Higher Secondary Level	19
11.	Female Population Under Graduate Level	6

C. Urban Structure:

Being a planned township, NewTown has been divided into three areas: Action Area – I, mainly consisting of malls, a Sub – CBD and planned residential and commercial plots; Action Area – II is supposedly planned to have a main central business district (CBD), institutional plots, IT Business Parks like DLF and Unitech, and plots for large apartment complexes, it will also house the Kolkata Museum of Modern Art, a open Maiden with an Eco Park built around a water body; Action Area – II C has many residential housing projects like Highland Woods, Akankha, Sunrise Point, Moonbeam Housing, Starlit etc; Action Area – III mainly consist of high rise residential complexes and mini sub Townships like Uniworld City and Sukhobristi and upscale gated residential communities such as DLF New Town Heights, Shrachi's Rosedale, Unitech's Uniworld City, Tata's Eden Court and Keppel's Elita Vista. Various educational institutes such as IIT Kharagpur, St. Xavier's college and IT major Infosys and Wipro World are setting up their campuses there. A sprawling arts institute has already been set up.

Roads and Bridges: - Infrastructure already developed:

- 1) 6 lanes Bridge over Krishnagar Canal.
- 2) Major Arterial Road of 59 metre width and 10.75 kilometres long.
- 3) Bridge over Bagjola Canal on existing MAR alignment.
- 4) 2nd Bridge over Bagjola Canal or North-South corridor.
- 5) Fly Over on the MAR and VIP Road Junction.
- 6) Bailey bridge over Bagjola Canal.
- 7) Three small bridges over Link Canal.

8) Bridge over pass Khal at Mission Bazaar.

9) Fly Over on MAR in Action Area-I.

The township has been developed as an environment friendly city with large areas of open green land, water bodies, park etc.

Transport: The main mode of transportation, like other parts of Kolkata includes air conditioned, non-Ac government and private Buses, taxi, and other popular India transports like autorikshwa, however, the buses are sporadic and the routes originating out are very few. The New Garia-Airport line of the Kolkata Metro is supposed to pass through New Town by 2014. But the construction is not completed till now due to several problems. There is also planned to extend the circular Railway from Bidhannagar Road (Ultadanga) to New Town via Lake Town and Salt Lake. The Netaji Subhas Chandra Bose Airport is very near to the township, providing air connectivity to the rest of the world. Over all the area is being well planned with wide, thoughtfully planned roads and expressways.

Study area of Rajarhat NewTown Municipality the transport survey has been done in various roles. The time taken for transport survey in generally bared on the evening and day time. As it can be seen that maximum number of vehicles in from Sokhobristi to Info space and vice versa. A moderate number vehicle is seen from Sector – V to Rabindra Tirtha. Thus it can be said that most of the time of the roads remain busy since it is the connector of various offices, schools and colleges. The maximum number of vehicles is private cars, followed by motorcycle, bus and taxi. Rickshaws are only seen at small portion. Other vehicles have average flow in the roads.

IV. PROBLEMS AND SUGGESTIONS

Rajarhat New Town area is a well planned and well developed area; so many problems arise with this rapid growth of the Rajarhat area. The noticeable problems which are faced at the time of survey were:

- i) Local people who are living at road side, facing the problem of noise pollution very much. All the time night or day vehicles are passing through the area. So, bad noise, weird horn of many vehicles is the causes of objection of the people.
- ii) The Kolkata Airport is located at very near to this planned area, approximately within 20 minutes distance, so the noise of the aeroplanes create many problems such as headache, mental problem, vomiting problem, hearing problem etc.
- iii) Another big problem is environmental problem. Cutting of trees and making of high rise buildings creates air pollution, dirt problem etc.
- iv) WBHIDCO started the project work for a planned city at Rajarhat in early 1990. For this cause a noticeable number of local people have lost their residents for land acquisition by WBHIDCO.
- v) Maximum private institutions are built in this area but govt colleges are not found. So higher education is very problematic owing to capacity of costing.

Any planned city is the most important for any county like India but some suggestions can be taken to develop this city without social hazards.

- i) Local people have to change their occupation basis on urban environment.

- ii) State Govt should be taken to the opinion of local people regarding the pollution i.e. noise, air, and water pollution and must be implemented the policy, rules and regulations.
- iii) Plantation is the most important in this area, so social forestry should be applied beside the roads and canals.
- iv) Vocational education should be introduced in all secondary and higher secondary schools so that girls can learn various kinds of activities by which they can socially and economically independent.

V. CONCLUSION

After the overall discussion about the urban aspect on Rajarhat New Town it is clear that it is the modern satellite city in West Bengal, India. Different types of cultures, languages, and religions are assimilated here. Therefore this city is a planned city where different modern services, facilities and amenities are provided by Government. This area was a vacant land, part of East Kolkata wet land and agricultural land of North and South 24 Parganas, after that this area has been changed by state Govt. with the help of central Govt. Different constructional projects are running to their finishing task and this area will be changed day by day though shape, size and amenities. Maximum pressures are decreased from Kolkata with traditional city after the formation of Salt Lake city and newly formed Rajarhat New Town. It is said that this city is a pioneer city as modern aspects where everything is concentrated among residential area, business area, service area, IT sector area, leisure area according to well planned land use pattern.

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