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RESEARCH ARTICLE

**LIVING WITH THE WATER : A STUDY OF CHANGING LIVELIHOOD STRUCTURE IN
A PERIPHERAL PART OF KOLKATA METROPOLITAN AREA, WEST BENGAL**

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ABSTRACT

The Baidyabati Khal (mentioned as River Kunti in Survey of India topographical sheet no.- 76 B/5) is an important irrigation channel for not only Baidyabati but also for the whole district. It is connected to DVC canals through aqueducts and other canals. This canal, along with Dankuni Drainage Canal creates a unique living space in the northern part of Baidyabati municipality. The Drainage channels, like most of the waterways of deltaic Bengal, is suffering from the problem of heavy siltation and frequent inundation of the surrounding areas. The study area, part of ward no. 17 and 18 of Baidyabati municipality, situated in the northern and north eastern part of the Baidyabati municipality, represents a marginal social niche where people have learnt to live with seasonal inundation and without many urban civic facilities that their fellow civilians who live in the core and more developed part of the same municipality enjoy. The present study tries to assess the social environment of the area and analyses how land use changes have affected the direction of development and socio cultural dynamics of this area. The study is based on data collected by primary survey and analysis of those data by quantitative and qualitative methods. The study shows how land development is changing the life of this urban marginal society and tries to understand if this change is a part of balanced urban development.

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INTRODUCTION

Urbanisation is a very complex process, especially, in a country like India, which has a strong agrarian socio-cultural base, complex physiographic characteristics, a history of colonial occupation and the agony of the partition of the country before independence. All these factors affected and, are still affecting the urban dynamics of this country in various ways. With increasing population, including increasing number of immigrants from hinterlands, the metropolitan cities and areas around it with good accessibility are becoming a hotspot for land development and re-development. It is very important to note that change in land-use for making commercial residential complexes is often called 'land development', because, "development is one of the most complex words in the English language" (Johnston et al., 2005). This term has a deep rooted history of imperial miss-use, colonial miss reading of different socio-cultural communities and "failure of free market capitalism" (Johnston et al., 2005). The use of the word development only reminds again of the questions that are

attached to the word and its relation with the welfare of the whole nation. "What is development? Increase in export? Supply of unrestricted Dollars for foreign visits of the educated middle class? Or the change in hopes, dreams and aspirations for the boy who worked as a daily wage labour in an agricultural field of a remote village of our country?"(Marjit, 2009) Another question is, how far these development of the land is contributing towards the development of the people? Only time and proper socio-economic analysis brings in light the true colours of land development of a certain area.

In Indian urban scenario, urban agglomeration around the metros have a lot of different type of land uses, economic activities and socio-cultural niches within the official urban administrative boundaries compared to more easily identifiable belts in developed nations. Inside a metropolitan area in India, we can find vast tracts of agricultural lands, large shanties like Dharavi in Mumbai or Kathputli Colony in Delhi, socially segregated communities based on language, religious or caste factors, areas specializing in different primary or secondary or tertiary activities which have a strong influence on the

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community out there . For proper and balanced development of Indian urban centres the complexity of the different facets of urban communities must be taken into consideration. In these Indian urban units we often see people attracted to the urban agglomerations due to scope or ‘hope’ for the scope of jobs and a better socio-economic life which draws a lot of people from areas around the urban agglomeration, especially the rural areas around it. These immigrants, in search of a better life, come to the urban areas but, are often forced to settle themselves down in metro shanties or slums or any kind of cheap land available to them in the metropolitan area. The study area in question is such an area where the physical attributes and socio-cultural factors have created a very interesting urban community around a seasonally inundated water meadow inside Kolkata Metropolitan Area situated in its north eastern part, on the eastern bank of river Hooghly.

Study area

The study area is situated in parts of ward no.-17 and 18 of Baidyabati municipality. It includes almost 2.5 square km. area and extends from $88^{\circ}19'4''$ East to $88^{\circ}20'30''$ East longitude and from $22^{\circ}47'31''$ seconds North to $22^{\circ}48'39''$ North latitude (Fig.1). It is included in Kolkata Metropolitan Area. The study area is actually a water meadow beside the channel of River Kunti, also known as “Baidyabati Khal” in the study area, which is a tributary of the River Hooghly.

Rationality

The study area is under Baidyabati municipality , which is the only municipality in the western part of river Hooghly directly connected to Katwa, Burdwan (through Bandel) and Tarakeswar (through Sheoraphuli), all three major points of transit from rural hinterland of Kolkata Metropolitan Area. Inspite of being a part of a municipal area , the study area itself is surrounded by agricultural fields. The study area is very much accessible by road from Howrah, Kolkata and Burdwan. It is within 40 kilometres of Howrah and Kolkata and within 90 Kilometres of Burdwan. From Howrah, the study area can be reached by road through the NH-2 and G. T. Road .To reach the study area from Kolkata by road, one has to take first B. T. Road , then crossing the Ganges, G.T. Road and NH-2. The area is also very close to Baidyabati railway station on Howrah-Burdwan mainline. It is within 5 minutes train journey from Sheoraphuli railway station, junction point of Howrah-Tarakeswar branch line and Howrah-Burdwan main line (Fig.2). All these factors along with availability of affordable land and rental houses at cheap price make this area a magnet for migrating rural and urban population as well as a target for land developers. A study of this area brings to front the complex dynamics of an urban society living on both economic margin and urban fringe.

Objectives

The main objectives of the study are:

- To make an in depth survey of life and livelihood structure of the people of this area
- To make a comparative study of the development status of the residents on a time scale

- To enquire the future prospects of the study area

Database and Methodology

This work is mostly based on primary data which was obtained from the field through a structured questionnaire and random sampling technique was used for this purpose. Some secondary data, mostly collected from Census of India, has also been used. Different statistical techniques were used for analyzing the data and suitable cartographic techniques were used to represent them including maps and diagrams. By analyzing and interpreting them conclusions have been drawn.

Background of the study area

The area under study can actually be termed as a derelict water meadow crossed by a flood meadow. A water meadow is defined as a “grassland subject to controlled irrigation using sluice gates to control the water” (<http://www.farm-direct.co.uk/farming/history/watermeadow/index.htm>, retrieved 30 December, 2014) where as a flood meadow is defined as “a lowland covered in shallow water due to seasonal inundation” (<http://www.farm-direct.co.uk/farming/history/watermeadow/index.htm> retrieved 30 December, 2014). “Former water meadows are found along many river valleys, where the sluice gates, channels and field ridges may still be visible....The drains in a derelict water-meadow are generally clogged and wet, and most of the carrier channels are dry.....The complex mixture of wet and drier ground often gives derelict water-meadows particularly high wetland biodiversity.” (<http://en.wikipedia.org/wiki/Water-meadow>, retrieved 30 December, 2014). The study area has all these characteristics. The seasonal inundation gives the area a unique environmental characteristics. The study area attracts a lot of wildlife, especially wild and migratory birds who are endangered due to rapid proliferation of build up areas. But, this same wet and dry spell of the study area makes it complicated for residential buildings which often need an elevated platform to avoid inundation. A wetland habitat challenged by a flow of human dwellers in search of cheap land, a fringe community trying to survive without many urban facilities, a group of people living in the socio-economic margin, an area on the brink of change as the big real estate boom knocks on its door (or steps on its cheap land to be precise), there are a lot of ways to look at the study area.

The history of Baidyabati-Sheoraphuli area can be traced back to at least 500 years back. The area flourished under the Sheoraphuli royal family as a ‘gunge’ (a market settlement). The ‘Sheoraphuli Haat’ still a remnant of that. The Baidyabati municipality is actually one of the oldest municipalities of the Kolkata Metropolitan Area, being under municipal governance since 1869. Although, the area under study has not exactly been the most popular choice of habitation from the early times. It has long been a wetland, mostly barren with some plots used for grazing or small scale cultivation. But, the last 20 years saw a huge change in the land-use and demography of this area. The population increased rapidly, while small homesteads popped up here and there and everywhere in what was once a barren land.

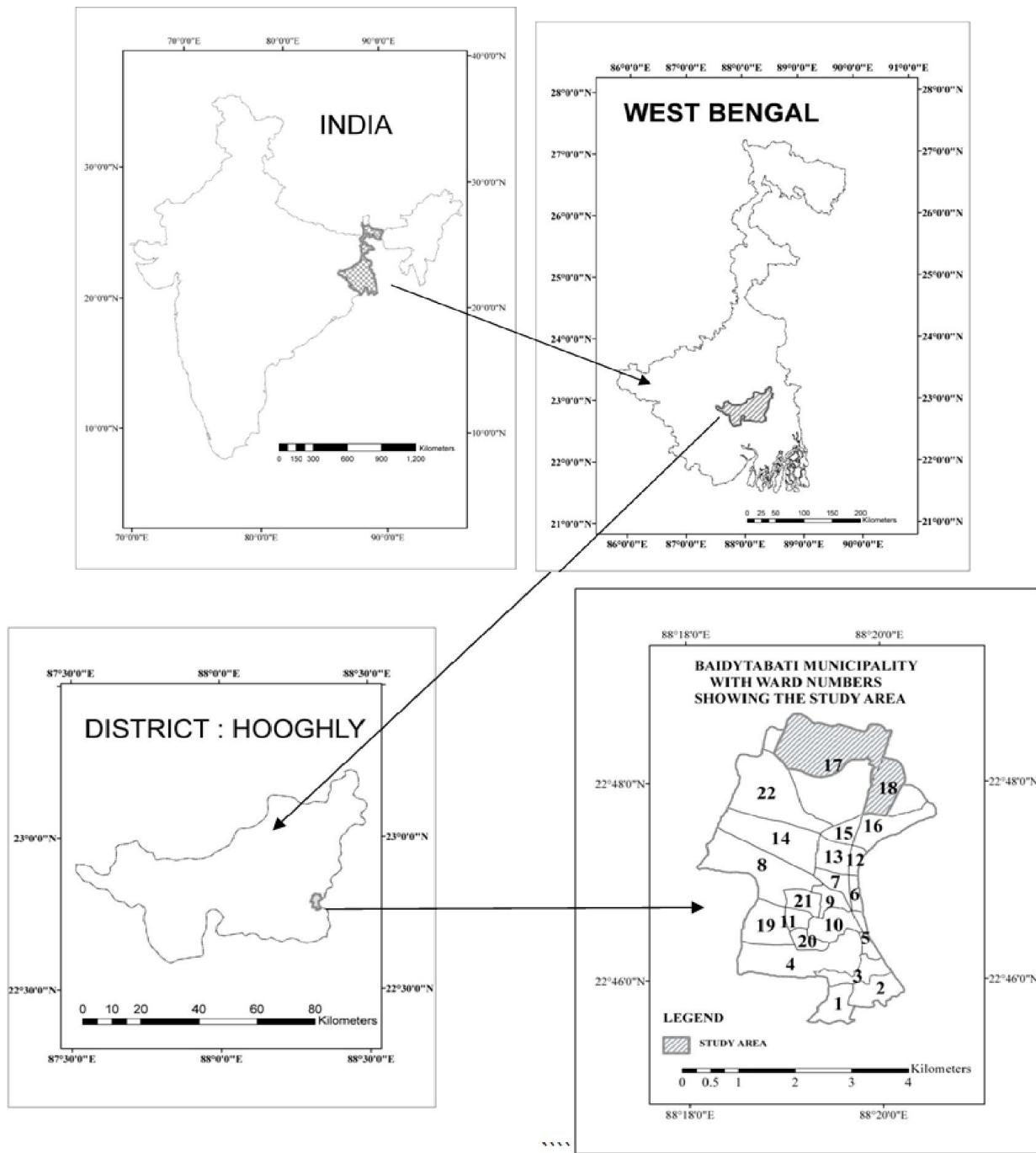


Fig. 1. Location map of the study area

Search for cheap land, search for a place to live near a accessible communication line led people to ignore the poor civic facilities and unhealthy living conditions. The later part of the study tries to understand the 'why's and 'how's.

Life on the edge of the town

As mentioned before, the area under study was very scarcely populated even 20 years ago. A foundry which has been defunct for about last 50 years, a lot of marginal agricultural fields and half submerged lowlands dominate the landscape around the Baidyabati Khal area as can be easily observed

while crossing this area on any Howrah-Burdwan mainline train.

Even 20 years ago, the elites, the Bengali speaking middle class and higher class avoided this area as a choice of residence. In fact, it is still a concept running high that, this area is the abode of thugs and petty thieves and should be avoided at night if possible, more so for the women who have a high risk of being harassed in this area according to the perception of the economically and socially high class living in core residential areas of Baidyabati.

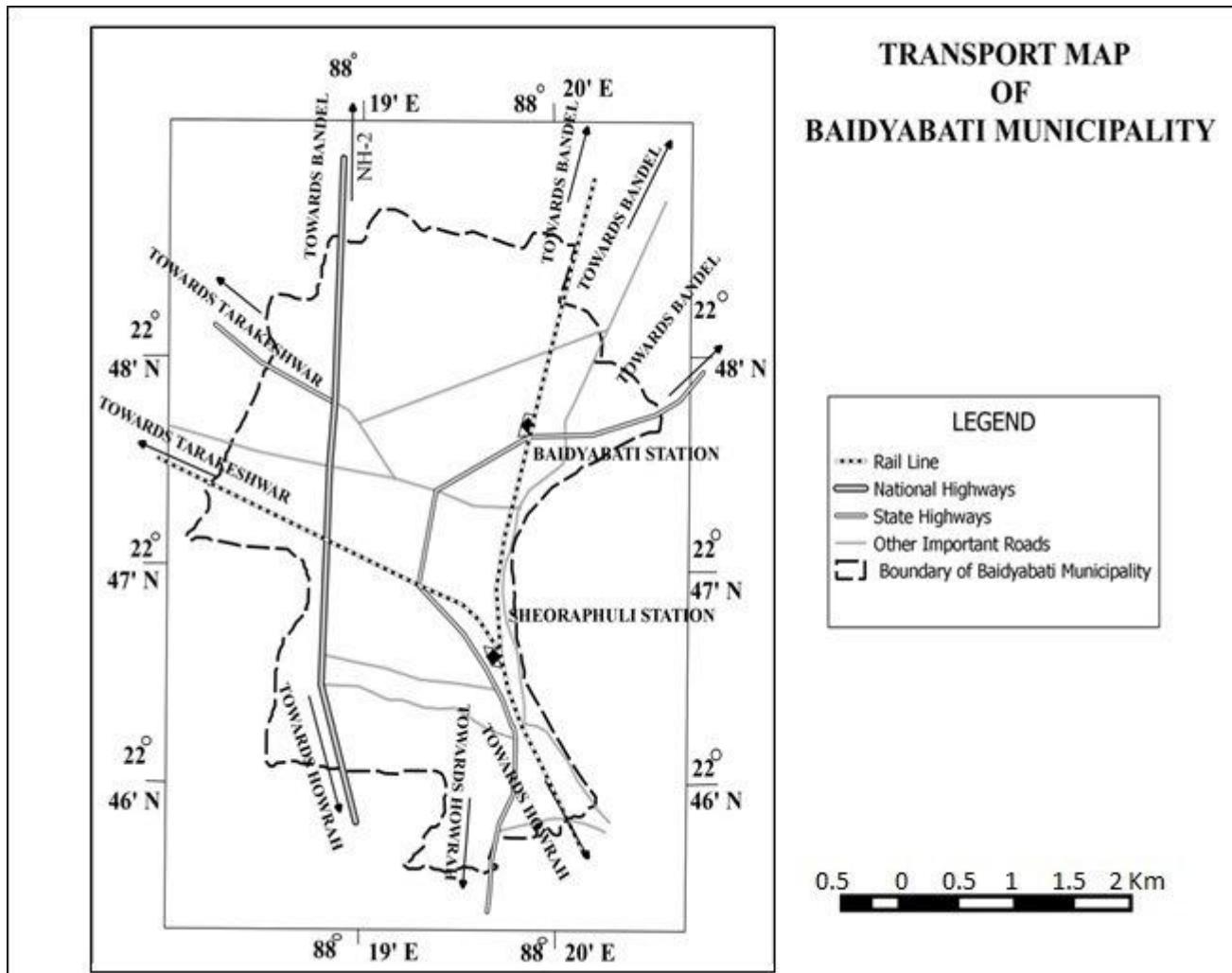
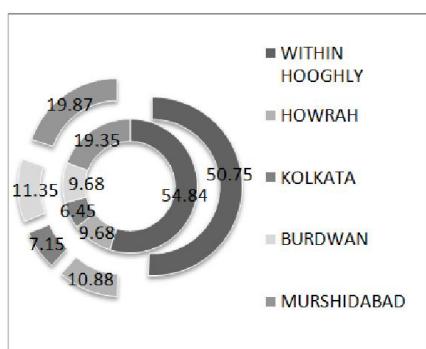


Fig.2.Transport map of the municipality that includes the study area

The demographic dynamics is largely affected by migration pattern. During the 2008 survey, it was found that 74.19 percent of the respondents came from outside the municipal limits of Baidyabati within a period of 25 years, while 45.16 percent came from outside Hooghly district. In last 7 years there has not been a very stark change but the number of people immigrating here is slowly but surely increasing, with 80.32 percent of respondents coming from outside of Baidyabati and 49.25 percent of the respondents coming from outside Hooghly district (Fig.3).



[Source : Primary Survey, 2008 July inside rim) and 2015 January (outside rim)]

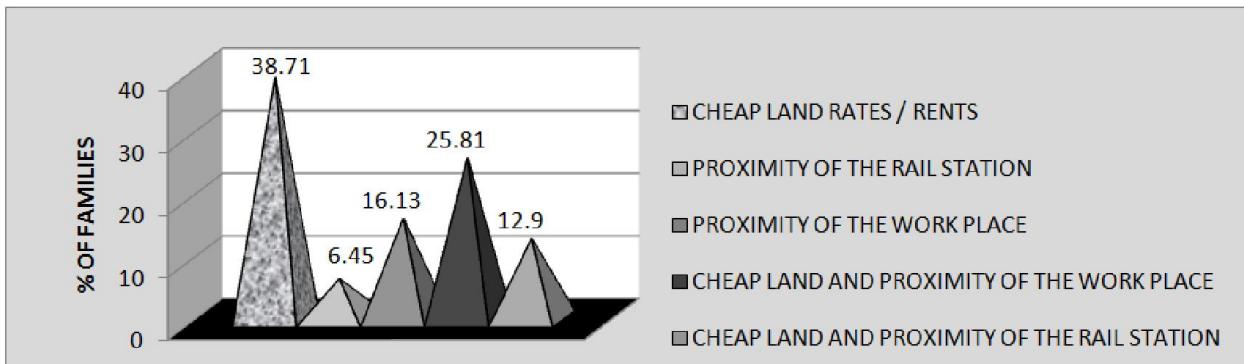
Fig.3. The source of immigration

Most people coming from outside of district Hooghly originated from Burdwan and Murshidabad district (Fig.3). They came from their native districts as a result of loss of land, property and livelihood due to flood, bank erosion or economic trouble (Table 1), in search of a better life. Some of the residents have previously lived in Kolkata and Howrah for some times before coming to the study area and settling down here. The magnetic pull factor of this area remains as cheap land rates and rent, proximity of railway station, proximity of job opportunity, etc. (Fig.4) But, life and living condition in the study area is not at per proper civic requirements. During the 2008 survey it was noted that 54.84 percent houses were made of mud and thatch an only 35.48percent of brick and cement (Fig.5). However, increased demand of land has made this area a gold mine for land speculators. A lot of new structures are coming up here. Thanks to land developers and a proposition of a B.Ed. college nearby that has further increased the land prices, 8.11 percent of the residential structures (including the ones under construction) now have more than 2 stories while 7 years ago none like that could be found (Fig.6). The overall condition of the houses have improved in these 7 years with 56.38 percent houses being made of brick and cement.

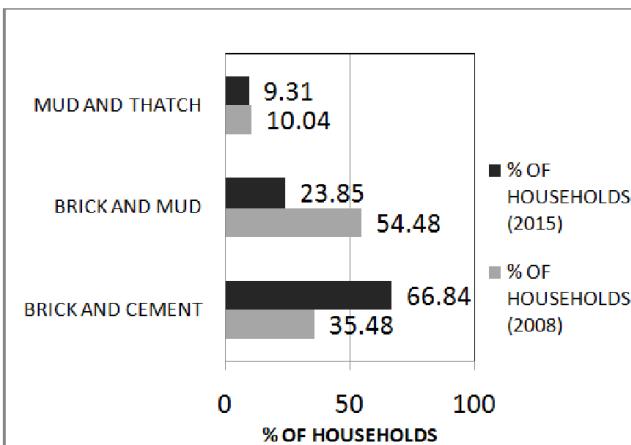
Table 1. Pattern of Immigration

District	Average year of immigration (2008)	Average year of immigration (2015)	Push factors
Within hooghly	22.75	21	Congestion, rising house rent, change of job
Howrah	87	82	Congestion , problems of rearing cattle
Kolkata	5	7.85	Congestion , rising house rent
Burdwan	19	21	Flood , loss of life and property
Mushidabad	35	23	Loss of land due to flood and bank erosion

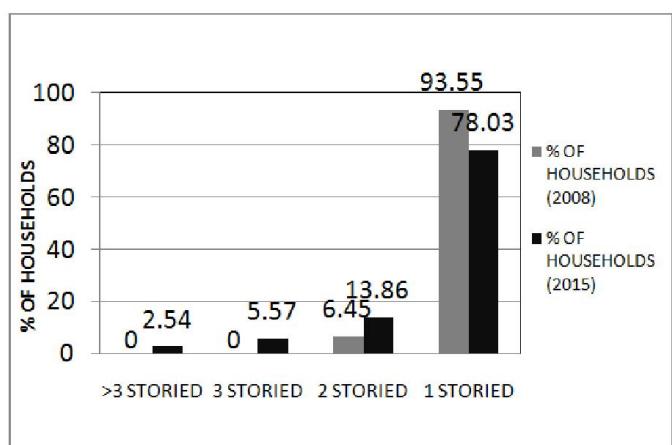
(Source : Primary Survey, 2008 July and 2015 January)



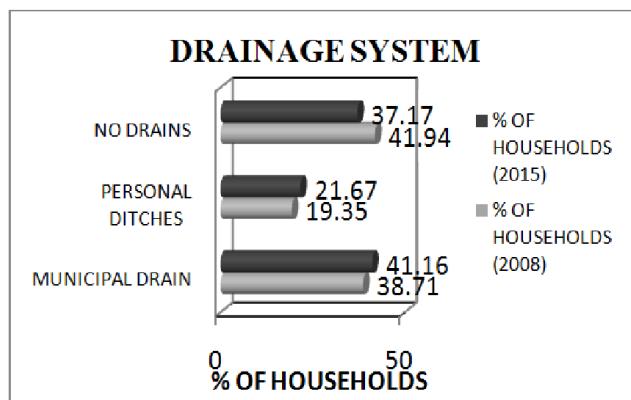
(Source : Primary Survey, 2015 January)

Fig.4. Reasons for residing in the study area

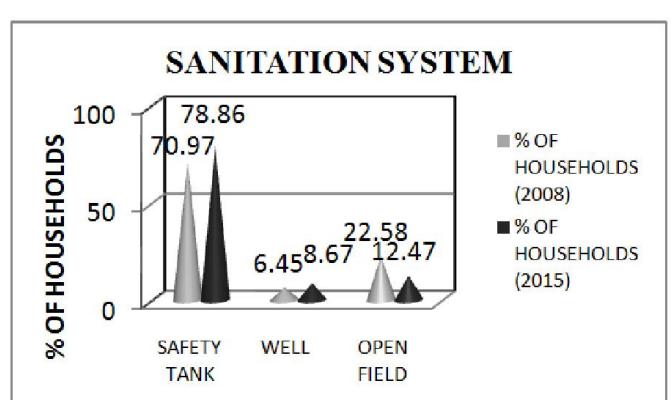
(Source : Primary Survey, 2008 July and 2015 January)



(Source : Primary Survey, 2008 July and 2015 January)

Fig. 5. Structure of the wall of the houses**Fig. 6. No. of stories of the houses**

(Source : Primary Survey, 2008 July and 2015 January)



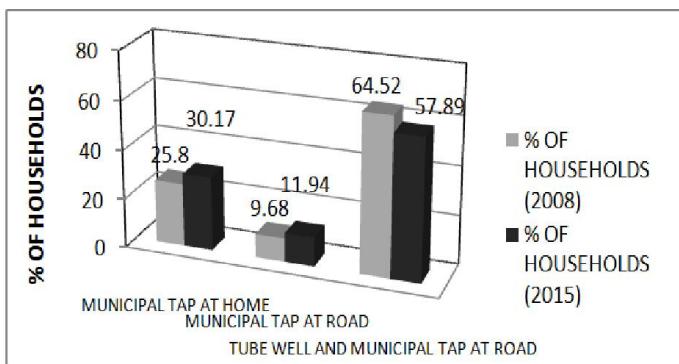
(Source : Primary Survey, 2008 July and 2015 January)

Fig. 7. Drainage system**Fig. 8. Sanitation system**

The private land developers who are utilizing the shady land transfer system and technical weaknesses of red tape-ism within the municipal structure are improving the roads for their own interest to improve the price of the properties in the study area.

But the area being a water meadow, the unplanned landfills and obstructions of previous drainage systems are only exaggerating the problems of water logging and creating further unhealthy condition of living for those who are not economically able enough to live in masonry houses above the flood line. (A large part of the study area is water logged during the monsoon and post monsoon period) The draining of dirty water from houses remain problematic with only 41.16 percent responding households availing municipal drains and 37.17 percent having the privilege of no drains at all (Fig.7).

Although, the figure has improved from 2008 when it was 38.71 percent and 41.94 percent respectively. If that much people residing in parts of a municipal area having no access to proper drainage, it is disturbing. But, it can be mentioned that, at least the number of people availing proper drains have crossed the number of people with no drains. 18.47 percent of the have no access to sanitary privy which is definitely an improvement from 22.58 of 2008 (Fig.8). A lot needs to be done to improve the condition in this sector much like the availability of potable drinking water with 42.11 percent of the respondents having access to tap water including personal and public tap connections at home and at road. (Fig.9)

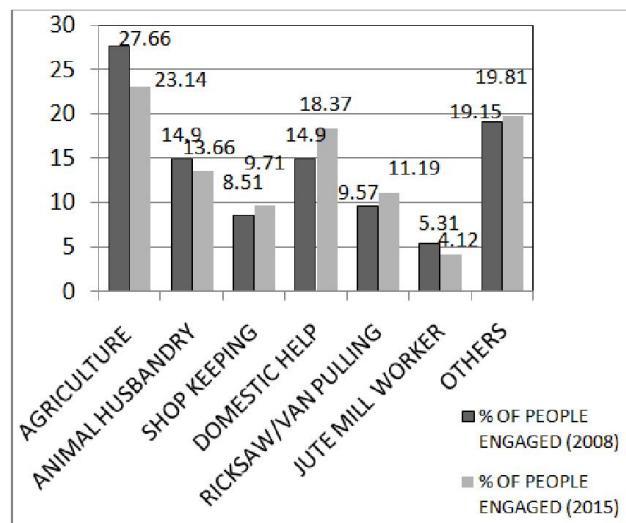


(Source : Primary Survey, 2008 July and 2015 January)

Fig. 9. Source of portable drinking water

The occupational structure is dominated by agricultural labour and animal husbandry. The other major job being domestic help, mostly dominated by the ladies living in the 'jhopris' (thatch huts) and low rented rooms of the area. (Fig.10) But, if we closely observe the change that occurred in the occupation structure in last 7 years, we see that slowly but surely the number of people involved in the primary sector are declining and the sector that is gaining momentum is not secondary (the number of respondents involved in jute mill has declined too), but, tertiary (domestic help, shop keeping, pulling rickshaw, vending small goods, etc.). But, as the diagram shows this shift is mostly towards the informal sector which is not a very healthy sign for the economic condition of the area. The average monthly income of most of the respondents was between Rs. 1500 to 3000 with 32.26 percent of the responding families belonging to this group and the

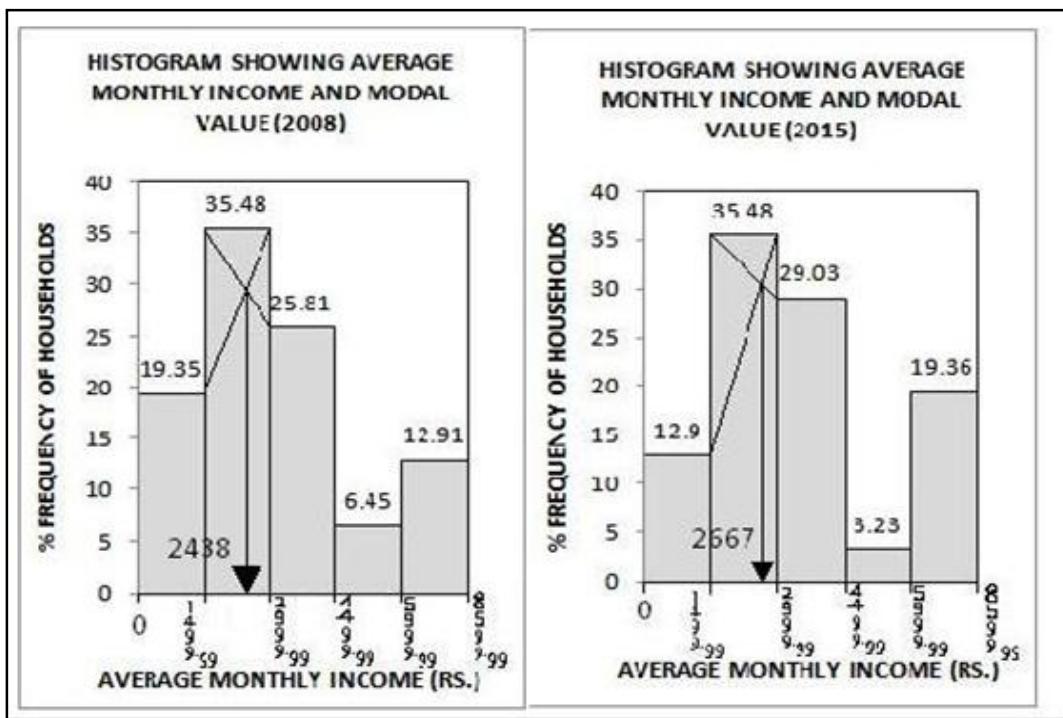
modal value being Rs.2667 which is an improvement from the 2008 modal value of Rs. 2438 (Fig.10). With land development, more people belonging to higher economic standards and income are becoming interested to move in this area, as it is prominent from the increase in the group of average monthly income ranging from Rs. 6000-8500 (Fig.10). Another interesting observation in figure number 10 is the decline in number of people in the average income group of less than Rs.1500. The occupation structure dominated by primary activity and informal tertiary activity remains a dominant reason for this situation. As the land price and house rents rise people belonging to this group are finding it tough to find a place in this community. Slowly but surely they are moving out of this area which is evident from the decline in this income group. Very few family actually had enough social mobility to pull themselves up to the higher income groups.



(Source : Primary Survey, 2008 July and 2015 January)

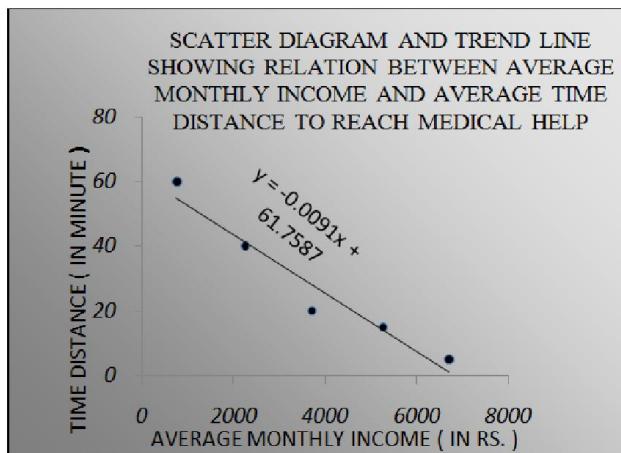
Fig. 10. Occupational structure

Economic structure has an effect of healthcare especially the access to it. The respondents with better economic condition can rapidly avail the private practitioners and clinics nearby in case of emergency, while the less privileged have to travel to the Government hospital in Chandernagore or the municipal clinic. Figure number 12 demonstrates that there is very high negative correlation between average monthly income and time distance to medical facilities, the coefficient of correlation between the two variables being -0.97. It means, time distance to reach medical help increases with decreasing average monthly income. This high negative correlation shows a very hard truth of the presses situation of Indian society where every kind of facilities and amenities are available, if one can afford it, of course. For those who don't have the money to spend, these new facilities and services brought in by the new wave of development, or as R.B. Mandal calls it, 'pseudo-development' (Mandal, 2000), only remains a distant dream. The condition of female hygiene and reproductive health is even worse, with society making their own biological structure their own stigma, more so due to lack of education (only 45.27 percent being literate, with a female literacy rate among respondents being 39.87 percent which is a decrease from 40.32 percent of female respondents being literate in 2008 as shown in figure number 13).



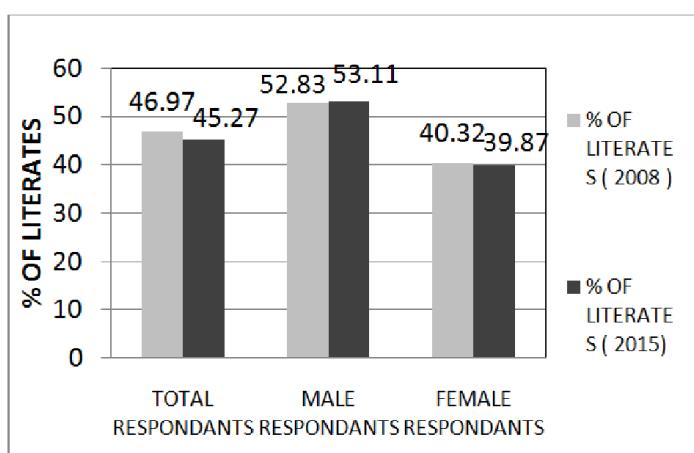
(Source : Primary Survey, 2008 July and 2015 January)

Fig. 11. Comparison of average monthly income and modal value over seven years



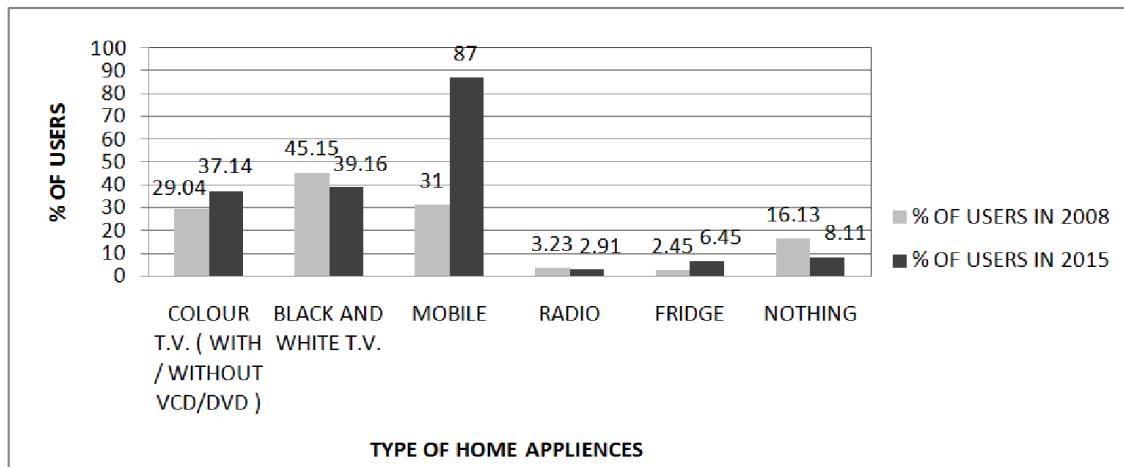
(Source : Primary Survey, 2015 January)

Fig. 12. Correlation of economic structure and access to medical facilities



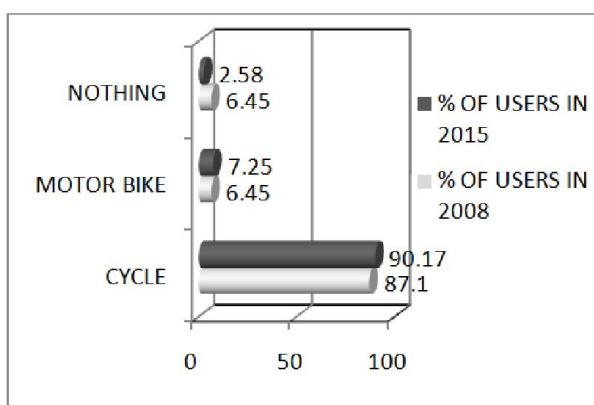
(Source : Primary Survey, 2008 July and 2015 January)

Fig. 13. Literacy rate



(Source : Primary Survey, 2008 July and 2015 January)

Fig. 14. Use of home appliances



(Source : Primary Survey, 2008 July and 2015 January)

Fig. 15. Use of vehicles

The different pattern of migration of male and female population might be a cause). Most of the respondents suffer from chronic diseases like diarrhea, influenza or respiratory problems, which they don't even consider as diseases! The younger marital age for girls and low gynecological hygiene has created risk for mothers and child during birth. And lack of education and knowledge has prevented most of the respondents from taking advantage of the health care benefits provided by the government.

The winds of change due to land development

The water logged during monsoon may be stagnant, but, life and culture are definitely not. The new age technology comes with magnetic attractions. 7.14 percent of the respondents have colour TVs and/or with VCD/DVD (an increase from 8.1 percent of 2008) with an extra 39.16 percent using black and white ones (Fig.14), all of them with cable connections 87 percent of the respondents now use mobile phones, which is a gigantic leap from 31 percent during the 2008 survey (Fig.14)

With people of better economic condition moving in and past residents trying to portray their economic strength, the number of cycles and motor bikes have gone up (Fig.15) and as mentioned before , overall per capita income too. a happy home owner who moved in 4 years ago said, "The land price is very cheap here compared to other parts of Baidyabati. And don't even mention Chandernagore or Serampore. The land is on fire out there. My husband works in a ration shop. We could only afford our own house here. The only problem is the neighbourhood. A lot of lower class people. But, a lot of new constructions are coming up. The area is developing". But, with increasing land rates and home rents in this area some are seeing red. A large part of the residents are illegal occupants who could settle down here as a large part of these lands had ownership issues and in some cases the actual legal owner could not be identified. Now with land developers moving in the area, they are being removed. The ones still living include a lot of landless labourers, small vendors, people without any specific single job.

They are worried. " These buildings are not for us", one respondent said while pointing to an under construction four storied high rises. "Those are for those who can pay. We will be staying in these 'jhopris' (thatch huts). These are the places we can afford." She smiled as she said in her Burdwan accent.

Conclusion

So, they remain. The two Indias trying to exist side by side. They create an urban paradox, where thousands of rural dwellers face less than civic condition and they are attracted to the urban areas in search of a better life, only to find worse living conditions in these urban areas, struggling to survive, trying to mingle in the fast moving and rapidly changing urban life, as old factories close down, as the cities and towns keep digesting agricultural fields around them and they loose more chances of stable occupation . And another India, the emerging middle class, with social mobility, or at least with the hope of it. People with opportunity and skill to improve their lives as the land and world around them become 'developed' and the people who can not afford this majestic development observe from the shanties. The debate over what the word development really means continue as urgent need of acknowledging and identifying these observers of development, as well as the responsibility of their welfare is looms over the government of the country.

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