Changing Faces of Kolkata Periphery: Sonarpur Urban Fringe, India[1]

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Professional planners generally distinguish two major typologies of settlement, city planning or regional planning and town or country planning. The city and town planning deals with the location of economic activities and with the orderly arrangement of space for different uses at settlement levels. When planning any urban expansion, rural areas need to be brought under the urban sphere of influence in a balanced way. This is particularly important in the case of Asian cities, which over the last few decades have experienced an unprecedented population growth. This has been the case of Kolkata due to immigration from the then East Pakistan to India (during 1971), resulting in a tremendous shortage of shelter in the city, and the rapid growth of population in its periphery and the surrounding countryside. With specific reference to the case study of Sonarpur urban fringe, this article reports on the findings of research carried out in the periphery of Kolkata on the changes in land use, population growth and other socio-economic parameters.
Keywords: Urban sprawl, conurbation, agglomeration, land use, urban fringe.

'There is no point in the continuum from large agglomerations
to small clusters or scattered dwellings where urbanity
disappears and rurality begins'
(United Nations 1952: 24)

Introduction

Urbanism is defined as a characteristic way in which inhabitants of towns and cities (urban areas) interact with each other and with the built environment. In other words, urbanism encompasses the character of urban life, its organization and related problems, the physical needs of urban societies and city planning. In recent times, architects, planners and sociologists have investigated the way in which people live in densely populated urban areas and their level of interaction with the country-side. In an attempt to develop an adequate concept of urbanism as a mode of life, Wirth (1938) pointed out that it is necessary to stop identifying urbanism with the physical entity of the city. It is important to move beyond an arbitrary boundary line and consider how technological developments in transportation and communication have enormously extended the urban mode of living beyond the confines of the city itself. What follows is a report on a research project on significant changes at the periphery of Kolkata.

The Area of Study

The active delta of the Ganga, called South 24 Parganas, lies between $21^0 25' 30''$ and $23^0 16' 50''$ north latitudes and $88^0 01' 10''$ and $89^0 06' 15''$ east longitudes. The largest in West Bengal, it lies at the apex of the funnel-shaped Bay of Bengal and serves as the immediate hinterland of Kolkata. Some of the large marshes have been drained and rendered fit for cultivation by the construction of embankments and sluices. One such place is Sonarpur,

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located some 7-8 kilometres from Kolkata Metropolitan Conurbation, hence coming under its direct influence as urban fringe. The region is underlain by deep clayey soil and is marked by a preponderance of fertile loams on the north-western side. The site of my study is the Sonarpur urban fringe, which encompasses eight wards numbering 7 to 14 under the Sonarpur-Rajpur Municipality, called Sonarpur I, Sonarpur II, Sonarpur III, Kamarabad, Gorkhara, Ghasiara, Rajpur and Baikunthapur (Table 1).

WARD No.	WARD NAMES
7	Sonarpur I
8	Kamarabad
9	Gorkhara
10	Ghasiara
11	Sonarpur III
12	Sonarpur II
13	Rajpur
14	Baikunthapur

Table 1. Ward Profile of Sonarpur Urban Area.

This area is often referred to as Sonarpur Urban Agglomeration, given its population concentration and clustering nature. The objective of this report is to illustrate the social and economic setup of the region and its changing land use, which may give geographers and urban planners an idea of how it serves as alternative area of residence for the Kolkata city dwellers and beyond. Since 1947, when India gained independence, there has been a disproportionate and much haphazard increase of population into and near Kolkata. Consequent to the influx of refugees from East Pakistan (now Bangladesh) and various other concurring socio-economic dynamics, the demographic characteristics of the southern periphery of Kolkata have been subjected to a noticeable change. Because of its location within the Kolkata Metropolitan Area and its nearness to the city core, people from the adjoining villages and localities had thronged into the Sonarpur urban agglomeration. Newcomers included high- and middle-income groups, the poor and the marginalized. Owing to the rapid pace of urbanisation, the fringe of Kolkata became extremely populated, too. Comparing the land use profiles of Sonarpur brings out a changing pattern; while in the past a wider area was used for agriculture, now the land use is typically urban.

Methodology Adopted and Problems Faced

The research was mostly based on primary data from questionnaires and visits to educational institutions (schools and colleges). I also used secondary data from the decadal and annual statistics provided by the Rajpur-Sonarpur Municipality and Electric Supply Houses and other offices. Initial difficulties in making people understand the purpose of this study were overcome as we met regularly and discussed the aims.

Historical Outline

Once a big water-logged area within the Police Station of Baruipur and Sonarpur, the area of study had been reclaimed since 1961 by draining out water with the help of the pumping station at Uttarbhag under the Sonarpur-Arapanch Drainage Project. During the subsequent 5-Year Plan periods, much emphasis was put on building the transport and communication systems via road to Sonarpur from Kolkata with the aim of decentralising Kolkata's population towards its southern fringes. As highlighted by the district Gazetteer of South 24 Parganas (Table 2), the evolution of Sonarpur could be traced back to 1800, when the region flourished and served as a main focal point for market activities.

NAME	DATE OF ESTABLISHMENT	ITEMS SOLD	AVERAGE CUSTOMERS
Rajpur Bazar	1853	Vegetables, Fruit	1500
Natunhat	1871	Green Coconut, Potato	1300
Tetulberia Bazar	1947	Rice, Vegetables, Fish	500
Gobindapurhat	1922	Vegetable, Fruit	1000
Sonarpur Bazar	1800	Fruit, Rice, Vegetables	750
Sonarpur Market	1800	Fruit, Medicines	500
Pratap Nagar Bazar	1752	Vegetables, Fish	700

Table 2. An Historical Market Profile of the Sonarpur Area.

Sonarpur: Urban Profile

The word Metropolis means dominant or large city in a country, state, or region (Dikshit 1997). At the beginning of the twentieth century, Kolkata was a million plus city, which demanded an integrated city planning approach to define the basis for a space planning that would drive the development by stages not only of the city space but also of its rural

surroundings. While a mere less than 8,000 people resided in the study area in 1901, the local population reached over 30,000 by the end of 2011 (Figure 1). The noticeable increase in its inhabitants over the past few decades has underlined the fact that it remains an integral part of the Kolkata Conurbation, which extends over a vast tract, with the city of Kolkata as its pivot on either side of the river Hooghly. As a satellite township, Sonarpur highlights the demand for adequate urban infrastructures. Indeed, this particular *Umland* of the city in every direction and its long history of mass migration demands a balanced management of land occupation.

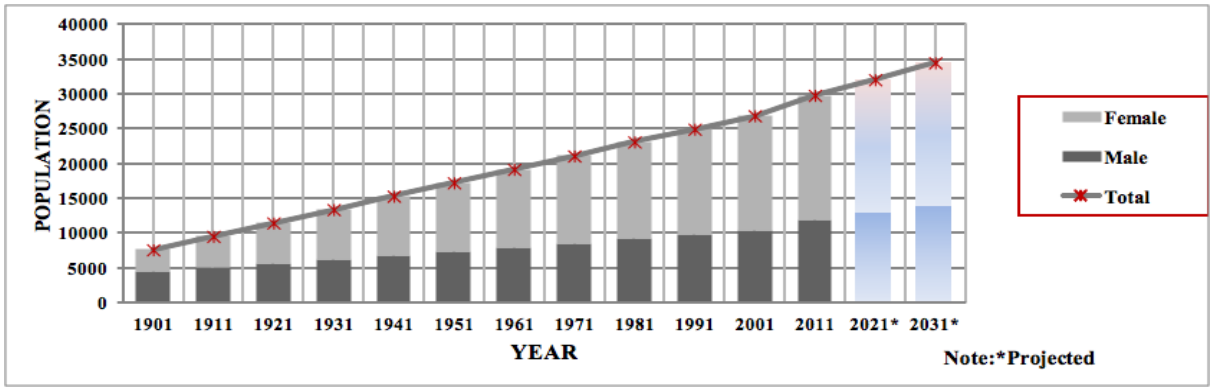


Figure 1. Decadal distribution of actual and estimated residents in the study area (1901-2021).

The occupational pattern in the eight wards of the study area includes a large percentage of people engaged in the service activities: the wards numbered 11, 12, 13 and 14 are service oriented. Wards like 7, 8 and 10 reveal an inclination towards the household industry. A moderate share of population in every ward remains engaged in trading and commercial activities followed by agricultural activities (mostly for domestic use). A small proportion of working people is engaged in transport activities, like rickshaw pulling and auto rickshaw driving (Figure 2).

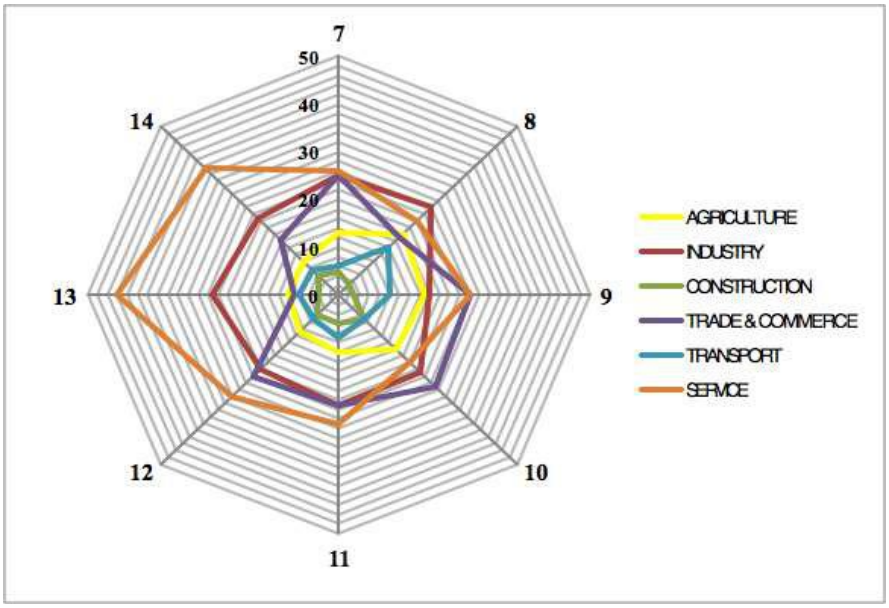


Figure 2. Occupational pattern in the study area in 2011.

Sonarpur: The Changing Land Use

A land-use policy planning needs to be carried out simultaneously at national, regional and local levels with an integrated approach to development in each aspect — forestry, agricultural and non-agricultural use and areas unsuitable for productive use (Jaffrey & Bajpai 2007). The competitive demand for use in each category has to be optimized keeping in view social demand and the limited supply of land. The demand for land is mainly motivated by the need for the production of food, for shelter and for infrastructural uses, rather than by considerations of ecological balance and maintaining a healthy physical environment.

As mentioned earlier, Sonarpur has evolved through the years as a major urban fringe around Kolkata. Typically, however, it had sprawled haphazardly. The Garia to Sonarpur Station road is highly congested, and the urbanization process has been mostly unplanned. Much of the vacant green patches of land have been engulfed and ponds have been drained off for setting up the land for residential and industrial use, like the *Senbo* Industries and the Future Engineering College Campus. A rapid alteration in its land use had thus marked the beginning of yet another urban centre that shares the Kolkata's population but is already overpopulated. Following Singh (1996), it may be said that, since cities are dynamic human artefacts that constantly undergo structural change, redevelopment and re-growth, they involve visible changes in urban relationships with the surrounding territory, most conspicuously that on their outskirts. Gottman (1961) stated that that the problem of changes in land use caused by urban explosion become chronic in the case of the rural-urban fringes of Indian cities. A marked alteration of low lying agriculturally suitable land in Sonarpur into residential areas for housing and settlement accommodations has also meant that several vacant cultivable waste lands have been used to accommodate temporary shelters or squatters, thus hindering productive uses. According to Phillips (1999), two peri-urban zones can be typically identified: 1) a zone of direct impact, which experiences the immediate impact of land demands from urban growth, pollution and the like; 2) a wider market-related Zone of Influence, recognizable in terms of the handling of agricultural and natural resource products. In the case of Sonarpur, perhaps both of the above cases are applicable, for it comes under the direct impact of Kolkata Conurbation and, since it was already a market location, its urbanization got a steady momentum. Figure 3 below depicts land use in the study area that dates back to 1971, when the region was mostly under crop cultivation and the few settlements were discretely spread (Figure 3).

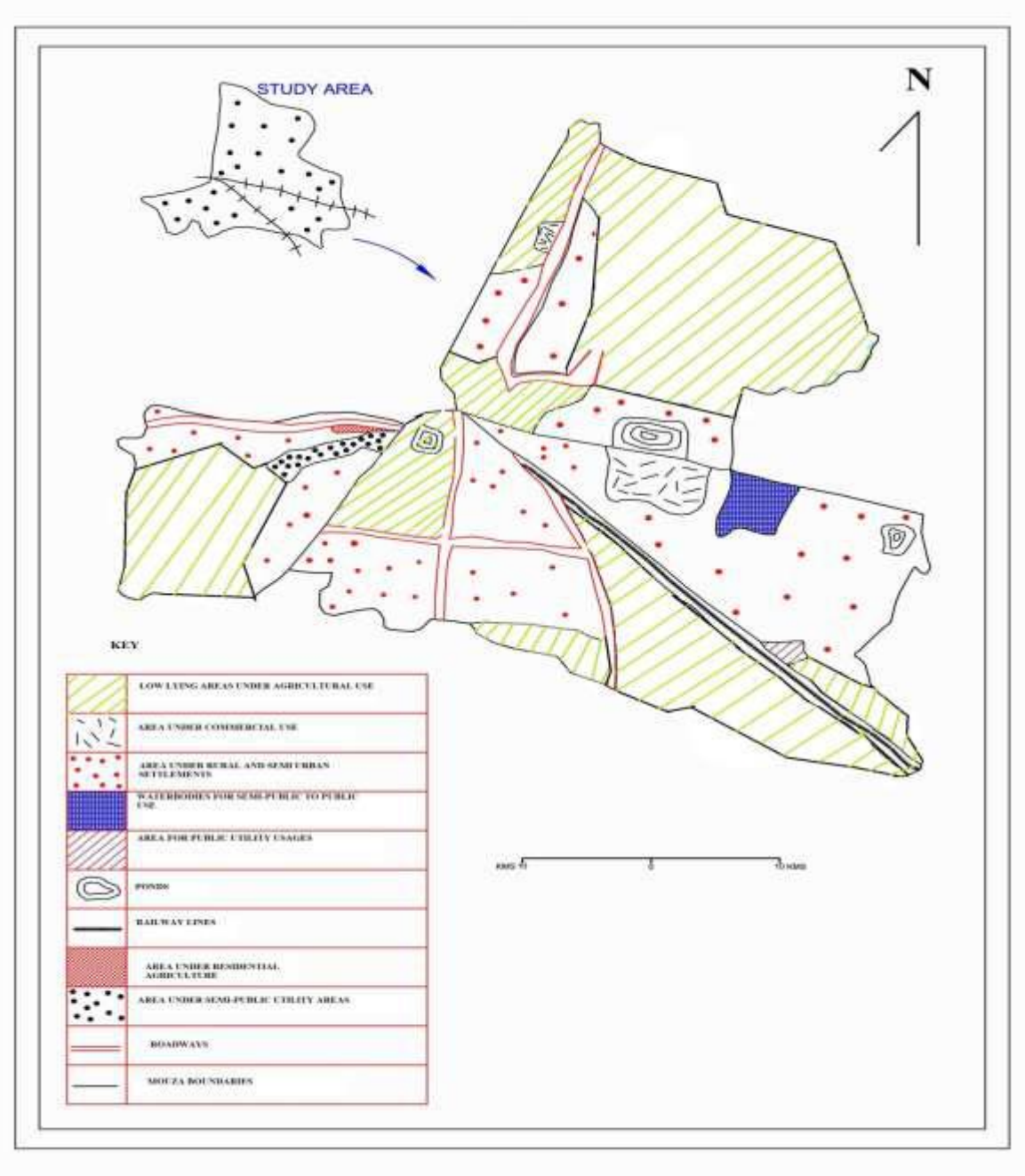
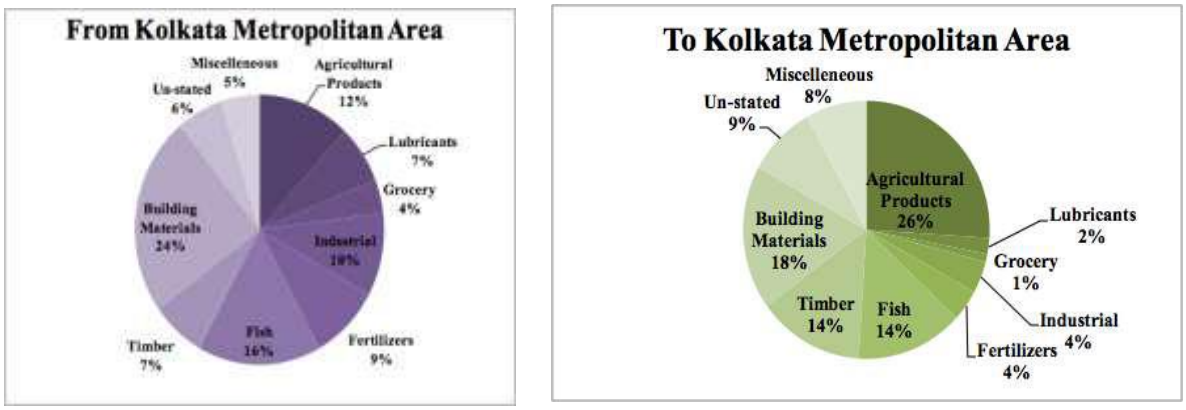


Figure 3. Land use profile of the study area 1971-1991.

Sonarpur: The Interrelationship with the Mother Town

Sonarpur has evolved through the ages, starting as a major centre of trading. Being a market area, it flourished rapidly in terms of commercial and settlement perspectives. Function-ability as one can define a region's identifying characteristics could be a well-defined determinant in this major peripheral settlement near Kolkata. The area of study, a favoured location of alternative settlement for the middle-income groups of the city, depends on Kolkata for the supply of finished industrial and commercial products and of building materials. While it acts as feeder 'town' to Kolkata for the supply of agricultural products, the

daily inflow of domestic, industrial and commercial products outweighs the outflow (Figures 4a & 4b, and Figure 5).



Figures 4a & 4b. Inflow and outflow of domestic, industrial and commercial products to the study area from Kolkata metropolitan area in 2010-2011.

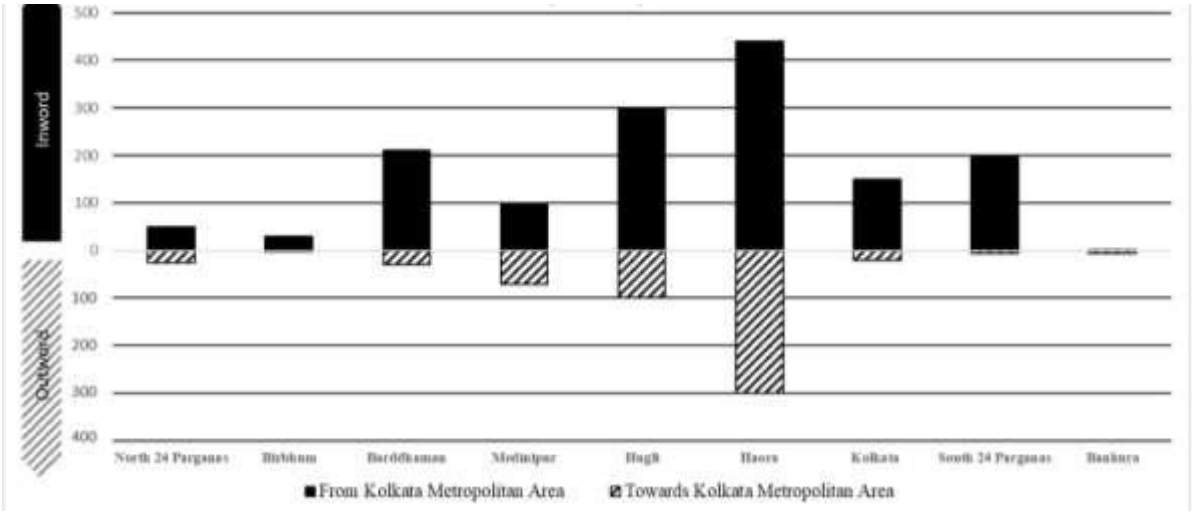
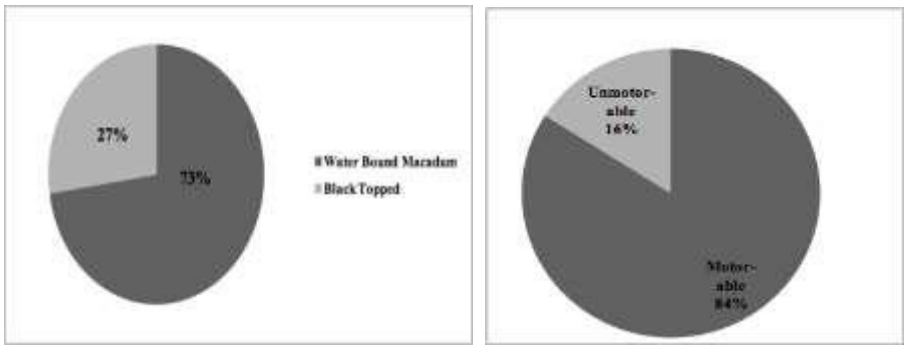


Figure 5. Traffic volume (inward and outward) in Kolkata Metropolitan Area from different districts of West Bengal in 2018-2020.

The surfaced roads in Sonarpur are mostly water-bound macadam type and few are actually covered and black topped (Figure 6a), which during monsoon increases the risk of over flooding of the surfaced roads of the former type. Although nearly 84% of the unsurfaced roads are motorable (Figure 6b), there is a lower percentage of fast-moving vehicles in and near the study area (Figure 6c). This has been tried to be tackled through links with the Eastern Metropolitan by-pass. However, as the road channels linking the Eastern Metropolitan by-pass and Sonarpur are narrow, they enhance traffic congestion.



Figures 6a & 6b. Types of surfaced and unsurfaced roads serving the area of study.

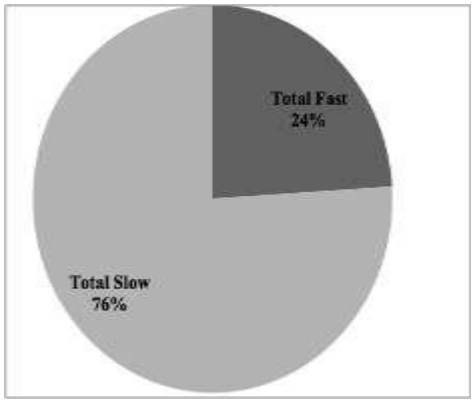


Figure 6c. Distribution of vehicles passing through and from the study area to Kolkata metropolitan area based on speed.

The diagram below (Figure 7) shows the types and volume of traffic flow from Kolkata to the study area and vice versa. The traffic survey report on the Sonarpur–Baruipur road linking the Kolkata Metropolitan Area to the study area highlighted that between 8 am and 8 pm (covering both the peak and slack hours) the number of vehicles moving form Kolkata Metropolitan Area to the study area outweighs that from study area to the city. This shows a greater dependency of the study area on its mother city for the transportation of goods and passengers, which underlines the typical relation between a city and its fringe. In this light, efforts are expected to be made to improve the existing roads to and from the study area by widening carriageway, and to establish separate bus bays and separate provisions for light and heavy vehicles, systematic signalling systems, and so on. This may ensure a speedy and smooth journey between Kolkata and its southern fringe area. Since land use planning and transportation planning are closely related, when identifying the area for residential needs a policy aimed at decongesting the central area and encouraging development in the outskirts through smooth and hassle-free commutation becomes a priority (Bhattacharya 2010). This Rural-Urban Symbiosis Approach advocates a symbiotic relationship between the city and its periphery in terms of their spatial interlinkages, exchange of products and numerous socio-economic services and amenities. There is always a tendency among the human population to cling to the growing urban centres, be it in a metropolitan city, a town or an urban unit where there is easy access to basic necessities. The impact of such polarisation may often cause

considerable disparity between urban and rural areas, which is an unwanted consequence in terms of regional development.

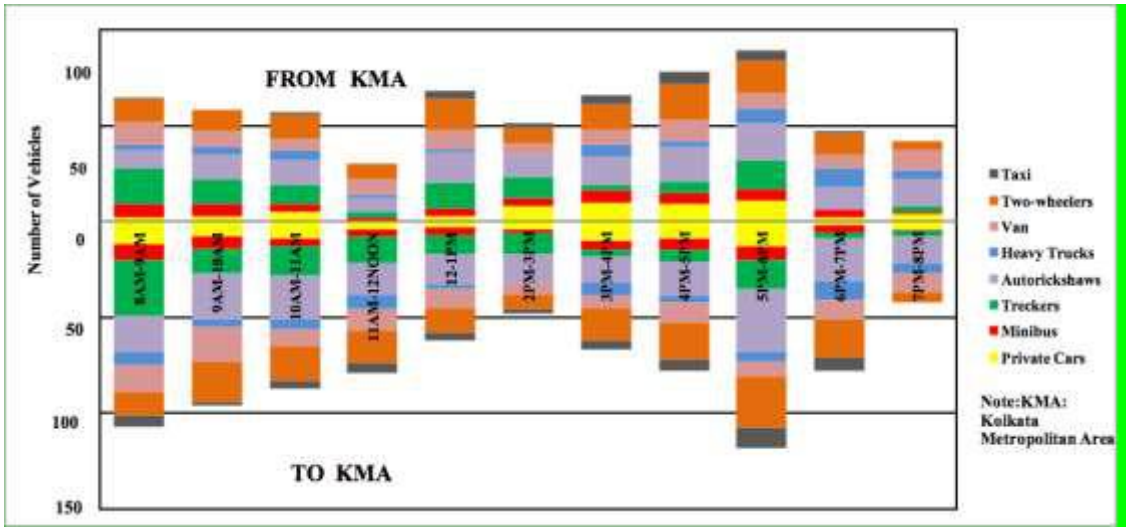


Figure 7. Distribution of classified traffic volumes on an average week day (8am-8pm)-2011.

Recommendations

Generally, the network of cities, towns and villages and their links to surrounding rural areas, becomes the key factor when determining how local economic functions are transmitted across geographical space. It is important to maintain the interdependence through balanced transmission of functions and activities between the city and its surroundings. The overall study of the Sonarpur Urban Fringe reported here suggests that the Kolkata region should engage in improving the transport routes and the availability of surfaced and paved roads, which would improve the speed of vehicles moving to and from the study area from Kolkata City. These improvements would help to address Sonarpur's heavy traffic congestion and achieve the major aim of minimizing the transport cost associated with slow-moving vehicles in terms of higher petroleum consumption. The 'urban functions' in rural-urban fringes need to be taken into account in the regional development strategies. Land use suffers from huge, abrupt and haphazard residential use. This trend needs to be checked by the Municipality through better regulations, and the agricultural fields that have been discretely established, mostly for domestic production, should be protected from future non-agrarian use.

Conclusion

Much needs to be further studied on the specific issues outlined in this Report. The area under study covers a very small part of the urban settlements and their social patterns. The region is rapidly becoming a major agglomeration of the Kolkata Metropolitan Region. If the twentieth century is often remarked as the *Urban Century*, the twenty first century could be called the Century of *City Planning*. According to a United Nations report (UN-DESA 2022), the period between 1950 and 2050 would witness a dramatic shift in the world population from 65% rural to 65% urban. Also, it remarked that the global population has already increased three-

fold than what it was in the middle of twentieth century. Such dramatic growth may be attributed to rising number of global populations surviving till reproductive age and more, gradual increase in human life-span, urbanization and migration from rural areas to cities.

In line with this pattern, Asian Cities experience a symbiotic assimilation of People-Space-Function (Sharma 2007) as they undergo a geographical expansion beyond their periphery that involves their rural counterparts becoming urbanised. In short, I would suggest that, in order to let the City of Kolkata 'breathe', its fringe areas should be designed rationally to sustain both urban and rural land uses as once mentioned by Rajagopalan (2010). Infact, the changing land use pattern and the growing needs of population residing in such fringe areas focus on the immediate need of formulating in-situ planning for the urban areas, rural regions and what lies within (Ravindra 1996).

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