

# Peripheral Urbanism: Urban Expansion over Agricultural Land—Case Study of Chandernagore, West Bengal

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**Abstract**—The major metropolises of India are resultant of colonial manifestation of production, consumption and sustenance. Within them some colonial towns remained as small towns within the close proximities of the major metropolises and functioned as self sufficient units until peripheral development due to tremendous pressure occurred in the metropolises.

Urban Expansion of Metropolitan Areas is an outcome of Planned/Budgetary Economic activities in a large developing country like India. In most of the cases such expansion was not favorable to the relationship between city and its hinterland due to absence of visualization of compact sustainable development. In this scenario the suburbs or the small towns are considered as environmental burden to the metropolis now-a-days. Colonial Towns like Chandernagore which is under Kolkata Metropolitan Region, also falls under metropolitan expansion zones and thus uncontrolled, sporadic and piece meal urban development is taking place, creating haphazard and chaotic environments.

A new urban living has to be encouraged in the suburban settlements and the characteristics of suburbs need to be taken care of.

This requires, a research work, to investigate these urban expansions in selected colonial towns. Accordingly, in this paper, an attempt has been made to establish relevance of this research work, in a structured format.

## 1. INTRODUCTION

Peri-Urban spaces are regions that falls between rural and urban areas. These areas are majorly visible around the cities, towards which the urban sprawl of is happening.

Today researchers from many disciplinary and paradigmatic perspectives use the term peri-urban to describe contradictory processes and environments<sup>1</sup>.

‘Peri-urban’ thus refers to the urban fringe and the geographic edge of cities as a place, it refers to the movement of goods and services between physical spaces and to the transition from rural to urban contexts as a process and finally, as a concept, it refers to an interface between rural and urban activities, institutions and perspectives<sup>2</sup>.

So, the term ‘Peripheral Urbanism’ can be defined as the transitional process of change of environment in the areas situated at the edges of cities. Transformations in these areas occur generally due to the development pressure emerging in the nearby cities. The visible phenomena of these transformations are change in activity and environment of the place.

In majority of the cases, urban expansion of cities triggers transformation of the peripheral areas (see Fig. 1).

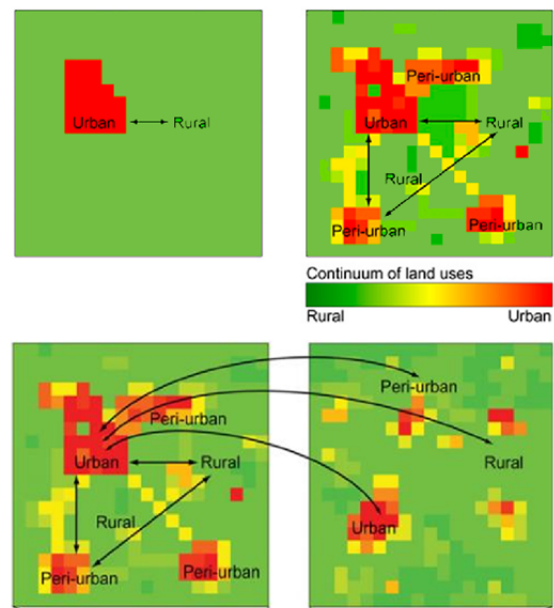


Fig. 1: Peri Urban Spaces

The Urban Expansion can be defined as tendency of inner zone to extend its area by the invasion of the next outer zone. Expansion as we have seen, deals with the physical growth of the city, and with the extension of the technical services that have made city life not only livable, but comfortable, even luxurious<sup>3</sup>.

As discussed in Atlas of Urban Expansion by Lincoln Institute of Land Policy, four key attributes Urban Expansion are as follows –

1. **Urban Land Cover** - Urban land cover, or urban extent, is typically measured by the total built-up area (or impervious surface) of cities, sometimes including the open spaces captured by their built-up areas and the open spaces on the urban fringe affected by urban development

2. **Density** - Density, or more precisely average urban population density, is typically measured as the ratio of the total population of the city and the total built-up area it occupies

3. **Fragmentation** - Fragmentation, or scattered development, is typically measured by the relative amount and the spatial structure of the open spaces that are fragmented by the noncontiguous expansion of cities into the surrounding countryside

4. **Compactness** - Compactness, or the degree to which the city footprint approximates a circle rather than a tentacle-like shape, is typically measured by a set of compactness metrics

While these four attributes are correlated with each other and are not statistically independent, they map and measure different spatial phenomena. Urban Expansion of cities in developing countries is majorly caused due to the growing population concentration in the cities and affects the Urban Land Cover, Fragmentation and Compactness (see Fig. 2).

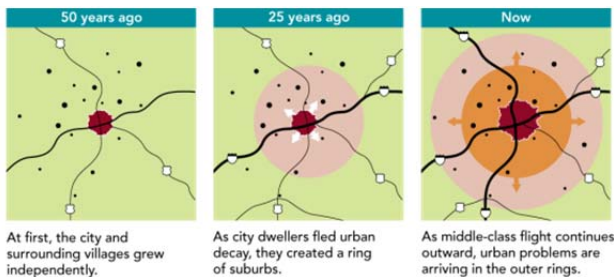


Fig. 2: Urban Expansion of cities

Urban expansion takes places in substantially different forms. In any given city, new urban expansion can take place with the same densities (persons per square kilometer) as those prevailing in existing built-up areas, with increased densities, or with reduced densities. It can take place through the redevelopment of built-up areas at higher densities, through infill of the remaining open spaces in already built-up areas, or through new “Greenfield” development in areas previously in non-urban use. New Greenfield development can either be contiguous with existing built-up areas or can “leapfrog” away from them, leaving swaths of undeveloped land that separate it from existing built-up areas. It can encroach upon wetlands, watersheds, forests, and other sensitive environments that need to be protected, as well as upon farms, fields, and orchards surrounding the city<sup>4</sup>.

The population in developing-country cities is expected to double in the next thirty years: from some 2 billion in 2000 to almost 4 billion in 2030<sup>5</sup>. Thus, Urban Expansion is an inevitable phenomenon for countries like India (see Fig. 3).

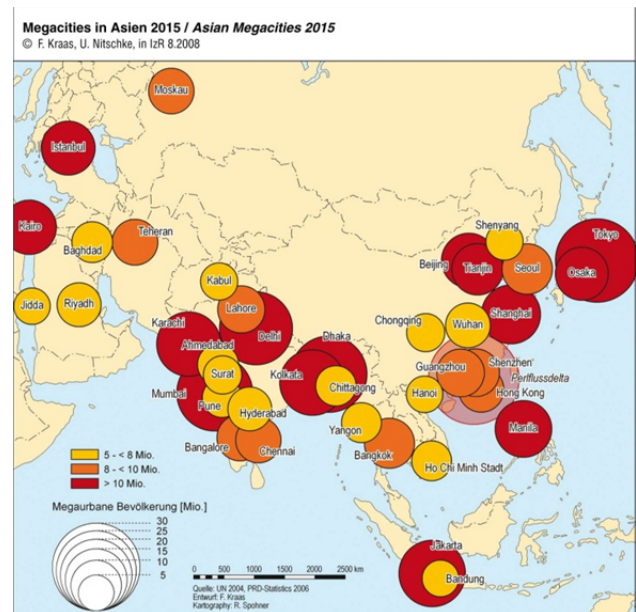


Fig. 3: Indian Megacities Population Growth

India is among the top two farm producers in the world. Agriculture plays an imperative role in the Indian economy.

Over 70% of the rural households depend on agriculture. It contributes about 17% to the total GDP and provides employment to over 60% of the population. The agriculture sector of India has occupied almost 43% of India's geographical area<sup>6</sup>.

In spite of being such an important aspect in the Economy of India, Indian agricultural sector is at crossroads. There has been a structural transformation in the Indian economy during the past few decades. The economy is shifting from agricultural to industrial and other tertiary sectors. Agricultural lands are getting lost to urbanization.

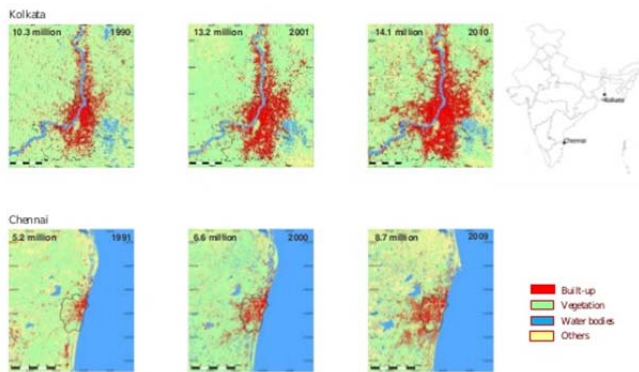
In India, the loss of agricultural land due to urbanization, aided by insufficient planning for food supply lines, will place a severe constraint on the country's future food security for its growing population<sup>7</sup>.

This crisis is happening due to enormous population concentration in Indian cities which is leading to uncontrolled Urban Expansion of Indian Cities.

The major metropolises of India are resultant of colonial manifestation of production, consumption and sustenance. These cities grew, survived and sustained on the basic whims of colonial power and administrative agendas. They were symbols of power, authority and administration.

Urban Expansion of Metropolitan Areas is an outcome of Planned/Budgetary Economic activities in a large developing country like India. In early days of independence Planned & Budgetary expenditures were mostly allocated for urban development. Huge Public expenditure in urban areas resulted concentration of population in cities and towns as a result cities started expanding rapidly.

In most of the cases, such expansion was not favorable to the relationship between city and its hinterland due to absence of visualization of compact sustainable development. The smaller cities and towns and non-metropolitan urban areas, for all practical purposes have grown without any properly laid down policy either at centre or at state and local levels (see Fig. 4).



**Fig. 4: Change in Urban Built up Area & Land Cover: Kolkata and Chennai**

In this scenario, the suburbs or the small towns are considered as environmental burden to the metropolis now-a-days. Colonial Towns like Chandernagore which is under Kolkata Metropolitan Region, also falls under metropolitan expansion zones and thus uncontrolled, sporadic and piece meal urban development is taking place, creating haphazard and chaotic environments.

Similarly, due to urban expansion in metropolises like Kolkata is affecting towns like Chandernagore. These small towns are losing their built environment quality in absence of strategic vision and guidelines.

This requires immediate interventions to arrest any further deterioration of the prevailing situation, as well as, to rectify the damages already incurred, in order to ensure meaningful existence of these settlements.

## 2. DISCUSSION

City and its hinterland has always been co – existed with a hormonal relationship of production and consumption. A sudden shift in economy has resulted in a shift in this paradigm. The affinity of moving the livelihood from primary sector to secondary of tertiary sector is a very common trend now-a-days. This trend is triggering the rural – urban transition in a faster way. The areas which were under

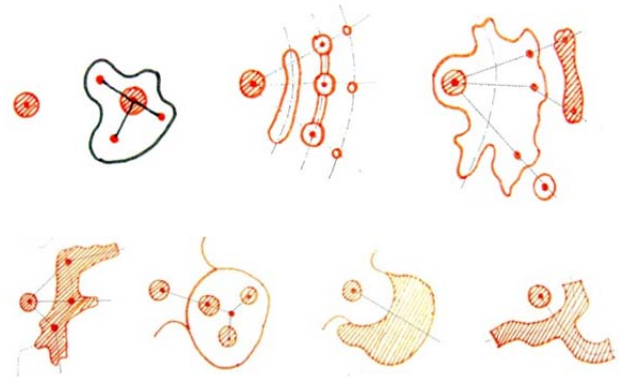
complete rural setup and also were in a close vicinity of a metropolis are becoming the most susceptible areas to be trapped easily by this transformation without synchronized guidelines.

The peri-urban is characterized by high, and often increasing, population density, small landholdings, rich countryside homes, poor slums, diverse sources of income, a lack of regulation, contested land tenure rights, uncoordinated conversion of farmland to housing, pollution, environmental problems, intensified resource exploitation, considerable economic dynamism and a severe lack of service provision<sup>8</sup>.

The same is applicable for Kolkata and its Expansion zone as well. The policies and the regional planning and budgetary frameworks are triggering urban expansion. New areas are getting added up to make a bigger metropolitan region.

### 2.1 City and its Growth

City starts with a bounded region and slowly evolves to form a region in consuming the adjacent hinterland or the zone of its influence and thereby establishes new hinterland and overlaps with the hinterlands of other cities, mainly along the linkage corridors and supportive physical infrastructure (see Fig. 5).



**Fig. 5: Growth of a city with respect to various factors**

The future of a city is engrained in its growth and development pattern - it is through these two major factors a city declares its form. Thus the concept of various city forms like ultra city, edge city, dispersed city, fringe city, corridor city and now-a day a compact city model came into existence. These forms dominate the structure of the city and vice versa. The different city forms are based city and its periphery concept where the periphery has been addressed in various methods to control or regulate city growth (see Fig. 6).



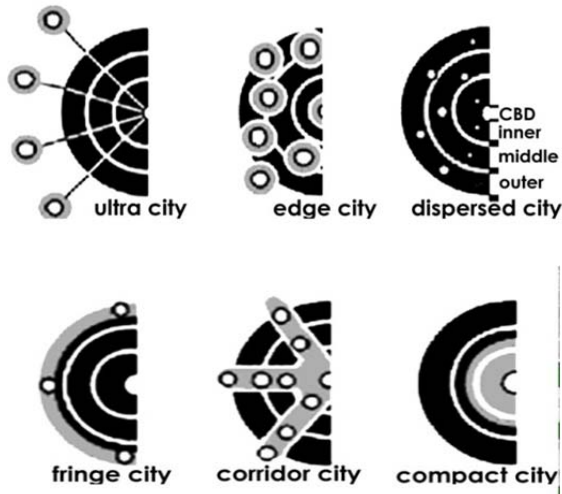


Fig. 6: Various City Forms

Urban Expansion is a product of economic growth in 21st century. Modernization of traditional areas is obvious in all the cities. This process only causes the Growth of Urban areas and its population is causing transformation of agricultural lands and Villages in the city edge. City’s informal needs are satisfied by neighboring rural areas and are a major cause of migration. The growth of Delhi had taken place mainly through spatial expansion, rather than densification.

Systematic acquisition of agricultural land began with the first Master Plan of Delhi. The urbanization process had acquired the vacant agricultural land for urban usage, whereas the residential and other community land was left virtually intact. These villages were designated as urban villages. “An urban village” of Delhi NCR, represents a process in which a rural settlement is caught in a process of rapid urbanization of a metropolis<sup>9</sup>. Thus while such a settlement suddenly loses the source of its livelihood, it has to adjust to new types of economic activity it has not up till now been familiar with (see Fig. 7).

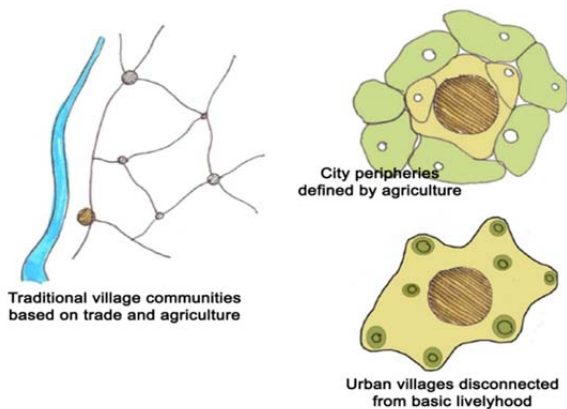


Fig. 7: Village trapped in a City

The similar process is now actively visible in all the major metropolises of India. Kolkata is also forming policies of expansion of its metropolitan region by consuming its agricultural hinterland. Nowadays, Kolkata’s Economy no longer depends upon the primary sector. As an emerging mega city it is still in a transition period between secondary and tertiary sector. Industries are moving from the urban center towards the periphery or hinterland searching for big extensions of free land. Infrastructure connections are decisive for promoting this movement.

In West Bengal, however, agriculture is today still very important. Three quarters of the total cultivable land in West Bengal now belongs to marginal, small and middle farmers.

Regional policy is changing the growth of the city and changing the destiny of its hinterland. New townships, industries are getting planned. Large network of connections are getting envisaged to cater to the surrounding areas and the metropolitan area is growing with a rapid pace (see Fig. 8).



Fig. 8: Vision Plan 2025, Kolkata

The new Perspective Plan 2025 identifies new potential areas for future development which constitutes of many agriculturally flourishing areas as future development zone. This step of the perspective plan changed destinies of many rural or semi - urban settlements, one of them is Chandernagore.

## 2.2 Chandernagore and Kolkata

Chandernagore is articulate in its tradition. When the whole Bengal was under the English rule as a province of the British administrated India, Chandernagore being part of it created an independent tradition under the French rule. Chandernagore has developed and become total of its own with its small area because of its separate identity.

Little Europe (see Fig. 9), as defined by Department of Tourism, Government of West Bengal, is an approximately twenty five kms stretch along the west bank of the River Hooghly, where different colonial powers settled around from the sixteenth century, such as the Portuguese (1535), Dutch (1615), French (1687), Danes(17th-19th centuries) and the English (1690). The area is connected with the east – west railway corridors and the two north – rail corridors, furthermore, the connectivity is enhanced with the Delhi Road – the area is bounded by the Hooghly River in the eastern side – general flat topography slopes to the rivers.

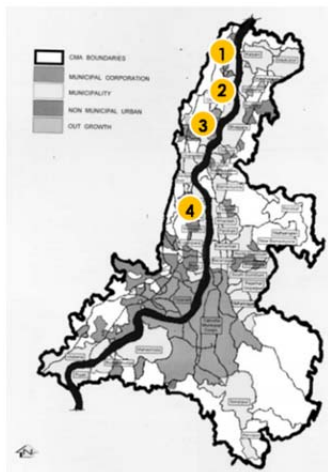


Fig. 9: Little Europe

Chandernagore is the French Colonial Town of Little Europe, West Bengal. It is placed between two river beds, Saraswati and the Hooghly. Apart from its connectivity and proximity to Kolkata, it enjoys a greater regional level connectivity to other growth centers band other regional nodes. It is well connected to Burdwan – an institutional area, connected to Ranaghat – an industrial town and to other lower ranked settlements like – Sreerampore, Bhadreswar, etc which are all industrial towns.

### 2.2.1 Chandernagore as a sub-urban Dormitory Town

The first reference of the name of Chandernagore could be found in a letter written to the then Director, French East India Company, and signed by Martin, Deslandes and Pelle on November 21, 1696. It can be taken for certain from the information about this place occurring in the ancient texts that this city named Chandernagore grew up during the French regime.

Chandernagore has unique attributes in relation to its position, topography, history, and heritage. In Post Independence times, Chandernagore has individual identity in terms of function.

The Structure Plan (see Fig. 10) informs how different functions are being disposed over the place, how these functional zones are interlinked and how these zones functions. Being a suburban dormitory town – the basic predominant use of the land is residential. The G.T. Road presently acts as an activity spine distributing the necessary functions to the adjoining residential zone in terms off trade, commerce and other public – semi public activities.



Fig. 10: Structure Plan, Chandernagore

The river edge mainly provides the public realm of the city and it mainly functions as the institutional zone of the town. The G.T. Road and the Station Roads mainly divides the area into four quadrants of residential zones. At present the rail track acts as an edge of city and other side the river as another edge.

So, the city is well defined in terms of perception – between its two edges and four quadrants of residential zones. The activity – their interdependence and their disposition, their linkages determines the functional structure of the city.

In Post Independence times, Chandernagore has individual identity in terms of function. It has own industrial production, business and commerce in the whole regional area. But after 1970s, the industrial component of the town was no more into existence – because of the shutting down of the production of jute. During this time the whole workforce was shifted to Kolkata and Burdwan for generation of jobs and to find other meanings of sheer survivals. So, thereby this town has slowly termed as the suburban dormitory town.

But recent years, there is a constant economic revolution and revival for the major metropolises and thereby these small towns are also getting affected by this economic resurgence. So, in this context the city is again following the traits of the

mother city for a new economic resurgence and thereby finding a new identity.

### 3. FURTHER RESEARCH DIRECTION

Any postmodern change and transformation can be best identified, anticipated and demonstrated in newer areas of the city as its change and transformation is much susceptible to changes. So, in terms of postmodern manifestation of growth, lifestyle, economy etc the newer areas respond even more spontaneously when they are almost next to the city. Hence for such thesis enquiry the primary concern of site selection was a new added area or a city extension of the old city. Thereby, the activity of the town needs to be dealt with respect to the new conditions which is under the forces of a stronger metropolitan area under the influence of a multilayered historic city with forces of growth and urbanization and would almost deal with the prime issues of the concern of the thesis.

In this context, a further research work needs to be carried out, to explore urban expansion typology of Chandernagore, considering physical or spatial expansions over agricultural land.

The research objectives of such a study would be as follows –

- To study urban expansions over agricultural lands in Peri – Urban Areas of developing countries
- To establish the parametric relationship between Peri – Urban areas and urban expansions and agricultural lands based on this study
- To study similar expansions in Chandernagore, with respect to these parameters
- To formulate strategies and recommendations based on this study, to guide such transformations in desired directions

Keeping in mind the above mentioned research objectives, a methodology could be developed for further literature and on site study, arriving at appropriate strategies and recommendations for Chandernagore, to retain its identity as well as to embrace future development.

### 4. CONCLUSION

Urban expansion is a common phenomenon in recent years throughout the world. In this process, many places suffer degradation and lose their significance and utility within overall urban structure, in spite of having the potential of adaptability according to changing needs.

Thus, this research work would theoretically study urban expansions with respect to agricultural land in Peri-Urban Areas and would visualize their inter – relationships. This in turn would establish a parametric relationship between the same. In due course this would initiate on site surveys of similar transformations, in selected colonial towns and would yield the data to analyze and justify the parametric relationship. This analysis in turn would formulate relevant strategies and recommendations, for regulating such transformations. The outcome of this entire exercise is expected to result in investigating the subject matter of research work in a holistic manner, especially with reference to Chandernagore, as case study.

In future, it would help to undertake necessary corrective interventions, in similar existing situations, so as to guide them in desired directions. It would also help to develop anticipatory plans, with alternative proposals, in similar upcoming situations, so that proper gains could be acquired from them. Subsequently, the ultimate outcome would result in improving overall physical environment of such settlements in particular and overall quality of life, of such towns in general.

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