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Shaping the fringes for the expansion of Cities-A Study on Hoskote in the Greater Bengaluru Urban Area

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Abstract

The creation of new settlements in the vicinity of any Metropolis to accommodate a sizeable population of the core city. While pursuing the research, there is a hiatus between the planners and urban managers on one hand and the people on the other.In some countries, declining satisfaction with the urban environment is held to blame for continuing migration to smaller towns and rural areas (so-called urban exodus). Successful urban planning supported Regional planning can bring benefits to a much larger hinterland or city region and help to reduce both congestion along transport routes and the wastage of energy implied by excessive commuting. But for that matter, it is important to understand the suburbs where such development would take place.Objective of this paper is to identify the actual characteristics of Hoskote where Bengaluru plans to expand.

Key words : *Fringe area, Urban Expansion, Landuse.*

The growth of cities is a natural stage in the evolutionary cycle of civilisation, it is a physical manifestation of the social growth. (Ibn Khaldun, date unknown)

1.0 Introduction:

The space into which the town extends as the process of dispersion operates has created the concept of a rural-urban fringe, an area with distinctive characteristics which is only partly assimilated into the growing urban complex, which is still partly rural and where many of the residents live in the country but are not socially and economically of it (Herington,1984). The foregoing concept identifies three basic notions of the fringe areas ; like -

The fringes are distinct physical areas or region of the city, primarily designated by characteristic land use associations,

The notion of the fringe area is that where urbanisation impinges on rurality and where conflict between ways of life is generated, and there is a direct impact of urban expansion on agricultural lands.

It has been suggested that together these aspects produced a complex pattern of transition which can be seen as having three constituent parts. There is an inner zone where land is in an advanced stage of transformation from rural to urban land uses. The outer fringe is an area where although primarily rural, there are clear urban elements present indicating that city

influences have begun to infiltrate. Beyond lies the urban shadow where there is only a sporadic and scattered representation of the city in some non-farm residences and estates with commuting patterns to the city. Over the first half of the 20th century, growth in Indian cities remained largely confined within municipal boundaries [Brush 1968]. Even as late as the 1970s, Brush (1977:64) noted that in India, as contrasted with the west, much of the population growth and migration to cities has been accommodated by crowding more and more people into existing urban areas rather than by expansion of cities into suburbs and fringe areas. However with the passage of time the cities take every opportunity to expand into its fringes, and this leads to the steady change in the suburban characteristics with urban shades distinctively casted upon the rural 'greys'.

It can be argued that the rural and urban divide tends to get subsumed in the poor and rich divide to a greater extent, on the basic assumption of the Kuznet's curve hypothesis that there is little inequality in income in the poor rural sector relying on agriculture. Hence, inequality in income distribution is due to inequality in income in the urban sector resulting from income inequality between informally and formally employed workers. In China during the phenomenal growth of town and village enterprises in both large and medium scale, inequality in income in the rural sector increased between those relying exclusively on agriculture and others relying on the employment through these enterprises. The disparities within rural and urban living become more imperative and the situation widens the gap between balanced regional development and irregular patterns of growth in rural sectors. Objective of this paper is to highlight such issues in relation to population distribution, households, literacies and working status of the existing population of the north eastern suburbs of Bengaluru, namely Hoskote along with the land uses of the same. This will no doubt put forward the development keys for the people already marginalised with limited land holdings, poor agricultural productivities and least employment opportunities.

2.0 Literature Review

A large amount of literature concerned with the physical delimitation and the defining features of the rural-urban fringe, appeared during the period from the mid-1940s to the beginning 1950s.In land use terms Wissink (1962) called it an area of great differentiation while Golledge (!960) used the term 'a geographical no-man's land'. The city does not grow outwards in well -defined advancing rings of rapidly completed development. It extends haphazardly making rapid advances at one point and hardly moving at all at another. Bryant attempted to summarise the forces operative and their outcomes in the rural -urban fringe. The responses indicated that the dynamic impact of urbanisation upon the fringes and the variety of conditions consequent.These reflect the nature of any fringe and demonstrate not only the push of the youths, middle class populations , but also the adaptation of the farming , the use of fringes for leisure pursuits, as well as the many demanders of extensive land holdings or objectionable uses which find a place at the city margins. When Navi Mumbai was

developed in 1972 it had the sole aim to decongest Mumbai. Similarly the city of Bengaluru has a vision to develop Hoskote taluk, located in the north eastern fringe area as its one of many Satellite Towns. Hoskote has been chosen to decongest Bengaluru with the promise of providing super fast connectivity.

As per 2001 Census, the urban population of the country was 286.11 million, which constituted 27.8% of the total population. The 35 million plus cities contained more than one third (37.85%) of the total urban population. During the decade 1991-2001, the number of million plus cities increased from 23 to 35 and the projections show that urbanization combined with the overall growth of the world's population would add another 2.5 billion people to urban population by 2050. It has been estimated that there would be an increase of additional 78 million to the total urban population by the year 2011.While on one hand growing urban population is exerting more and more pressure on urban services, on the other hand investments in urban infrastructure (water supply, wastewater disposal services, solid waste collection and management, roads, and street lighting) have stagnated at very low levels when compared to the total developmental expenditure. While the centrally sponsored schemes like Jawaharlal Nehru National Urban Renewal Mission envisaged to cater to the infrastructure requirements of many Indian cities, there is an imperative need to plan for development of satellite towns around them. These Satellite Towns which had been planned to act as counter magnets being spatially separated from the Mother City, act as relief for the city primacy. Hence, the Scheme – "Urban Infrastructure Development in Satellite Towns/ counter Magnets (UIDST) was launched in the year 2009 by a Memorandum of Understanding. The scheme is slated to be implemented for all the 35 million- plus cities in the country.

3.0 Area of Study

Hosakote is a taluk in Bengaluru Rural District. Agriculture, apiculture and horticulture are primary occupations of people here, although the industrialization in the recent times in Hosakote and places around has thrown up new opportunities for the people. According to a copper plate grant dated 1494, given to a Veerashiva Matha the place was founded by Thamme Gowda, the chief of Sugatur. The place is also noted for a large tank with an embankment which is two miles long, and when full, forms a sheet of water not less than 12 km in circumference. Thamme Gowda is said to have constructed this tank and by raising an armed force, he annexed places like Anekal, Mulbagal and Punganur (in Andhra Pradesh). Hoskote taluk in Bengaluru Rural District is located about 27 kilometres away and well located at the fringes of the Primate City. The region strategically lies within the intersection of NH-4 and NH-207 and as such is a town with existing population and a great deal of migration inflows. Rapid industrialisation in Hoskote in recent times acts as a major reason for the city planners to give it a status of Satellite Town. Hoskote as stated earlier is said to be another Navi Mumbai in the making in the Bengaluru Urban Area.

4.0 Observations and Findings

As far as the growth of population is concerned, fringes of Bengaluru may be divided into two segments: Bengaluru Urban District which surrounds immediately the Bengaluru city and the Bengaluru Rural District which encircles the urban peripheries of the city holding more of village characteristics. Together, these fringes comprise population which are on the steady rise since 1971 owing to the migrants' preferences of staying in the neighbourhood of Bengaluru City for better living in all respects.The population for 2021 of the fringes has been projected based on the population statistics of the previous decades. (Figure 1). Hoskote is located in the rural fringes of Bengaluru City and promises to cater to the Primate City's relief as far as de-polarisation of population, employment, housing activities are concerned.

Of the twenty six villages in Hoskote Taluk, where the Satellite Township has been proposed to be built,very few villages are adequately populated; indeed they are under populated in most districts as far as the distribution of households are concerned. There are only seven villages which record positive distribution of households when measured from mean and standardised there after. The remaining villages (counted nineteen in total) are negatively positioned as far as Z-score distribution of population is concerned; this indicates that these villages exhibit very

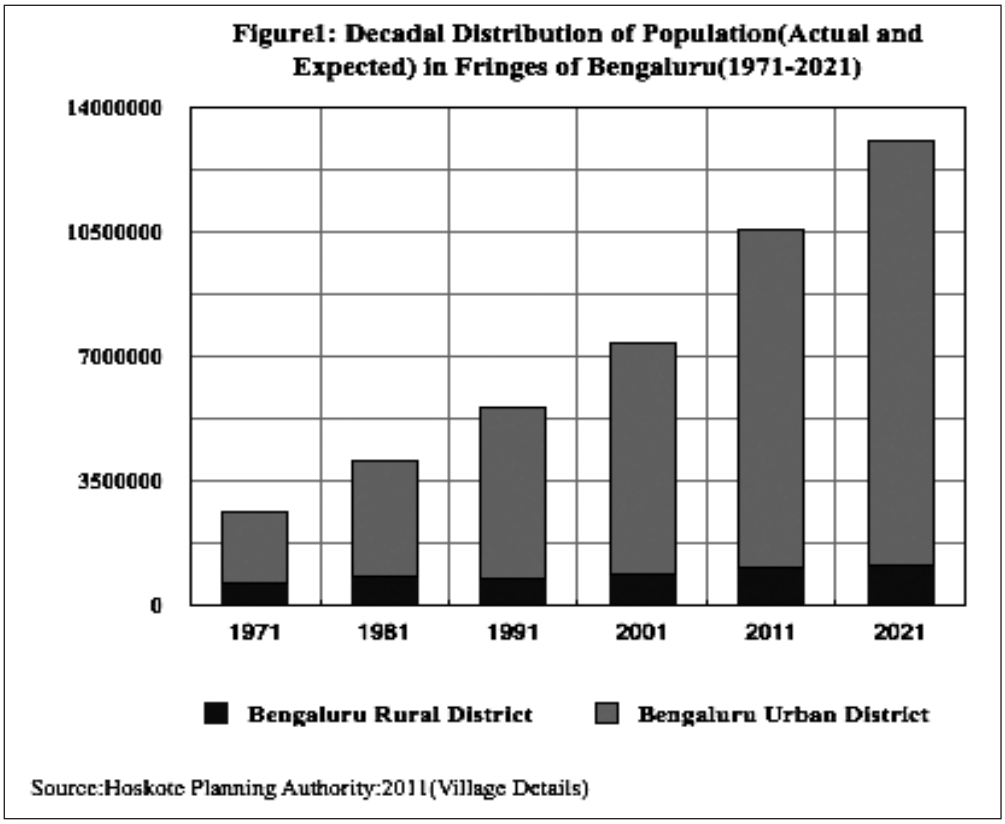
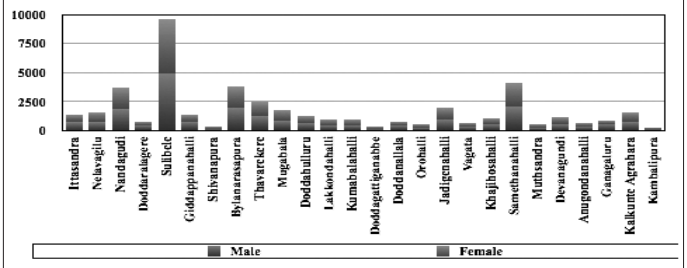
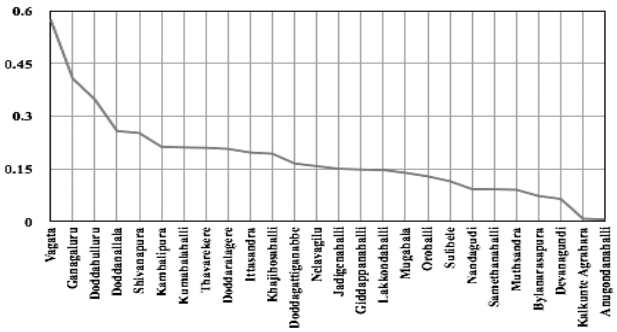


Figure 2 Distribution of Male and Female Population in Hoskote(2011)in Bengaluru Rural District



Source:Census of India:Provisional Population Totals Paper 1&2 of 2011:Karnataka

Figure 3 Distribution of Villages in the Study Area based on levels of Disparity(2011)



Disparity Index=$\text{Log}(X_1/X_2)+\text{Log}(200-X_2/200-X_1)$;
where X_1=Percentage of Male Literates in Study Area ,X_2=Percentage of Female Literates in Study Area,and $X_1>X_2$

Source:Census of India:Provisional Population Totals Paper 1&2 of 2011:Karnataka

Table 1 : Distribution of Households in the Study Area based on Z-Score Analysis(2011)

Z Scores	Characteristics	Villages
(-0.5)-(-1.00)	Very Low	Kambalipura,Doddagattiganabbe,Shivanapura,Anugondanahalli,Orohalli,Devanagundi,Muthsandra,Vagata
0-(-0.5)	Low	Doddanallala,Ganagaluru,Doddaralagere,Lakkondahalli,Khajihosahalli,Kumabalahalli,Doddahulluru,Giddappanahalli,Kalkunte Agrahara,Ittasandra,Nelavagilu
0-0.5	High	Mugabala,Jadigenahalli,Thavarekere
0.5-1.00	Moderately High	Bylanarasapura
>1.00	Very High	Nandagudi,Samethanahalli,Sulibele

Z Scores=(X-Mean of X)/ Standard Deviation from X; where X is the Number of Households of the Study Area.

Source:Hoskote Planning Authority:2011(Village Details)

few number of households which become an essential point to be taken into account for further planning. A two way approach is needed here. The negatively scored villages may be planned for establishment of new settlements in the form of neo-urban residences and the villages with high scores like Sulibele may be planned under relocating activities of the existing villagers in the scantily populated areas where they could be provided with accommodations and employment opportunities. (Table 1) As far as the population distribution is concerned the region displays high male and female population in the village Sulibele followed by Samethanahalli, Bylanarasapura and Nandagudi. The remaining villages exhibit low to very low population distribution . Such scantily populated villages may be planned for as mentioned relier for infrastructural activities like new offices may be built, schools and training institutions may be constructed to facilitate Bengaluru as a whole. (Figure 2)

Indeed as far as regional analysis is concerned it is always advisable to develop a clear idea about the parameters; the villages in Hoskote record poor number of workers(where male workers outweighs the female workers) which highlights the distress of the region in terms of employment and wellbeing. Samethanahalli, Mugabala,Kumbalahalli etc. (numbering seven) villages are low in LQ values marking lower than average working groups of the villages. There are nine villages which are slightly moderate

Table 2:Distribution of Villages in the Study Area based on Existing Workers(2011)by Location Quotient Analysis

Location Quotient	Types	Villages
0-1	Low	Samethanahalli,Mugabala,Doddanallala,Vagata,Sulibele,Kumabalahalli,Lakkondahalli
1-2	Moderate	Kambalipura,Orohalli,Jadigenahalli,Khajihosahalli,Doddahulluru,Kalkunte Agrahara,Anugondanahalli,Bylanarasapura, Ganagaluru
2-3	Moderately High	Nelavagilu,Devanagundi,Giddappanahalli, Nandagudi,Muthsandra,Doddaralagere,Ittasandra
3-4	High	Shivanapura

LQ=Percentage distribution of Workers in each village/Percentage of Total Workers to Total Population of the Study Area(Hoskote)

Source:Census of India:Provisional Population Totals Paper 1&2 of 2011:Karnataka

as far as distribution of workers are concerned like Kmabalipura, Orohalli, Jadigenahalli etc. The remaining villages are moderately high in terms of distribution of working groups are concerned. However mostly the workers are marginal labourers in agricultural sectors, and are small shop keepers and engaged casually in transport sectors as auto rickshaw drivers etc. (Table2)

In fact whichever way the planning is done what is need is balanced development with least gentrification. A lop-sided development effort would be in vain if there remains no consideration of the people already residing here and those people who plan to relocate away from the very congestions of Bengaluru City. Besides, as far as the level of disparities are concerned between male and female literates, the Hoskote Taluk is a mixed bag of hope and despair. The Villages like Vagata, Ganagaluru, Doddahulluru are highly ranked in the level of disparities ; that indicates that in these villages the gap between male and female literacy is huge and that should be bridged with proper educational services that can be initiated through government funds and through private agencies who could provide employment facilities to the guardians of the children in order to bring up the development manifold. Every village of Hoskote Taluk exhibits disparities in male and female literacy where the former dominates the latter, but situation is critical for high ranked villages as far as the levels of disparities are concerned in the spheres of education. (Figure 3).

4.1 Land Use

Socio-economic development is inextricably linked with the existing as well as past land use. In fact, land use pattern and access to land determine the socio-economic development of vast stretches of rural and intensity of agricultural practices. For socio-economic development an integrated approach is recommended for sectorial planning and management of land and its resources. There are driving forces of historical as well as present land use changes, which transformed many societies and socio-economic, biophysical and land management themes. These forces include use of labour in the past history ,national and international policies that is access to credit, taxes, subsidies, conventions and agreements, market forces, national and global demographic and social changes, environment, climate, pests and diseases, technological changes in transportation systems and mechanization, parcellisation, subdivision, land values, agricultural diversifications, urbanisation, industrialisation, changing cropping patterns, use of, wetlands, waste generation, disposal and landfills.

The Figure 4 (See page No. 38) indicates the overall existing patterns of land use in Hoskote which remains useful references for planning at spatial levels. The region is connected well through satellite town ring roads, national highways and inter-mediate roadways which gives it an added advantage as far as development of new areas are concerned. However this rural fringe of Bengaluru at its north east locations is typically exhibiting agricultural land uses which would be at steady loss whenever the efforts of city

planning would commence. Now that is the dilemma the urban planners face while thinking of development in such areas. Indeed the region is also discretely dotted by forested areas and water bodies with local canal ways passing out. Though the region centrally contains areas for public utilities and commercial places which may be steadily and systematically developed to provide the new urban pockets access to amenities which in turn may provide employment to the residents of Hoskote.

5.0 Growth Potentialities

The region under study has several areas of potentialities that may be taken into account while planning for the same. The Bengaluru Metropolitan Region (consisting of Bengaluru Urban, Bengaluru Rural and Ramanagaram districts) is considered to be one of the largest metropolitan regions in India with an area of 8022 square kilometres. Hoskote located in Bengaluru rural district at a distance of 27 kilometres from Bengaluru city, under the jurisdiction of Bengaluru Metropolitan region (BMR) is categorised as Area planning Zone 4 in the City Planning Process.This means Structure plan recognises Hoskote as area suitable for future urbanisation. In the present context, Hoskote is one of the Local Planning Areas within Karnataka, for which Interim Master Plan has been proposed, for Satellite Town development. This comes with a vision to create infrastructure facilitating Hoskote to emerge as an economically productive, efficient ,equitable and responsive city through integrated development with a focus on urban sector reforms, economic growth and strengthening municipal governance. Hoskote is facilitated by the following plans and proposals like,

A comprehensive plan for developing Andhra Pradesh-Chennai-Bengaluru-Mumbai Business Corridor, also called Peninsular Region Industrial Development Corridor, has been drawn up which aims at developing townships along the corridor. The Hoskote Town has been expected to be benefitted from this development as this region would be entirely developed for balanced urban development.

Hoskote is located in close proximity to Bengaluru City which gives it an opportunity to be directly under the influence zone of the Software Capital India.

Two National Highways happen to be located near the region: of which NH- 4 connects Bengaluru and Chennai and NH-207 that stretches through the Hoskote region itself in the western region of Bengaluru.

The region is also connected to other Satellite Towns of Bengaluru, namely Devanahalli, Doddaballapura, Dabaspet, Ramanagaram, Kanakapura, Anekal and Sarjapura by the Satellite Town Ring Road.

Besides, Intermediate Ring Road is proposed within the Satellite Town Ring Road for connecting the local pockets / towns around Bengaluru.

The main objective of Government of India sponsored scheme of Urban Infrastructure Development in Satellite towns/Counter Magnets of Millennium Plus cities are:

To develop Urban infrastructure facilities (transport, water supply, sewerage, drainage, solid waste management) at Satellite towns/Counter magnets around

Million plus Urban Agglomeration (UAs) covered under JNNURM (i.e., Bengaluru and its urban peripheries) to channelize their future growth in order to reduce pressure on metropolis Bangalore

To enhance sustainability of urban infrastructure by implementing reforms (such as energy audit, introduction of cost effective technologies, improvement of Operations & Methodologies)

Adopt Innovative Private-Public Partnership models for development of satellite town (Hosakote)

Earmarking 10-15 percent of housing sites for urban poor (land reservation as per National Urban Housing & Habitat Policy, 2007) in the study area.

To promote reforms such as various urban services and citizen facilities; reforms of property tax with GIS applications, Budget provision for basic services and house sites to urban poor; formulating laws for disaster management, rain water harvesting, reuse and recycle waste water, structural safety.

The mission of the project is to make Hoskote in the urban periphery of Bengaluru and develop it into economically sustainable, self sufficient , environmentally safe and socially inclusive city which would improve the quality of life of citizens and reduce migration in to the Primate City.

6.0 Some Queries and Suggestions

Is decentralising an urban magnet towards peripheries and beyond ,the fate of polarisation.? This remains to be the most obvious question in the minds of the city planners. Bengaluru maximises it's carrying capacity and moves towards each directions while spreading it's conurbation field to the fringes. If we consider post modernism as a method, then no doubt a settlement is most likely to follow/evolve through similar stages, but if we follow the concept of Deer, then being postmodernism a style, Bengaluru still manages to continue its style of expansion. The villages along the fringes of Bengaluru, are steadily urbanised for the sake of planning for accommodating more of urban population and their activities. But these fringes slowly loose their green fields and patches of forested areas which lead to environment degradation and concreted spaces started dominating the once rural land uses. Agrarian landowners in these villages are to be 'placed' within these new developments so that their would be no deprivation issues as such in relation to their lands and livelihoods. These villages are fraught with contestations between real estate developers, industrialists and agrarian landowners over land acquisitions and, more broadly, the distribution of costs and benefits of the new highways should be at par the welfare of the residents.

7.0 Conclusion

As the cities grow there remains immense opportunities for the suburbs to excel as far as employment, spatial development, infrastructural make-over are concerned. But what remains crucial is the resettlement issues for the already existing residents of the region. The benefits of development should not be only for the city living but also should be channelised in balanced form to the agrarian societies of that particular place.

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