

RURAL URBAN INTERFACE AND DEVELOPMENT OF PERI URBAN AREAS IN INDIA: REVIEW OF LITERATURE

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Abstract: *India's' rapid urban development has increased the size of its urban population. During the last fifty years the population of India has grown two-and-a-half times, but urban India has grown nearly five times. The high rate of urban population growth is a cause of concern among India's urban and town planners. The rural-urban fringe offers the greatest challenges to the urban planners. Urban sprawl is a natural phenomenon accompanying rapid urban growth. The rapidly growing urban population in the large cities and high rate of migration spills into the rural areas surrounding the city boundaries. The settlement of the urban people into the surrounding areas and location of economic activities like factories, amusement parks, commercial complex etc. gradually brings about a change in the land use pattern in the rural areas. This gives rise to the problems of rural-urban fringe, which is a transition zone between urban and rural settlement sharing the features of both. The emergence of rural-urban fringe brings about significant change in the occupational pattern, cultural behavior, environment and quality of life of the people in the rural areas adjoining the cities. While creation new job opportunities for the local residents, this process also brings about significant changes in the quality of life of the rural people both in negative and positive terms. Against this backdrop, present paper purports to review of theoretical perspective of development of peri urban areas in India.*

The phenomenon of rural-urban fringe which happens to be unplanned and haphazard leads to the problems of rise in land values, dispossession of farmers from land, increasing congestion, deterioration in physical environment, pressure on infrastructural facilities, cultural shock, social tension and proliferation of criminal activities. The change in the land use from agricultural to non-agricultural activities has large implications for food security at the family and the country level. The problems of rural-urban fringe thus pose a major challenge to urban policy planners. The environmental degradation, natural resources, conflicts, health concerns, socio-economic, cultural and psychological factors and social injustice are particularly acute in the peri-urban situation and immediately needs attention of the academics, planners and administrators.

The rural urban interface is the most dynamic spatial feature of a mega city. The transition that the interface offers due to urbanization is an impact as it results in growth. Urbanization results in transformation of land use, environment, and culture of communities, especially

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in the interface and thereby changes the attire of the city regions ecology. The interface is a territory of urbanizing village with different intensities and different scales of urbanization. The process leads to the formation of urban villages, which, unlike the western realities, often turns into slums. The study of rural urban interface and formation of peri-urban areas is important in the context of inclusive urban planning and development as envisaged in the Eleventh and Twelfth Five years Plans.

The rural-urban fringe has different manifestations in the literature in terms of the way it is conceptualized and delimited. The term fringe was introduced by Smith (1937) to describe built-up area just outside the corporate limit of the city “though the word, “urban as synonymous to fringe was used by Gaplin as early as in 1915 for “rural land in process of conversion to “urban . Smith’s definition was mainly concerned with the demographic characteristics of the area; therefore, it presented a general rather than a specific conceptualization of the fringe. Wherein, (1942) was the first to use the term rural-urban fringe, applying it in his work on cities in the United States, his example was followed in India by many others, including Nangia (1976), Yadav (1987), Ramachandran (1989), Thakur (1991), Lin (1994), and Lucas and Van Oort (1993). Many other terms are found in the literature, implying different delimitations and levels of analysis. The following list illustrates the diversity in terminology: *rurban fringe* (Schenk, 1997), *urban fringe* (Kabra, 1980; Hill, 1986; Kumar, 1998), *rural hinterland of the city* (Kundu, 1991), the *city’s countryside* (Bryant *et al.*, 1982), *peri-urban fringe* (Swindell, 1988), *rural fringe of the city* (Leeming and Soussan 1979), *peri-urban areas* (Dupont, 1997; McGee, 1991), *desakota* regions (McGee, 1991), and *metropolitan fringe* (Browder *et al.*, 1995; Rao 1991; Saini 1989). Research in languages other than English includes descriptions such as the Dutch *ruraal-urbane overgangszone tussen stad en platteland* (Druiven, 1996) and the French *Périurbanisation* (Dupont, 1997), *le périurbain* (Banzo, 1998), *espace péri-urbains* (Vennetier, 1989). The rural urban fringe is a zone or frontier of discontinuity between city and country in which rural and urban land use are intermixed. The fringe is defined in relation to the city and exists in the agricultural hinterland where land use is changing. The rural urban fringe lies between the continuous built-up area of a city and the urban shadow and ecologically it can be viewed as an area of invasion in which population density is increasing rapidly and land values are rising, (Siddhartha, 2003). The fringe consists of an inner fringe which is characterized by land in an advanced stage of transition from rural to urban land use. In this area new construction is taking place, which have been approved or planning permission granted by the authority. The second area in the fringe is the outer fringe (sometimes called the rural fringe) which is an area in which rural land use continues to dominate the landscape but there is infiltration by those urban land uses which take up too much land to be easily located elsewhere, for example, airports, cremations, sewage works, etc. Urban research during the past few decades has put an emphasis on the transformation of urban peripheries because it is here that the most dynamic changes are happening. In demographic terms, the analysis of large urban centers shows rapid growth rates particularly in developing countries like India and China because of exponential growth

in human population. Urban growth has accelerated during the last two decades, and small towns and rural peripheries are progressively incorporated into a wider and more complex urban system (Aguilar, 2008). Urban centers do not spread uniformly, however, because urban expansion is not a consistent process in all directions beyond the built-up area. As an effect, a formation of a wide urban fringe emerges with more and more diffused limits between the urban and rural areas. Urban fringe on account of its dynamic nature has been the focus of interest for geographers and town planners who have observed that understanding the nature of fringe is as challenging as to make predictions about it. They have attempted to map, quantify and predict the direction rate and spatial extent of probable urban expansion. From the point of view of urban expansion, the spatial context of land use and land cover changes in the urban fringe is important since it comprises a critical consideration for decision-making in urban land use (Reenberg & Fog, 1995 in Liu & Zhou, 2005).

The occurrence of rural urban fringe is rather a recent phenomenon around Indian cities, though its occurrence around western cities was observed long ago. It has been asserted that the rural-urban fringe was non-existent even around the largest metropolitan cities in India before 1950. The main reason for the absence of Rural-Urban fringe was the very slow growth of cities in that period. Any small increase in the population of a city was generally absorbed within the existing residential areas. An important development in the urban settlement during the past few decades has been the rapid expansion of population and built-up area into unincorporated suburb and in areas surrounding large towns and cities. This recent finger like trend of development at the margins has been made possible by the mechanized transportation and the extension of public utility services such as electricity, water and sewage, etc. beyond the city's limit. The process of accretion which takes place outside the city has generated a zone of transition between the rural and urban landscape, popularly known as the rural-urban fringe. In other words, the centrifugal forces which impel functions to migrate from the central zone of a city towards its periphery create an amorphous territory around the cities, often called the rural-urban fringe (Lal, 1987).

The study of the available literature reveals that most of the studies regarding rural-urban fringe appeared during the period from the mid -1940s to the beginning of the 1960s, in which attention was mainly focused on the physical delimitation, identification and the defining features of the fringe. The term fringe was introduced by Smith (1937) to describe built-up area just outside the corporate limit of the city "through the word, "urban as synonymous to fringe was used by Gaplin as early as in 1915 for rural land in process of conversion to "urban". Smith's definition was mainly concerned with the demographic characteristics of the area; therefore, it presented a general rather than a specific conceptualization of the fringe. Further, Salter (1940) in his excellent study "The Rural-Urban Fringe" defined the fringe as a mixture of land uses that are related to farming and urban interest."

The rural-urban fringe is not an Indian phenomenon; it has its origin in the west. It is, therefore, useful to examine western notions and definitions of the rural-urban fringe.

Wehrwein (1942) was the first social scientist to define the rural-urban fringe. According to him, "this is the area of transition between well recognized urban land use and the area devoted to agriculture". Billzard and Anderson (1952) have attempted a more specific definition, and according to them "the rural-urban fringe is that an area of mixed urban and rural land uses between the points where full city services cease to be available and the point where agricultural land use predominate." Singh (1967) has described fringe as "the rural land with urban phenomena." He further develops the idea of fringe on the basis of the study of Wehrwein (1942) by saying that "The rural land is 'forced' into urban uses prematurely and is almost 'Frozen' rarely being restored to agricultural uses. Thus an 'institutional desert' is forced, or else, one may term it as an urban erosion of rural lands." The new built up social and economic units adjacent to the town receive facilities from the rural authority after payment of taxes but they get town facilities also like electricity, gas, water and transport etc.

With the evolution of the concept, many scholars tried to bring out its definition as well as pointed out various inherent limitations. Kurtz and Eicher (1958) have figured out that "The 'fringe' and 'suburb' have been used as interchangeable term in individual studies and need definite differentiating criteria on the basis of location, and characteristics, growth and density, Occupation and governmental structure". Pryor (1968) defined the rural-urban fringe as the zone of transition in land use with social and demographic characteristics, lying between (a) the urban and suburban areas of the central city and (b) the rural hinterland. The transition takes place from intense use to presence of non-farm-dwellings, occupation and land use respectively, as well as urban to rural social orientation. However, these characteristics may differ both zone wise and sector wise and will be modified through time. Thus the rural urban fringe is really an extension of the city itself. Oosthuizen (1969) has given an alternative terminology of 'suburban area' as 'rural suburb', 'quasi-urban area', or 'quasi-urban township.' According to the definition of the census bureau, "sub-urban areas are the residential areas situated outside but adjoining the municipal boundaries. they have no form or urban local administration and can for all practical purposes be regarded as part of the town or city, because they usually have distinct urban character and are closely linked to the parent municipality, economically, socially and otherwise, and there is also a considerable amount of daily travel between the suburban area and the parent municipality". Mishra (1980) is of the view that the concept of Rural-Urban Fringe" and "The Rural-Urban Fringe-Its concept and Importance in Planning" highlights the fallacy of dichotomizing the settlement continuum. The dichotomy, an administrative designation, according to him, is anachronous and pragmatic. He has also enumerated a number of factors to be essentially considered in the delimitation of the fringe. McGee (1991) used the term desktop. He claims that in Asian context, where the concept of traditional settlement pattern evolves, distinguishing urban and rural areas are not valid, given the emergence of high growth rural areas close to cities and along highway corridors. The 'Peri-urban' term has been used to define 'a place, concept or processes' by Narain and Nischal (2007). Peri-Urban area 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 transition from rural to urban. Finally, as a concept, it refers to an interface between rural and urban culture, ecology, and environment institution and perspectives. Wehrwein (1942) has called it an “Institutional Desert” because of the uncontrolled location there of unpleasant and noxious establishments such as slaughter houses, junkyards and wholesale oil storage, and of utilities such as sewage plants and cemeteries. Andrews (1942) contributed new thought to the fringe studies by attempting to differentiate the urban fringe from the rural-urban fringe. The urban fringe, as he puts it, is the active expanding sector of the compact economic city and the rural-urban fringe lies adjacent to the periphery of the urban fringe. The year 1942 bore a special significance for such studies as after Wehrwein and Andrews, Klow (1942) and Alpake were also to emerge on the scene. Alpake (1942) has defined the urban fringe as “that cultural development that takes place outside the boundaries of central cities and extends to the areas of predominantly agricultural activities”.

Walter Fiery (1946) said “the rural fringe is a marginal land use area not because of its geographical location, its soil type or its topography, but rather because of its particular degree of accessibility (relative to that of other land use) to some central transportation point”. Rodehaver (1947) in his study “Fringe settlement as a two directional movement” reiterates that new residents converge upon the fringe both from urban places and rural areas. While Dewey (1948) marked that the movement of population in to rural-urban fringe was a movement of urban people. He further adds “ in the fringe area there is mingling of people of some of whom work in and are oriented towards agriculture while at the same time the remainder pursue urban occupations and an urban way of life”. The end of the forties saw a well marked deviation from the traditional line of definition and division in rural-urban fringe studies as Aschman (1949) and Blizzard and Anderson (1952) confined to land use and Martin (1953) to patterns of population. Balk (1954) added a new term, as he found the fringe area an area of “urbanization”. Duncan (1956) used the term fringe to denote the non-suburban population of the territory in urbanized areas outside the central cities. His urbanized area contained three components- central city, suburb and urban fringe. The urban fringe is limited to the corporate limit of the city and often it is found outside the limit also. Kurtz and Eicher (1958) attempted to differentiate between fringe and suburb. Golledge (1960) used the term geographical no-man’s land for this contact zone between rural and urban land uses. Similarly, Russwurm (1969) refers to this area as “frontier of discontinuity between the city and country, while Conzen (1960) has recognized the fringe belt as significant determinants of the morphology of urban settlements. Defining its character, he identifies, the fringe belt itself as composed of two sections, the proximal or inner margin where development is closer and more continuous and the distal or outer margin where growth is more sporadic and the development more dispersed in character. Wissink (1962) in an extensive survey of the fringe areas of American cities identifies “fringe , “suburbs , “pseudo-suburbs , “satellites and pseudo-satellites and in land use terms has called it an area of great differentiation. Pastalan (1967) giving an operational definition of the fringe has defined it as an area in transition where rural land uses are giving way to urban land uses.

Seeing all these differentiations in the definition, Whiteland (1967) called the fringe a “heterogeneous region”. In his view, they are examples of regions that derive their unity not from homogeneity of forms but from certain factors that influenced their location.

Pryor (1968-69) is of the view that the rural-urban fringe may quantitatively be subdivided into an “urban fringe and a “rural fringe on the basis of its land use composition. Young (1962) studied some geographic features of the urban fringe while Morrill (1965) was more specific as to the mode of its expansion. Harvey (1965) considered the nature and economics of urban sprawl in general. Socioeconomic problems pertaining to the fringe and fringe dwellers have attracted the attention of various scholars of this time. The study to throw light on current processes within fringe area is that undertaken by Pahl (1965). His work focuses largely upon the social character of London’s fringe. He recognizes four main processes under way.

Singh (1967) has described fringe as “the rural land with urban phenomena”. He further develops the idea of fringe on the basis of the study of Wehrwein (1942) by saying that the rural land is forced into urban uses prematurely and is almost frozen rarely being restored to agricultural uses. Rikkinen (1972) has analyzed the way in which ownership boundaries affect urban growth and land use change, while Schnore and Klaff (1972) have measured the speed of suburbanization over the last decade in the United States, compared to the earlier decades. Some researches on related theories and demonstration were carried out at home and abroad, such as metropolis fringe area (Hall, 1996), edge cities (Keil, 1994), extended metropolitan regions (Ginsburg *et al.*, 1991), urban-rural integration (Jones and Pravin, 1997), peri-urbanization (Webster, 2002), etc. Over the past 20 years, spatial differentiation in terms of land use, transportation, housing, environment, and socio-economic aspects has been documented by a number of urban scholars (Landis, 1995; Kahn, 2000). Subsequently, change has been either at the small scale of personalization, the intermediate scale of ‘house building in the back garden’ (Whitehand and Larkham 1991) or, rarely, demolition and rebuilding. The story of changing suburbs has become more about changes to existing suburbs than about creating new ones (Whitehand and Carr 1999).

As per the view of Hammer *et al.*, 2004, the pattern of random, unplanned growth of urbanized areas, commonly known as sprawl, has become the most common form of land use/land cover change around cities throughout the world. The worldwide deterioration of natural and human systems due to the expansion of the urban population and urbanized areas occur at all geographic scales (Botkin and Beveridge 1997; UN 2006). This state of affairs has triggered a considerable amount of research aimed at the study of causes and consequences of this phenomenon, including the development of methods and indicators for the assessment of urban sprawl (Hasse and Lathrop 2003; Hammer *et al.*, 2004; Herold *et al.*, 2005); studies of the dynamics of the phenomenon (Berling-Wolff and Wu 2004; Yu and Ng, 2007); the ecological effect of urban expansion on wildlife (Blair, 1996, 2004; Theobald *et al.*, 1997; McKinney, 2002); various aspects related to loss and fragmentation

of agricultural lands (Fischel, 1982; Brabec and Smith, 2002; Carsjens and van der Knaap, 2002); urban management and the effects of land use policies (Conway and Lathrop 2005; Marcotullio and Boyle 2003; Wasilewski and Krukowski 2004). The literature includes a discussion regarding the driving forces of urban sprawl, among which the more cited are increases in numbers of households, housing preferences, industrial restructuring, geomorphological patterns and processes, infrastructure investment (Alberti *et al.*, 2003); land and real estate markets pressures (Ottensmann, 1977; Morello *et al.*, 2003); changes in economic scenarios, in social conditions, and local government policies (Wasilewski and Krukowski 2004; Morello *et al.*, 2003).

The post-industrial cities, however, display a great complexity in the land use pattern, which is manifestation of an equally complex social and economic structure. While Desai and Gupta (1987) studied Ahmadabad city and found that loss of agricultural land, land acquisition, lack of infrastructure and dual character of the fringe in terms of socioeconomic conditions of the people are some of the problems which have come up due to the change in Land use. Bentinck (2000) in his studies on Delhi fringe found that unauthorized part of the village outside land Dora or colonies usually don't have paved roads and cemented sewage system, unless the residents and the colonizers have put in these feature themselves. Carter (1972) in his study on peri-urban, found that there are two most important aspects which attracted the attention of people. It can be primarily designated by characteristic land-use association. Second, there is a notion that the social characteristics of the population of the fringe area are intermediate between those of the town and those of the county. Socio-economic problems pertaining of the fringe and fringe dwellers have attracted the attention of various scholars. The study to throw light on current processes within fringe area is that undertaken by Pahul (1965). His work focuses largely upon the social character of London's fringe. He recognizes four main processes under way. There is a tendency towards social and spatial segregation, selective immigration, changing commuting character, and collapse of geographical and social hierarchies. Sinha, (1980) has made a qualitative assessment of the fringe and its physical characteristics and problems in Patna City. Delimiting the fringe, the author has studied its physical characteristics and assessed the impact of location, transport, recreational, medical and institutional facilities on the living conditions of the people in the fringe areas, in terms of their housing, food habits and dress etc. The author has further examined the influence of Patna on the nine sample fringe using primary data.

The research on peril-urban poverty in India is relatively of recent origin as compared to rural poverty. The causes of peri-urban poverty at the household level have been studied comprehensively by Mittar (1986), Gupta (1989), Hanumapa (1991) and Vashishta (1993). These studies have emphasized mostly on the demographic and socio-economic factors which is responsible for the growth of poverty in the periphery areas. D'souza (1979) attributed the socio-cultural marginality aspect for the problem of poverty and said that it is that it is the intersection of the poverty and socio-cultural marginality which creates the special problems of the slum-dwellers and their isolation from the rest of community. Sjoberg (1960) reveled that in the classical structure of a pre-industrial type, human resources and

capital migrate from the periphery to the city centre resulted in rich centre and poor periphery. Alam and Khan (1987) held that rapid industrialization and urbanization has led to lack of basic services and mushrooming of slums which in turn has made these cities extremely vulnerable. Pocket of poverty on the fringe, we undoubtedly would have found them. The metropolitan fringe is much more heterogeneous in social composition and economic structure than conventional stereotype acknowledge (Browder *et al.*, 1995). Townsend (1979) has listed a few factors which could associate with poverty at the household level. The factors are: unskilled manual families, illiteracy and unemployment. But on the other hand Musgrove (1980) does not fully agree with Townsend's views. A number of studies have shown a positive relationship between high man/land ratios and propensity to migrate (Preston, 1969, Walsh and Trlin 1973, et.al). Substantial increase in the size of urban population in the level of urbanization and consequently a sharp rise in the number and size of big cities is a major cause as well as effect of rural out-migration (Cushing, 1993). On the whole, we can say that the relationship between urbanization and rural-urban migration is unpredictable (Hadi, 2004).

CONCLUSION

One of the major challenges of rural urban fringe is the haphazard location of major urban land uses. Most unpleasant land uses in the city are shifted to or located in the fringe zone. In the recent times the fringe zone has been used for the relocation of slums, which are uprooted from the city. This phenomenon underlines an attitude which is basically unfair, and which has to change. While the fringe may have to be developed for the physical expansion of city, this expansion ought to be well planned. The emergence of the fringe zone with its complex problems of adjustment between rural and urban ways of life has assumed great topical importance and has drawn attention of planners and social scientists. Yet the study of the urban fringe has been a neglected area of human research. Even in the developed countries a few studies have been undertaken in this regard through this developmental phase of urban morphology was experienced there in the very beginning of the present century. Fringe studies have not received much attention among Indians either from geographers or from scholars in any of the other disciplines. Hence, it is obvious that there are considerable gaps in geographical research in this area of urban studies. There are great differences in access to resources and opportunities among villagers, leading to interesting new patterns of livelihood.

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