

“Designing Strategies for Sustainable Livelihood in Peri-Urban Settlement” – A Review

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Abstract

The present concern of urban planners is related to recovering the challenges posed by the accelerated growth of metropolitan cities. It is realized that there is a very thin line between urbanization and sustainability. Peri-urban settlements are characterized by various flows from the urban. These flows tend to have an impact on the social, economic and physical aspects in these settlements. Literature reading is carried out to understand the peri-urban areas and its challenges. The works of literature referred are based on the planning of land use, rural spatial planning, Sustainable Livelihood, Peri-Urban area. To achieve sustainable development, one shall apply integrated planning approach, micro level planning in rural land, zoning, village development plan and other such corrective planning theories. The current paper puts forth the impacts on the livelihood sustainability in the peri-urban due to the urban impacts.

Keywords: Land management, Peri-urbanization Settlement, sustainable development, Smart development, Sustainable Livelihood, Urbanization

I. INTRODUCTION

India has experienced a high rate of urbanization since independence due to the industrial and economic growth-oriented policies. Developing countries like India are passing through a phase of rapid urbanization, the magnitude of urban population in India is second highest in the world. Cities are growing and expanding very rapidly changing their limit.

The urbanization rate in India is likely to go up from 31.16% in 2011 to 38.2% in 2026. Villages, located today in the fringe Area will tomorrow agglomerate within an Urban area. In India there are **6,50,216** villages out of them **1,25,000** villages are backward so there is a need for designing and building the village as a smart village. The surrounding villages often come under the influence of urbanization and pressure depends on the direction and intensity of growth of the city. [1]

The fringe villages draw a large number of people into the urban-rural interface, mostly because of internal and external factors such as economic activities and access to basic needs. With modernization and urbanization people migrate from one place to another place for different facilities such as education, employment and affinity of people towards the locality or city. The surrounding villages often come under the influence of urbanization and pressure depends on the direction and intensity of growth of the city. The villages located on the fringe are likely to be developed as the city limit expands.

II. CRITICAL LITERATURE REVIEW

As in literature are thoroughly referred relating to the peri-urbanization, land use planning, rural spatial planning, peri-urban morphology, sustainable planning of peri-urban areas, its dynamics and typology. Hence, the literature divided into several topics.

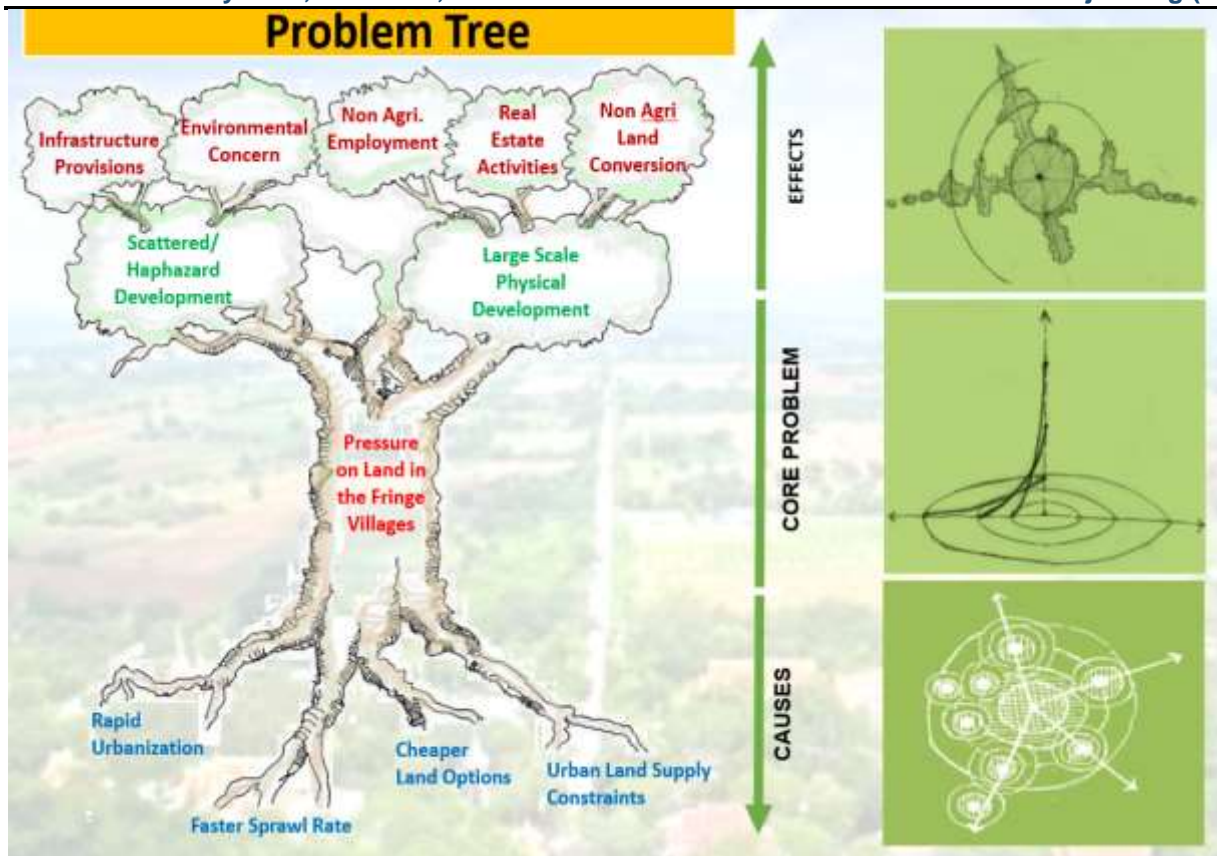


Figure 1 Problem Tree of fringe Villages

What is Peri Urban Area?

Peri-urban areas are zones of transition from rural to urban land uses located between the outer limits of urban and regional centres and the rural environment. Peri-urbanization relates to those processes of dispersive urban growth that create hybrid landscapes of fragmented urban and rural characteristics.

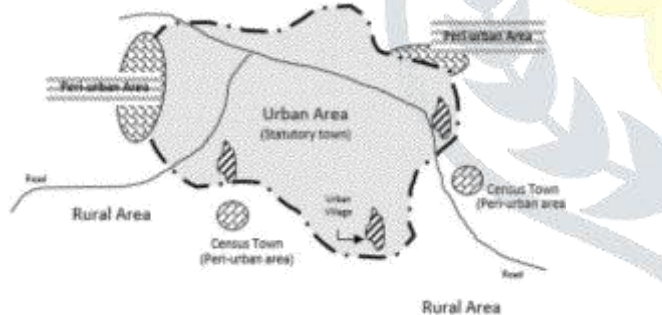


Figure 2 Peri Urban area

The conversion changes in the way people use their environment, consequently to the spatial structure of the landscape, rapid population growth and migration. Peri-urbanization defined as the process in which the rural or the village area becomes urbane regarding physical, economic and social aspects.

Peri – Village area: The land surrounding the gamtal of a village within the administrative boundary shall be termed as a peri-village area.

Albino et al. (2015) clarified the meaning of the word “smart” in the context of cities through an approach based on an in-depth literature review of relevant studies as well as official documents of international institutions. They also identified the main dimensions and elements characterizing a smart city. Descriptions of smart cities included qualities of people and communities as well as ICTs. [4]

Auon (2013) Presented a five steps approach for converting our urban centers into more efficient and sustainable places to live, which are setting the vision, bringing in the technology, working on the integration, adding innovation, driving collaboration. The aim of the smart city should be to reduce the energy wastage & give a better quality of life to its residents. Each and every city can be converted into a smart city by simply working on the backward sectors. A smart city is a community that is efficient, livable & sustainable. [5]

Azim et al. (2014) stated that smart city designing can help improve the quality of urban life in various areas so that using the minimum amount of investment in make cities smart, we have the maximum efficiency by participation of the public in different levels of community to improve the urban life. Therefore, today urban design should be in line with smart city and its goals. In urban design, smart design should be applied. Making urban design smart doesn’t mean make all urban processes electronics but means use of all available contexts in order to enhance the quality of urban life. Information technology can be used as one of the factors that accelerate the city goals and its smart design. [6]

Chavda Nihal sinh et al (2016) The Government of Gujarat has launched Vishwakarma Yojana (scheme) for development of villages by identifying the requirements of villages. Under this scheme, the villages are surveyed and this project was identified and selected for implementation. Urbanization is to bring peace of mind to the villagers by providing them the basic amenities required and still keeping the village soul intact. This project gives one new idea for Development of rural villages. Also gives procedure how they fulfil requirement of the villages. Now a day people are moving from rural to urban area due to lack of basic amenities. With the help of this yojan, we can bring awareness about the thing which are not available at rural areas. So, this help to provide better solution for the available problems in rural area like drinking water, Drainage facility, road network, etc. [7]

Debnath et al. (2013) Identified 66 indicators of smartness and presented a comprehensive and practical framework for benchmarking smart transport cities, which was illustrated using the data of 26 large cities around the world. This work can be helpful for evaluating the uncertainties in smartness indices for different weighting schemes and examining the effectiveness of the smart technologies. [8]

Dr. Milind Kulkarni et al. (2010) In India majority of the population still lives in villages. A lot of work needs to be done in making the villages clean. There is indoor air quality, solid waste management and renewable energy etc. In some aspects such as water supply, considerable work is done whereas in some areas like sanitation lot of work is required to be done. We can learn lot of lessons based on success and failure in adopting different alternatives. Keeping in touch with technology clean village projects should integrate technology and digital design, which will make the village not only clean but also smart. [9]

Dr. Pritesh Y Shukla (2012) A smart village knows about its citizens, available resources, applicable services and schemes. Smart village initiative focuses on improved resource-use efficiency, empowered local self-governance, access to assured basic amenities and responsible individual and community behavior to build a vibrant and happy society. The present research paper discusses about village development in developing world. The skill behind the concept of "Develop Village" is that the technology should act as a means for development, enabling E-education and local market opportunities, improving health and welfare problem. The present era is increased on Communication, Information Technology. This technology has proved its potential in various sectors of development in city and village areas. Researcher has made an attempt to correlate the different factors of the smart village and its implications. [10]

Bhatt, Bhasker & Roopawala, Pooja. (2017). Sustainable peri-village in a potential peri-urban area. With the increasing urbanization, there's an intense concern about land consumption, especially, urban expansion onto rural land. Such kind of growth addressed as peri-urbanization and to manage these areas becomes one critical issue in the spatial planning. Literature reading is carried out to understand the peri-urban areas and its challenges. The works of literature referred are based on the land use planning, rural spatial planning, suburban morphology, its dynamics, and typology. To achieve sustainable development, one shall apply integrated planning approach, micro level planning in rural land, zoning, village development plan and other such corrective planning theories. Keywords—land-use planning, Peri-urbanization, peri-urban morphology, typology of peri-urban, sustainable development. [11]

Poerwoningsih Dina et al. (2016) presented the results of research using the visibility analysis in the countryside Bumiaji, Batu, where the characteristics of the rural mountains feared to change. The research aimed at villages with the criteria of the major issues that are assumed to carry an adverse change to the development of rural areas. These problems are Urbanization, Land use, Environmental degradation and the threat of water and energy crisis, Low economic level, and Areas include in Indonesian economic corridors in MP3EI. This paper organized into two main sections. The first section describes the function of the visibility and analysis capabilities. The second part presents the methods and results of the implementation of the profile

analysis and its implications on rural area spatial planning in the study area. Such kind of analysis can be used to facilitate stakeholder in better understanding the complexity of rural space in the stage of rural resource information inventory and also in the stage of further planning analysis. [12]

Budiyantini Yanti et al. (2016) Identifies various typologies of peri-urban areas in the Metropolitan Bandung of Indonesia by 17 cluster analysis of 255 villages and 18 variables, based on physical, social and economic characteristics. The three types identified are Predominantly Urban, Semi-Urban, and Potential Urban. Thus, it can be noted that the mostly urban areas are located quite nearer to the core Bandung area while the Semi-urban located in between and the potential urban is far away from the core. The closer the region near to Bandung is likely to have more urban nature while the once located far away explained as the leapfrog process of sprawl [13]

Tietjen Anne et al. (2016) explained about an emerging strategic planning approach at the local level by using the concept of wicked problems, Actor – Network Theory and strategic planning approach. The case study of Thisted rural municipality is discussed here in relation with the rural shrinkage. The primary purpose of this paper is to provide a solution to this wicked problem through strategic planning approach both empirically and theoretically. The theoretical approach is composed of three components, firstly shifting from wicked problems to a communicative rationality, secondly placed based and learning oriented strategic planning and lastly strategic planning as a translation process. So, to create a better quality of life to the village people, the framework was set up for settlement and tourism. The outcome of the study shows the real role of planners, the effect of collaborative decision making and also the local physical projects played a significant role in sustainable adoption to rural shrinkage. [14]

K. Malarvizhi et al. (2016) prepared the land-use map using the free Google Earth images instead of downloading the expensive images which may not be accessible at all times due to security reasons. So here the researcher uses Google images, then mosaic and clipped to facilitate on-screen digitizing GIS software. These pictures were used to detect the urban change by utilizing the images of 2007 and 2014. This study was carried out for Vellore in Tamilnadu where a tremendous urban growth has been experienced in recent decades. The methodology adopted is very simple starting from collecting the topo sheets from Survey of India then scanned and geo-referenced using GCPs, the boundary of Vellore is then converted from ArcGIS shapefile format to Google Earth compatible format, the Google Earth images extracted by using Elshayal Smart. Total 340 images were collected and digitized using UTM projection in ArcGIS 10. Finally, onscreen scanning of various land use classes was performed to prepare land use map. [15]

Dinesh Singh et al (2015) carried out a study in the peri urban area of Indore Indore city located in Madhya Pradesh state. As Urbanization increases, the fringe's productive agricultural land gets converted to urban uses. Also in villages, there is a lack of proper guidelines and monitoring system so the conflict of development goes on and hence unorganized growth takes place. The findings of the paper suggest that there is no development plan for the region and nor the authority is following the guidelines. The outcome of the study suggests that the agricultural land wasted upon in random development. Few recommendations by the researcher are given to have a planned framework for the

peri-urban villages. [16]

Cobbinah et al. (2015) showed how indigenes of Feyiase, a peri-urban area of Kumasi, Ghana, area adapted to the effects of fast-growing transformation of the peri-urban agriculture land into residential and other uses. The methods adopted include interviews, household surveys and agency consultations. The main aim of the paper is to analyze the nature and extent of physical development, its effect on periurban livelihood and the coping strategies of peri-urban indigenes. From the findings, it can be noted that the resident has come up with main three coping strategies. They are: changing primary livelihood source, migration and dependence on remittances. [17]

McFarland Paul et al. (2015) concluded that the peri-urban areas require a more mature approach to land use planning taking the case studies of Melbourne and Sydney, Australia. The researcher has identified a tangle of law, science, and economics in the current approach to planning peri-urban areas. The consumption of non-urban land continues for public use in spite of many attempts, it cannot be stopped, but the pace reduces. Considering all the facts, the consumption of peri-urban land must be controlled and well organized in a balance land use planning. [18]

Al-Hader M., Rodzi A. (2009) The smart city infrastructure is the introductory step for establishing the overall smart city framework and architecture. Very few smart cities are recently established across the world. Some examples are: Dubai, Malta, Kochi (India), Singapore. The scope of these cities is mainly limited to construct a technology park converting the industrial real estate to state of the art information technology using the evolution in the telecom and IP networks including insignificant asset management automation system. The development background is to create an operational platform that would manage the power consumption and operational resources in order to reduce the overall running operational cost. This paper will debate the smart infrastructure development framework and the surveying positional accuracy of locating the assets as a base of the smart city development architecture integrated with all the facilities and systems related to the smart city framework. The paper will discuss also the main advantages of the proposed architecture including the quantifiable and non-quantifiable benefits. [19]

Lai Yani et al. (2014) pinpointed the constraints in land development in urban villages of China considering two cases in Shenzhen. This study provides a perspective from property rights to understand the development of urban communities, with particular attention to industrial land development. This approach develops a conceptual framework to understand the role of land property rights in land development. A set of research questions prepared and comparative analysis was conducted based on two cases in Shenzhen, one Dongfang-tantou industrial area, and another Beguiling Industrial area. After the comparative perspective, it is noted that the Dongfang-tantou area has suffered from a lack of infrastructure, the road system is weak, and lack of other facilities makes it a less competitive area as compared to Baguiling area. Thus, there is a demand to upgrade the Dongfang-tantou area to fetch safe investments and enterprise. The reasons for such lagging behind performance are because of land exploration risk, and the standard property transaction is forbidden and not covered in by the state land management system. Therefore, more efficient and equitable land reforms are to be incorporated, and property right needs formalization over common areas in

urban villages in China. [20]

Vivek N. Desai, Prof. Jagruti Shah (2019) In India the rural area consists of majority of the total population. The migration has increased stress on urban areas and so on its infrastructural facilities. So there is a need to develop rural areas to improve the quality of lifestyle of people, and for this, the Government of India has implemented many plans and programmes, among which one is Saansad Adarsh Gram Yojana (SAGY) with the vision to make at least one Gram Panchayat as an "Ideal Panchayat (Adarsh Gram)" from each Member of Parliament (MP) constituency every year. A Member of the Parliament has to understand the needs of people, status of resources and develop a village development plan which is executed with the help of various administrative departments to adopt a Gram Panchayat from his constituency. But many examples were observed in this scheme in which a kind of haphazard development took place in past years under it. This study analyses the critical factors and its sub factors, which affects the development of village as Adarsh Gram under SAGY based on significant index and for these two villages were taken for study area to carry out questionnaire survey. Relative significances and rankings of these critical factors are examined based on the results of the survey which is useful for effective and efficient development of villages and it was found that the first three rankings were occupied by Governance, Educational and Physical factors which is important for the development of these villages. [21]

Bhuyan, Jasmine. (2014). Rural Development Program: An Introspect Towards Reform in 21st Century. SSRN Electronic Journal. 10.2139/ssrn.2524227. "Just as the whole universe is contained in the self, so is India contained in the villages." --- Mahatma Gandhi. The Rural development generally refers to the process of improving the quality of life and economic welfare of people living in relatively isolated and sparsely populated areas. There is an urgent need for a second green revolution since the first green revolution has run out of steam, and has been eaten up by population increases, and significantly enough has caused massive environmental side effects, including water and pollution. The second green revolution should in our view include: agriculture R&D, shift to central and eastern U.P./Orissa/Bihar, more efficient pricing and use of water, fertilizer, and electricity and up scaling rural agro industry, including supply chain management, etc. Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is considered as a "Silver Bullet" for eradicating rural poverty and unemployment, by way of generating demand for productive labour force in villages. It provides an alternative source of livelihood which will have an impact on reducing migration, restricting child labor, alleviating poverty, and making villages self-sustaining through productive assets creation such as road construction, cleaning up of water tanks, soil and water conservation work, etc. for which it has been considered as the largest anti-poverty programme in India. In this paper, based on the secondary data, an attempt has been made to comprehensively understand the development effort to rebuild the rural life and livelihood on the basis of various secondary data. Furthermore, it focuses on various approaches for rural development including Gandhian approach. [22]

J.P. Yadav, Abhishek Sharma (2016) India, a country of villages having 2,64,617 Gram Panchayats, would take huge amount of resources if government try to develop all these villages. According to 2011 Census, the population of rural areas comprised of 68.84%. Instead, a strategy is

devised in which some villages should be developed as model villages, with the help of community participation and remaining should be encouraged to emulate them in a competitive spirit. Governments alone cannot do anything; community also needs to take responsibility and initiatives. This is the thinking behind Government's model village scheme 'Saansad Adarsh Gram Yojana' (SAGY). The scheme is inspired by ideals of Mahatma Gandhi whose concept of rural development revolves around creating model villages for transforming 'SWARAJ' into 'SU-RAJ' that means Good governance. The concept of the smart village is not constructed on the image of a city or a very developed village of any state or nation. It doesn't mean an adopted smartness, but an avenue to show the inherent smartness of the villages. Cultural heritage of the village would also be under the purview of SAGY. For encouraging better performance, four kinds of awards have also been instituted.

III. SUMMARY AND FINDING

- The study becomes relevant on account of the high rate of urbanization occurring in India. In this context of rapid expansion of urban areas, it becomes necessary to gain a broad understanding of peri-urban issues arising due to urban – periphery interactions.
- It becomes easy to identify the changing livelihood strategies when a settlement is in this phase (i.e., the process of occupational change) rather than after the settlement has urbanized.
- Rural areas are often need to be developed for better livelihood and technology for the overall development of the nation. Smart Villages will not only reduce the migration towards urban area but also enable the population flow from urban to rural area as well. The government scheme like SAGY is found to a best catalyst in achieving overall rural development. This scheme is based on the development with community participation instead of doing by government alone, so the outcomes are better than any other schemes in achieving overall development of the Indian villages.
- The various issues that come into play in the peri-urban are identified through literature review to gain an understanding about the impacts these issues have on the livelihoods. The issues identified range from “environmental related issues” to “institutional & governance issues”.
- It was revealed from this study, that the first three rankings which were common were, Educational, Governance and Physical factors arrived in both the study areas as top three rankings so major focus has to be paid on improvement of these factors and its sub-factors, then following other factors. If development takes place in this order then it will be easy and effective and also economically feasible.
- Need for a conceptual bridge to enable spatial planners to Victor further crossings those are necessary for planning future development.
- There is a need to have balanced, integrated perspective on urban development which considers the two important aspects of sustainability, social equity, and environment as well as economic growth.
- A well-balanced land-use plan must be prepared for each village to regularize the random development and consumption of peri-urban land.
- Thus, it recommends active planning institutions with adequate planning actions to promote orderly physical development in peri-urban areas and to create a high quality of life for the dwellers. Also, being a planner, it

is the prime duty to plan these most neglected areas to have integrated development.

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