

## **A SNAPSHOT FROM THE EDGE: PERI-URBAN TRANSFORMATION IN THE WAKE OF URBAN SPRAWL**



*In this blog, Judy explores the dynamic transformation of India's peri-urban areas under the influence of urban sprawl. She examines the changing landscape, farming practices, and labor patterns, highlighting the challenges and opportunities for sustainable development in these rapidly evolving regions.*

### **CONTEXT**

Picture yourself standing on the outskirts of a city, watching people harvest fresh produce against the backdrop of a newly constructed skyscraper. This area is identified as 'peri-urban', a blend of both urban and rural. Don't be surprised if six months from now, this scene changes completely. This rapid change is characteristic to peri-urban areas, that are constantly evolving under the thrusting influence of urban expansion into their borders, a phenomenon known as 'urban sprawl'.

Indian cities are growing at a breakneck pace, and this rapid urbanization is transforming the surrounding areas. Currently, over 500 million Indians live in urban areas, and this number is expected to swell by another 416 million by 2050. While the city centres are undergoing massive development, they cannot operate in isolation but within a 'sphere of dependence' (pun intended). As India aims to gain the 'Developed Economy' tag by 2047, prioritizing peri-urban development alongside urban transformation is essential, as masking the dreary city side with a superficial tack – such as a flex board – won't help in building a resilient and sustainable environment.



**Farmers working on their fields against the backdrop of towering buildings**

This blog provides an overview of the urban-peri-urban dynamics in India and the transformations that peri-urban areas are undergoing because of the urban sprawl. It covers three key aspects: the diversification of farming practices, the changing aspect of land use, and the shifting patterns of labour participation in these peri-urban settings.

## NATURE OF URBAN SPRAWL IN INDIA

Urban sprawl in India is a multifaceted phenomenon characterized by the rapid and often unplanned expansion of cities into surrounding rural and natural areas. This sprawl leads to the transformation of villages into peri-urban areas, peri-urban areas into towns, towns into cities, and cities into metros. The result? A diverse and sometimes chaotic urban landscape. Let's dive into the different flavours of urban sprawl that can be spotted across Indian cities.

### ***Low-Density (Radial) Sprawl***

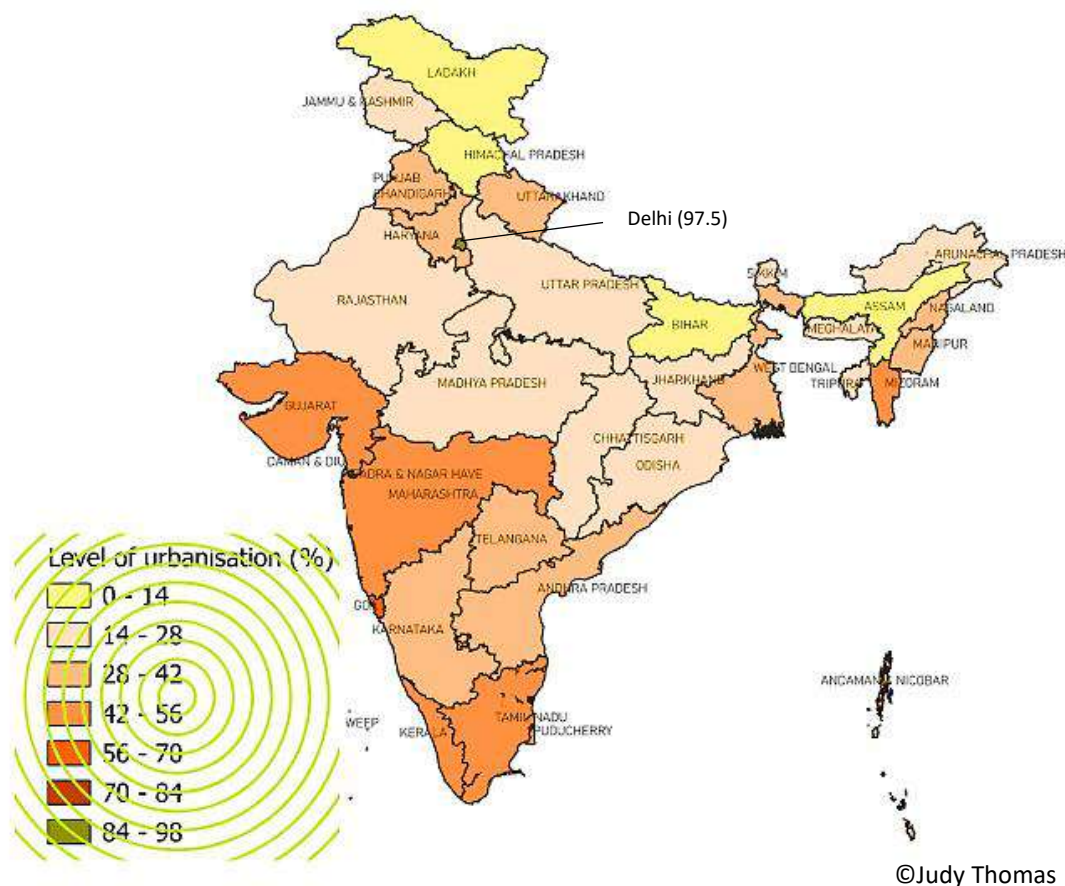
Seen in cities like Bengaluru and Pune, this type of sprawl involves urban areas spreading outwards, consuming rural land at the edges. New housing developments and commercial centres emerge, creating a sprawling, quilt-like cityscape.

### ***Ribbon Development***

Common in Chennai and Kolkata, urban growth follows major transportation routes, stretching along highways and railways. Adjacent areas develop quickly, while lands farther away remain rural until infrastructure extends perpendicularly, converting these into urban areas as land values rise.

### ***Leapfrog Development***

Found in Hyderabad and Ahmedabad, this pattern creates a patchy urban landscape with developed lands separated by undeveloped areas. New townships and industrial zones appear far from the main urban centres, making it costly and inefficient to provide urban services.



Level of urbanisation in India Map

### ***Mixed Forms of Sprawl***

Cities like Delhi exhibit a mix of low-density sprawl, ribbon development, and leapfrog development. This blend leads to a complex urban landscape requiring comprehensive planning to manage effectively.

## **PERI-URBAN TRANSFORMATION AS AN OUTCOME OF URBAN SPRAWL**

Peri-urban transformation is a direct consequence of urban sprawl, reflecting the dynamic and evolving nature of the urban-rural interface. As cities expand, they convert agricultural land and natural spaces into urban areas, reducing land available for farming and conservation. This expansion strains infrastructure, causing inefficiencies in service delivery. For example, Bengaluru's rapid outward growth has led to water shortages and inadequate waste management in newly developed peri-urban regions such as Whitefield and Bellandur, with frequent service interruptions reported.

From an environmental perspective, urban sprawl exacerbates pollution, deforestation, and biodiversity loss. The Chennai floods of 2015 exposed the consequences of unchecked urban expansion and the depletion of natural water bodies. Similarly, Delhi experiences hazardous air quality levels and worsening respiratory issues among residents, thus diminishing its appeal to younger generations. Additionally, sprawl destroys green spaces and wetlands, further degrading the environment.

Socially, sprawl fosters segregation, restricting access to services for marginalized groups. In Mumbai, affluent communities move to gated suburbs such as Powai and Bandra, while low-income groups remain in crowded areas like Dharavi. This spatial divide perpetuates social inequality by limiting access to quality education, healthcare, and job opportunities for marginalized communities.

Economically, this sprawl drives up infrastructure and transportation costs, as well as commuting times. Hyderabad's leapfrog development incurs higher expenses for connecting remote urban areas with essential infrastructure, forcing vulnerable groups to endure longer commutes and higher transportation costs. These extended commutes lead to increased fuel consumption and travel times, negatively impacting productivity, the environment, and overall quality of life.

While urban sprawl does promote economic growth through new business opportunities and industrial zones, its unchecked expansion often outweighs these benefits, exacerbating environmental degradation and social disparities.

Let's now scrutinise the three major transformations happening in peri-urban areas and residents' ways of dealing with them.

### ***Farm diversification***

In India, with its agrarian roots still firmly in place, peri-urban agriculture is currently suffocating from the urban sprawl. As cities expand, farmland around them is disappearing faster than you can say "tractor". The days of farming just to get by are over, especially in these 'secondary cities' where the cost of farming is skyrocketing.

So, what's a peri-urban farmer got to do? Diversify, of course! One popular move is to swap traditional crops for high-yielding ones that cater to urban tastes. This shift varies from region to region, reflecting local preferences and market demands. Farmers are getting creative with their land use, integrating livestock, setting up direct sales from their farms like 'Pick from Farm' points, and even engaging in greenhouse farming (Box 1). While we're not quite at the stage where farming is seen purely as a business in India, on-farm diversification is definitely on the rise. And it's not just about crops anymore.



Agro-tourism is catching on, especially around Mumbai, Chennai, and Kolkata, offering city dwellers a taste of farm life. Organic farming is also gaining ground, showing that in the battle between concrete and crops, farmers are finding new ways to keep their heads above water.

**Box 1. Case Study – Peri-urban Hyderabad City**

Located on the outskirts of Hyderabad, the village of Tondapalli in Shamshabad has experienced a remarkable shift in its agricultural practices. Traditionally reliant on conventional farming, local farmers have now begun growing flowers such as jasmine, marigold, and chrysanthemums, which have a high demand throughout the year and fetch better prices. In the past they grew vegetables and flowers in greenhouses. However, due to high maintenance costs, they have largely switched to open-field floriculture, with only a few farmers still maintaining greenhouses.

Narasimha, a 58-year-old farmer from Tondapalli, reminisces about the past: "My father had six acres, and my brother and I, along with him, used to grow paddy. Over the years, we had to give up a part of our land for the construction of the airport. I was okay with handing over the land but continued farming on the remaining two acres because that's all I knew. My brother moved to the city and now works as a driver. Today, my children run an event management business, so we grow flowers (gerbera) for that. I'm not sure if they will continue farming or sell the land after me."



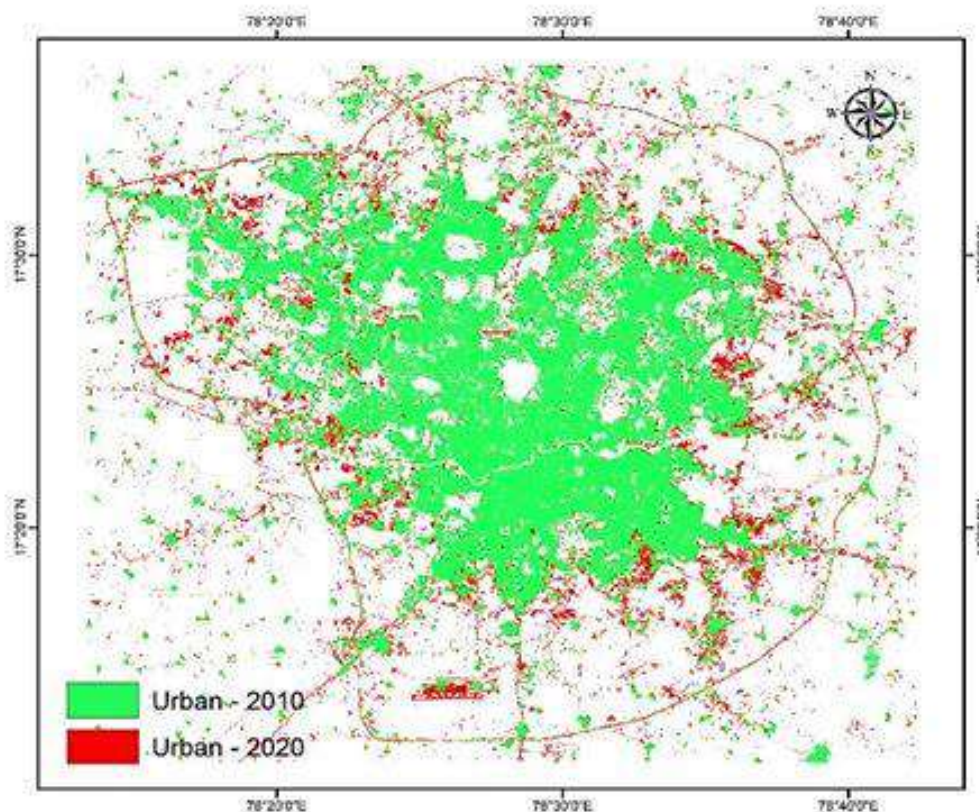
**Peri-urban farming in Shamshabad, Hyderabad**

***Land diversification***

Urban sprawl is really shaking things up, especially when it comes to land use. Those once lush green fields are now turning into concrete jungles. Water bodies are shrinking, croplands and fallow lands are being used for infrastructure and other developments. Often, those water bodies become dumping grounds for construction and other solid wastes. The Musi River in Hyderabad, once a vital water source supporting local ecosystems, has tragically become a dumping ground. Construction debris and non-biodegradable materials, such as plastic waste, are regularly discarded along its banks and leach directly into the river, posing serious concerns.

Infrastructural development continues to reshape the landscape, particularly along transportation corridors. The area occupied by built-up land, encompassing housing and other structures, has more than doubled in Hyderabad from 38,863 hectares to 80,111 hectares between 2005 and 2016. This growth trend is accelerating, driven in part by the expansion of transportation networks. Further, the transformation is driven by both the influx of residents from city centres to the outskirts seeking affordable housing and less congestion, as well as rural-to-urban movements in pursuit of better economic opportunities, higher living standards, and access to urban amenities such as healthcare and education.

Agriculture, which used to be the main game in town, is now fighting for its share of natural resources. Coastal wetlands and mangroves are being gobbled up for real estate, throwing the local ecosystem out of whack. All these changes lead to a reduction in agricultural areas, loss of green spaces, and increased pressure on natural resources, dramatically altering the landscape of peri-urban areas.



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**Urban sprawl mapped for Hyderabad City**

### ***Labour diversification***

Urban sprawl isn't all bad; one of its perks is creating more job opportunities in the outskirts of cities. As cities grow, they open up new avenues for employment, benefiting peri-urban residents. This leads to three main work groups: those solely farming, those juggling farming with non-farm jobs, and those who engage in non-farm work.

The evolution of pluriactivity – a term for engaging in multiple jobs – stems from urban sprawl. Rising living costs and the quest for a stable income often push peri-urban residents to take on various roles. You'll find them in construction, running small businesses, working as wage laborers, and offering various other services.

But here's the catch: while pluriactivity can help people make ends meet, it might also nudge them away from farming altogether. In the long run, this trend could spell trouble for agriculture. So, while it's great to have job options, it's worth thinking about the future of farming. At some point it would be right to say – *don't trade in all your ploughs for pay checks!*

## THE WAY FORWARD

Looking ahead, the question naturally arises: what's the best course of action? Development often requires sacrifice, and as cities expand, changes on the outskirts are inevitable. The key is to guide this transformation rather than letting it unfold haphazardly. It's about steering future growth in a way that preserves agriculture and protects the ecosystem. A few suggestions here:

- A major challenge hindering proper peri-urban development in India is the lack of clarity in administrative boundaries and areal extent. Development schemes are typically focused on either urban or rural areas, often neglecting peri-urban regions that fall between these categories. The recent National Rurban Mission, 2016, aims to bridge this urban-rural divide by focusing on development in peri-urban clusters. However, for such government initiatives to succeed, it is essential to clearly identify and define these growing peri-urban areas. Integrating GIS studies with ground-level data is an effective way to enhance land-use plans and implement zoning regulations.
- Promoting multi-functional land use that caters to both farmers' needs and urban residents' services can be highly beneficial. One method is to combine agriculture, aquaculture, and wetlands with wastewater treatment and reuse. Additionally, establishing agro-parks in peri-urban areas can integrate farming with recreational and educational activities. These parks can include crop cultivation, livestock areas, picnic spots, walking trails, and educational centres where urban residents can learn about agriculture and sustainable practices.
- Encouraging farm diversification in peri-urban areas becomes increasingly vital as urbanization expands and consumer preferences shift towards specialty crops, organic produce, and niche agricultural products. Despite these shifts, persistent challenges include accessing markets, acquiring technical expertise, and establishing adequate support systems. Effective government initiatives and support programs are essential for providing training, access to credit, market linkages, and infrastructure development necessary for successful farm diversification in peri-urban settings.
- Farmers in peri-urban areas increasingly seek additional income through pluriactivity. Encouraging on-farm non-agricultural diversification activities such as agro-tourism, value-added processing, farm-based education, crafts, and agroforestry can sustain farming while boosting income.

## ROLE OF EXTENSION ADVISORY SERVICES IN PROMOTING PERI-URBAN FARMING

- **Provide Training and Resources:** Offer training in sustainable practices and farm diversification. Ensure farmers have access to the latest research and technologies.
- **Facilitate Market Access:** Help farmers connect with markets, both locally and beyond, to sell their products. This includes developing market infrastructure and creating linkages with buyers.
- **Promote Community Engagement:** Encourage community participation in planning and decision-making processes. EAS can act as facilitators to ensure that farmers' voices are heard.
- **Support Policy Development:** Advocate for policies that protect agricultural land and promote sustainable practices. EAS can provide valuable data and insights to inform policy decisions.

## ENDNOTE

As urban sprawl reshapes the peri-urban landscape it is necessary to guide this transformation thoughtfully. By embracing farm diversification, sustainable practices, and community involvement, we can ensure that development enhances rather than erases our agrarian roots.

The future of peri-urban areas hinges on our ability to balance progress with preservation. Let's craft a future where urban vibrancy and rural heritage coexist harmoniously, ensuring sustainable growth and resilient communities.

## SUGGESTED READINGS

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