

Challenges Faced by Panchayats in Peri-Urban Areas of Tamil Nadu: Special Focus on Madurai District

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ABSTRACT

The peri-urban areas are the transitional spaces between rural and urban settlements where agricultural land, housing layouts, commercial establishments, industries and expanding urban infrastructure are increasingly co-existing. The rapid urbanization of cities in Tamil Nadu has converted many village panchayats on the urban fringe into peri-urban settlements. The demographic, economic, environmental and infrastructural attributes of these panchayats are increasingly urban but they continue to operate within a rural local-government system. This institutional mismatch poses important challenges for local governance. The problem is particularly visible around Madurai, where urban expansion, road development, conversion of agricultural land, increasing demand for housing, pressure on water resources and inadequate systems for solid and liquid waste management have transformed the city's rural fringe. Tamil Nadu's Sixth State Finance Commission identified peri-urban panchayats as a distinct category and noted their special infrastructure and financial requirements¹. The Government of Tamil Nadu has subsequently introduced specific guidelines for their development². This article examines the principal challenges faced by peri-urban panchayats in Tamil Nadu, with particular attention to Madurai District. It argues that peri-urban governance requires institutional coordination, differentiated fiscal arrangements, integrated land-use planning, strengthened infrastructure and greater community participation rather than simply treating these settlements as conventional rural villages.

Keywords: Peri-urbanisation, Panchayati Raj, Tamil Nadu, Madurai, urban expansion, local governance, land-use change, infrastructure, waste management, rural-urban interface.

1. INTRODUCTION

The rural-urban divide has become increasingly blurred in rapidly urbanising regions of India. Areas located on the outskirts of cities are neither fully rural nor fully urban. They accommodate agricultural

^[1]Tamil Nadu State Finance Commission. (2023). Sixth State Finance Commission Report: Rural Local Bodies—Peri-Urban Panchayats. Government of Tamil Nadu.

^[2]Government of Tamil Nadu, Rural Development and Panchayat Raj Department. (2023). Guidelines for the Development of Peri-Urban Panchayats, G.O. (Ms.) No. 106, dated 17 August 2023.

activities alongside residential colonies, commercial establishments, industries, transport infrastructure and urban lifestyles. Such areas are generally described as peri-urban areas. Allen argues that the traditional rural-urban dichotomy is inadequate for understanding these spaces because environmental, social, economic and institutional processes associated with both rural and urban areas operate simultaneously within them.³

Peri-urbanisation is therefore not merely the physical outward expansion of a city. It is a process involving demographic change, land-market transformation, livelihood diversification, infrastructure development and institutional restructuring. Tacoli's analysis of rural-urban interactions demonstrates that the movement of people, goods, capital and services across rural and urban boundaries is fundamental to contemporary development processes.⁴ In India, these interactions have become particularly significant because metropolitan and regional cities are expanding into surrounding villages.

Tamil Nadu provides an important context for examining this phenomenon. The state has a relatively dense network of urban settlements and a long-established system of decentralised rural governance. However, many village panchayats located close to municipalities and corporations are experiencing rapid urbanisation without corresponding institutional transformation. The Sixth Tamil Nadu State Finance Commission defines village panchayats situated within five kilometres of municipalities and municipal corporations as peri-urban panchayats.⁵ It identified 687 such panchayats in the state and recognised their distinctive problems, especially in drainage, solid-waste management and liquid-waste management.⁶

Madurai District provides a particularly useful case. The district currently has 13 development blocks and 420 village panchayats, alongside one municipal corporation, three municipalities and nine town panchayats.⁷ Madurai's urban expansion has increasingly affected settlements surrounding the corporation and other urban centres. Studies of the Madurai region demonstrate substantial changes in land use and built-up areas, particularly along major transportation corridors.⁹¹⁰

The central argument of this article is that the major difficulty of peri-urban panchayats is not simply a shortage of infrastructure. Rather, it is the institutional mismatch between rapidly changing urban realities and a governance system designed primarily for rural settlements.

2. UNDERSTANDING THE PERI URBAN PANCHAYAT

The peri-urban interface can be defined as a transitional zone of overlapping rural and urban functions.

[3]Allen, A. (2003). "Environmental Planning and Management of the Peri-Urban Interface: Perspectives on an Emerging Field." *Environment and Urbanization*, 15(1), 135–148.

[4]Tacoli, C. (1998). "Rural-Urban Interactions: A Guide to the Literature." *Environment and Urbanization*, 10(1), 147–166.

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[5]District Administration, Madurai. (2026). Development Administration: Panchayat Unions and Village Panchayats. Government of Tamil Nadu.

[6]District Administration, Madurai. (2026). Local Bodies Administration. Government of Tamil Nadu.

[7]Panneer Selvam, S. (2010). "Identification of Urban Sprawl Pattern for Madurai Region Using GIS." Madurai Kamaraj University.

[8]Water Management Using Traditional Tank Cascade Systems. (2021). "Water Management Using Traditional Tank Cascade Systems: A Case Study of Semi-Arid Region of Southern India." *Discover Applied Sciences*.

Unlike a regular village, a peri-urban panchayat can have agricultural fields, gated residential layouts, informal settlements, industries, warehouses, educational institutions and commercial establishments all within the same administrative boundary.

The Tamil Nadu State Finance Commission's definition of such settlements based on proximity to urban local bodies provides an administrative basis.¹¹ Proximity, however, does not cover the complexity of peri-urbanisation. Equally important indicators are population density, land use change, commuting patterns, real estate development, economic diversification and pressure on municipal-type services.

The 2023 guidelines of the Government of Tamil Nadu acknowledge this changing nature and state that the population growth, increasing density, and influence of adjacent urban local bodies are transforming village panchayats.¹² The guidelines explicitly recognize that there are almost 690 peri-urban panchayats adjacent to municipal corporations and municipalities, and identify solid and liquid waste management as major issues.¹³

This creates a paradox of government. The demand for urban quality services is increasing among peri-urban residents. However, the panchayat remains a rural local body in terms of institutional status, revenue base and administrative capacities. This results in a mismatch of functions, finances and institutional capacity.”

3. URBAN EXPANSION AND LAND USE CHANGE IN MADURAI

The major challenge faced by peri-urban panchayats around Madurai is the rapid change in land use. Studies related to the urban fringe of Madurai have shown that the urban development has crossed the traditional municipal boundary and the growth has been concentrated particularly along the major roads.¹⁴ GIS based studies have identified transportation infrastructure as one of the major factors responsible for linear urban development in villages surrounding Madurai.¹⁵

Converting agricultural land to residential plots, commercial properties and other built-up uses has several implications. First, it takes away farmland and changes rural livelihoods. Second, development in bits and pieces increases the demand for roads, street lighting, drainage and water supply. Thirdly, it leads to difficulties in planning, as development often moves faster than the expansion of public infrastructure.

Research on the peri-urban and urban catchments of Madurai found that the built-up areas increased dramatically between 2002 and 2018, with an increase of about 150–330 per cent in the urbanized cover

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[2]Government of Tamil Nadu, Rural Development and Panchayat Raj Department. (2023). Guidelines for the Development of Peri-Urban Panchayats, G.O. (Ms.) No. 106, dated 17 August 2023.

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in different catchments.¹⁶ The study also linked unplanned urban expansion to the degradation of traditional water systems.¹⁷

The conversion of land also creates fiscal and administrative problems. A panchayat may be required to provide services to a rapidly growing residential layout where the revenue system is largely based on a rural taxation framework. Consequently, the Sixth State Finance Commission recommended to grant a special status to the peri-urban villages and to allow them to levy house/property taxes at par with the adjoining urban local bodies.¹⁸

4. INFRASTRUCTURE SHORTFALLS

4.1 TRANSPORT AND ROADS

The peri urban settlements surrounding Madurai are witnessing a significant rise in traffic, as these settlements are gradually becoming residential and work extensions of the city. Roadside development can spur commercial activity and jobs, but it also brings congestion, pedestrian-safety issues and pressure on local roads.

Often homes are built before the roads, sewers, electricity and other infrastructure are in place. Therefore, the panchayats have to take care of roads and drainage systems meant for a much smaller population.”

The Tamil Nadu Panchayats Act, 1994 has assigned responsibilities to village panchayats such as construction and maintenance of village roads, public lighting and drainage.¹⁹ However, these responsibilities are to be executed within the limits of the available funds. So statutory responsibility does not always equate to adequate financial ability.

4.2 DRAINAGE AND FLOOD CONTROL

Drainage is another critical challenge. In many locations, conventional rural drainage schemes are often not suited to the more impervious peri-urban landscapes. As more farmland and open space are covered with pavement, storm-water runoff increases.

This problem is demonstrated in the case of Madurai. Studies on urban expansion and the Vaigai river have identified the effect of increasing impervious surface cover on the river system and studied pollution in both urban and peri-urban stretches.²⁰ This brings a more complex task to the panchayats, who need to manage drainage problems, partly caused by urbanization, without the financial and technical resources of urban local bodies.

5. WATER SUPPLY AND PRESERVATION OF TRADITIONAL WATER RESOURCES

Water is one of the most important challenges faced by peri-urban panchayats. Urbanisation increases domestic demand while simultaneously threatening the ecological systems that historically supported rural

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[10]Balaji, G., & Thirumaran, K. (2019). “Evaluating the Impact of Urbanization on the Physiochemical Parameters of the Urban River System: A Study on Vaigai River, Madurai.” Journal of Urban Management, 10(1).

water security.

Madurai's landscape has traditionally depended upon tanks, ponds and interconnected water systems. Research on traditional tank-cascade systems in the Madurai region has demonstrated the relationship between urbanisation, land-use change and degradation of water systems.²¹

Peri-urbanisation also changes the nature of groundwater demand. Residential layouts, industries and commercial establishments increase extraction pressure. At the same time, agricultural land conversion can reduce groundwater recharge.

Water insecurity is not merely a technical issue. As studies of peri-urban South Asia demonstrate, water insecurity is shaped by institutional arrangements, technological choices, urbanisation and unequal access to resources.²² Consequently, peri-urban panchayats require integrated groundwater management, protection of tanks and water bodies, rainwater harvesting and coordination with neighbouring urban authorities.

6. SOLID AND LIQUID WASTE MANAGEMENT

Waste management is perhaps the clearest example of the urbanisation-infrastructure mismatch. The Sixth State Finance Commission explicitly states that peri-urban panchayats face special problems in solid-waste management and liquid-waste management and require increased capital investment in drainage.²³

A village that previously generated predominantly biodegradable household waste can experience a dramatic increase in plastic, packaging, construction and commercial waste following urbanisation. The panchayat may not have adequate vehicles, collection staff, processing facilities or scientifically designed disposal sites.

Liquid waste presents an even more difficult problem. Increasing numbers of houses with septic tanks, soak pits and other sanitation arrangements can place pressure on groundwater and local drainage channels. Where underground sewerage is absent, untreated or inadequately treated wastewater may enter agricultural fields, ponds or streams.

These problems are not unique to Madurai. The Second Administrative Reforms Commission observed that peri-urban areas experience difficulties arising from land-use change, environmental degradation, pollution, waste management and inadequate infrastructure.²⁴ However, Madurai's semi-arid environment makes effective management of water and wastewater particularly significant.

7. FINANCIAL CONSTRAINTS AND REVENUE MOBILISATION

Financial weakness is a fundamental structural challenge. Village panchayats have legally assigned responsibilities but comparatively limited own-source revenues. As settlements urbanise, expenditure requirements increase faster than traditional rural revenue systems.

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[11]Water Security in Peri-urban South Asia: Adapting to Climate Change and Urbanization. (2016). Oxford University Press.

[1]Tamil Nadu State Finance Commission. (2023). Sixth State Finance Commission Report: Rural Local Bodies—Peri-Urban Panchayats. Government of Tamil Nadu.

[12]Second Administrative Reforms Commission, Government of India. (2007). Sixth Report: Local Governance—An Inspiring Journey into the Future. Government of India.

A peri-urban panchayat may have thousands of new houses, commercial properties and institutions, but its tax base may not reflect the intensity of urban development. The Fifth and Sixth State Finance Commissions therefore recognised the need for special fiscal arrangements for peri-urban panchayats.^{25,26} The Sixth Finance Commission recommended allowing peri-urban panchayats to levy vacant-land tax and suggested that property taxation could be aligned with neighbouring urban local bodies.²⁷ It also recommended bifurcation of large village panchayats based on population and number of habitations.²⁸ The problem is therefore not simply that panchayats need "more money". They require a fiscal system appropriate to the services they are expected to provide.

8. INSTITUTIONAL FRAGMENTATION AND PLANNING DEFICITS

One of the most important governance problems is fragmentation among institutions. Peri-urban development involves village panchayats, panchayat unions, municipalities, municipal corporations, planning authorities, revenue departments, highways authorities and water and sanitation agencies.

Each institution operates according to different administrative boundaries and legal mandates. Yet the physical processes of urbanisation do not respect those boundaries.

Madurai illustrates this challenge because the corporation has expanded significantly over time while surrounding settlements continue to experience urban growth.²⁹ Research on Madurai's urban development indicates that boundary expansion has not automatically eliminated differences in service provision between older and newly incorporated areas.³⁰

The result is a fragmented planning landscape in which one agency may approve a road, another regulates land use and another provide water or sanitation. Panchayats are frequently left to manage the consequences without having sufficient authority over the underlying development process.

9. LACK OF SPATIAL PLANNING

Peri-urban panchayats are particularly prone to unplanned development, as the regulation of land use is often split between rural and urban planning systems. The rapid conversion of agricultural land into layouts can precede comprehensive infrastructure planning.

The problem is aggravated by the speculative nature of peri-urban land markets. Landowners may find that converting agricultural land into plots produces greater immediate financial returns than farming.

^[1]Tamil Nadu State Finance Commission. (2023). Sixth State Finance Commission Report: Rural Local Bodies—Peri-Urban Panchayats. Government of Tamil Nadu.

^[13]Tamil Nadu State Finance Commission. (2017). Fifth State Finance Commission Report. Government of Tamil Nadu.

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^[14]Kundu, D., Lahiri, B., Pandey, A., & Sharma, P. (2019). "City Profile: Madurai, India." *Environment and Urbanization ASIA*, 10(2), 308–330.

^[14]Kundu, D., Lahiri, B., Pandey, A., & Sharma, P. (2019). "City Profile: Madurai, India." *Environment and Urbanization ASIA*, 10(2), 308–330.

Research on peri-urban land governance in India demonstrates how formal rules and informal mechanisms interact in land-use conversion.³¹

Madurai's experience shows that road accessibility has strongly influenced the spatial pattern of urban expansion.³² Once development begins along a major corridor, additional housing, shops, institutions and services follow, producing a self-reinforcing cycle of urbanisation.

Consequently, panchayats need stronger integration with regional and metropolitan planning processes. Development control cannot remain exclusively reactive.

10. CHANGING RURAL LIVELIHOODS AND SOCIAL STRUCTURE

Peri-urbanisation also produces profound socioeconomic change. Agricultural households increasingly diversify into construction, transport, petty trade, services and wage employment. Landowners who sell agricultural land may experience a substantial short-term increase in income, but landlessness and loss of agricultural livelihoods can create longer-term vulnerabilities.

Tacoli's work emphasises the importance of diversified rural-urban livelihoods and the interaction between agricultural and non-agricultural economic activities.³³ In peri-urban Madurai, these processes can be observed through increasing commuting between villages and the city and the emergence of mixed rural-urban livelihoods.

Social relationships also change. New residents may have different expectations regarding public services, taxation and participation in local governance. Traditional village institutions and social networks can therefore coexist uneasily with new urban populations.

Panchayats must consequently govern increasingly heterogeneous communities rather than relatively homogeneous agrarian settlements.

11. DEMOCRATIC PARTICIPATION AND THE GRAM SABHA

The Gram Sabha is an important institutional mechanism for participatory governance. However, peri-urban transformation can complicate participation. Migrant residents, new apartment communities and landowners may have different interests from long-established agricultural households.

The 73rd Constitutional Amendment envisaged Panchayats as institutions of local self-government responsible for economic development and social justice, with potential responsibilities covering 29 subjects listed in the Eleventh Schedule.³⁴ Effective decentralisation, however, requires not merely elected representatives but also adequate functions, finances and functionaries.

Peri-urban panchayats particularly need Gram Sabhas to deliberate on land-use change, water resources, waste management, roads and infrastructure priorities. Participation can help prevent conflicts between old and new residents and improve accountability.

[15]Purushothaman, P. (2014). 'Buy Land Today and Become Lord Tomorrow': Land Governance in the Peri-Urban Region of Chennai. Erasmus University Rotterdam.

[7]Panneer Selvam, S. (2010). "Identification of Urban Sprawl Pattern for Madurai Region Using GIS." Madurai Kamaraj University.

[4]Tacoli, C. (1998). "Rural-Urban Interactions: A Guide to the Literature." *Environment and Urbanization*, 10(1), 147–166.

[16]Government of India. Constitution of India, Part IX: The Panchayats, including Articles 243G–243H and the Eleventh Schedule.

12. CLIMATE AND ENVIRONMENTAL VULNERABILITY

Climate change is another complicating factor. Peri-urban areas combine increasing built-up surfaces with sensitive water bodies, agricultural lands and natural drainage systems. This is a double whammy in semi-arid Madurai where water scarcity is a common occurrence during dry spells and flooding or drainage problems are seen during heavy downpours.

Destruction or encroachment of tanks and wet lands may reduce the storage capacity of the landscape. The reported degradation of traditional water systems in Madurai therefore has implications for urban resilience as well as agriculture.³⁵

Peri-urban panchayats must be treated as institutions of environmental management, not agencies of service delivery.

13. POLICY MEASURES FOR STRENGTHENING PERI URBAN PANCHAYATS

The following reforms are necessary for strengthening the peri urban panchayats,

First, Tamil Nadu needs to formally institutionalize a peri-urban category of local governance based on population, density, proximity to urban areas and intensity of land-use transformation, rather than distance alone. The State Finance Commission's recommendation offers an important starting point.³⁶

Secondly, fiscal decentralization should be strengthened. Peri-urban panchayats need to be empowered with enhanced property-tax powers, taxation of vacant land and predictable transfers based on service needs.

Third, integrated spatial planning should be carried out. The development plans of the Panchayats should be integrated with the municipal master plans and the regional plans and plans of the Local Planning Authority.

Fourth, there should be common infrastructure systems for waste processing, sewage treatment, storm-water drainage and water supply where individual panchayats do not have economies of scale. The 2023 Tamil Nadu guidelines already acknowledge the need for capital investment and coordination with adjoining urban local bodies.³⁷

Fifthly, Madurai needs a coordinated peri-urban environmental management framework for tanks, groundwater, agricultural land, drainage channels and the Vaigai river system.

Sixth, panchayats need professional technical support. Technical cells at the block or district level should have the availability of engineers, planners, GIS experts and environmental staff.

Finally, Gram Sabhas should be empowered as forums for deliberating on land-use conversion, infrastructure priorities, environmental protection and social equity.

14. Conclusion

Peri-urban panchayats are situated in one of the most troubled spaces of contemporary local governance. They remain legally rural but functionally urban. Their populations are demanding urban-quality

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[2]Government of Tamil Nadu, Rural Development and Panchayat Raj Department. (2023). Guidelines for the Development of Peri-Urban Panchayats, G.O. (Ms.) No. 106, dated 17 August 2023.

infrastructure, but their institutional structure, revenue systems and administrative capacities are still mostly rural.

Madurai is a case in point of this transition's complexity. Urban expansion, road-led development, conversion of agricultural land, pressure on water resources, degradation of traditional water systems and increasing waste generation have transformed the city's surrounding villages.³⁸³⁹ The district also continues to contain a large network of village panchayats—420 at present—making the rural-urban interface a major governance issue.⁴⁰

The answer is not to hastily convert every peri-urban panchayat into a municipality. Such a strategy could lead to a weakening of rural representation and could ignore the ongoing agricultural and ecological functions of these settlements. Instead Tamil Nadu needs to develop a differentiated peri Urban governance model that is a mix of rural democratic institutions with urban level planning, infrastructure and fiscal mechanisms.

The main policy principle should be that the peri-urban areas need to be planned before they become fully urban. The guidelines of the Tamil Nadu Government rightly acknowledge that today's peri-urban settlement may be tomorrow's town.⁴¹ For Madurai, therefore, strengthening peri-urban panchayats is not merely a question of improving village administration; it is an essential part of sustainable urban and regional development.

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