



Peri-urban Farming: Bridging the Gap Between Urban and Rural Agriculture

*Aayush Singla¹, Riya Majoki¹ and Aman Sharma²

¹Maharana Pratap Horticultural University, Karnal-132001

²Chaudhary Charan Singh Haryana Agricultural University, Hisar-125004

*Corresponding Author's email: aayush.singla.750@gmail.com

The global food system is under unprecedented pressure. Rapid population growth, accelerating urbanization, climate change, and shrinking agricultural land are collectively challenging our ability to produce and distribute nutritious food sustainably. According to global projections, nearly 68 percent of the world's population will live in urban areas by 2050. While cities act as hubs of economic growth and innovation, they are also centres of poverty, malnutrition, and food insecurity for millions of people. Long food supply chains, heavy dependence on rural production zones, and rising transportation costs make urban food systems increasingly vulnerable.

In this context, **peri-urban farming** has emerged as a practical and promising solution that connects urban demand with nearby agricultural production. Located in the transition zone between rural farmland and dense urban settlements, peri-urban agriculture plays a critical role in supplying fresh food, generating livelihoods, strengthening environmental sustainability, and enhancing the resilience of city food systems. Countries across the Global North and Global South have recognized its importance, as peri-urban agriculture in some regions accounts for more than half of the combined urban and peri-urban land use and significantly shapes ecological and spatial planning.

Peri-urban agriculture is not a replacement for rural farming, but a complementary system. When integrated with effective city-region planning, it can help cities meet the food needs of their growing populations while reducing ecological footprints and strengthening local economies.

What is Peri-urban Farming?

Peri-urban farming refers to agricultural activities carried out in areas located on the fringes of cities, where urban and rural characteristics overlap. These regions often experience rapid land-use changes, infrastructure development, and population growth. Farmers in peri-urban areas cultivate crops, raise livestock, grow vegetables, fruits, flowers, and sometimes practice aquaculture using land that lies close to urban markets.

Peri-urban agriculture is diverse in nature. It includes small vegetable farms, fruit orchards, dairy units, poultry farms, floriculture enterprises, and even high-tech operations such as greenhouse cultivation, hydroponics, and vertical farming. Due to their proximity to cities, these farms are uniquely positioned to supply fresh produce quickly and efficiently to urban consumers.

Why Peri-urban Farming Matters

1. Shortening Food Supply Chains: One of the biggest advantages of peri-urban farming is the reduction in distance between food production and consumption. Traditional food systems often involve transporting produce over hundreds or even thousands of kilometers. Peri-urban farms drastically shorten these supply chains, ensuring that fruits, vegetables, milk, and other perishables reach consumers quickly. Shorter supply chains mean fresher food, reduced post-harvest losses, lower transportation costs, and a smaller carbon footprint. For consumers, this translates into better quality produce at reasonable prices, while farmers benefit from direct market access.

2. Strengthening Urban Food Security: Cities depend heavily on rural areas for food supplies. Any disruption—natural disasters, pandemics, fuel shortages, or market volatility—can severely affect food availability. The COVID-19 pandemic clearly demonstrated the vulnerability of long food supply chains. Peri-urban farming acts as a buffer during such crises. Local food production close to cities ensures a more stable and reliable supply of essential food items. Fresh vegetables, fruits, eggs, and milk produced nearby can meet immediate demand, especially for low-income urban populations.

3. Environmental Sustainability and Climate Action: Peri-urban agriculture contributes significantly to environmental sustainability. By utilizing underused or marginal land near cities, it reduces pressure on distant rural ecosystems and limits the conversion of forests and natural habitats into farmland. Sustainable practices such as organic farming, integrated pest management, composting of urban organic waste, rainwater harvesting, and efficient irrigation systems are commonly adopted in peri-urban farming. These practices reduce chemical pollution, conserve water, and recycle nutrients, making peri-urban agriculture an important component of climate-smart food systems. Additionally, green peri-urban zones help regulate urban temperatures, improve air quality, and act as carbon sinks, contributing to climate change mitigation.

4. Economic Opportunities and Employment Generation: Peri-urban farming generates employment for a wide range of people, including landless laborers, migrants, women, and youth. Small-scale farms, nurseries, food processing units, and marketing enterprises create diverse income opportunities. The closer connection between farmers and consumers opens doors for entrepreneurship through farmers' markets, farm-to-table businesses, agritourism, and direct marketing. Value-added products such as salads, juices, processed vegetables, and dairy products further enhance income potential. For cities struggling with unemployment and poverty, peri-urban agriculture offers a locally grounded economic solution.

5. Sustainable Land Use and Urban Planning: Urban expansion often leads to the conversion of fertile agricultural land into concrete structures. Peri-urban farming helps protect such lands by integrating agriculture into urban planning frameworks. Productive use of vacant plots, green belts, abandoned industrial sites, and peri-urban open spaces ensures balanced land use. By acting as a physical and environmental buffer, peri-urban farms reduce urban sprawl, maintain open landscapes, and preserve cultural and natural heritage around cities.

6. Improved Nutrition and Public Health: Access to fresh, seasonal, and nutritious food is essential for public health. Peri-urban farming enables the supply of fruits and vegetables with minimal storage time, preserving vitamins and minerals. Urban residents benefit from healthier diets, while community gardens and local farms promote awareness about nutrition,

sustainable consumption, and healthy lifestyles. In many cities, peri-urban farms also contribute to public education through school visits and community initiatives.

Key Challenges Facing Peri-urban Farming

Despite its benefits, peri-urban farming faces several challenges that must be addressed systematically.

Land Availability and High Land Prices

Urban land is expensive and often contested for non-agricultural development. Farmers frequently operate on informal or insecure land arrangements, discouraging long-term investments. Innovative solutions such as rooftop farming, vertical agriculture, community land trusts, and designation of agricultural zones can help address these constraints.

Pollution and Environmental Risks

Proximity to cities exposes peri-urban farms to air, water, and soil pollution. Wastewater contamination, industrial emissions, and heavy metals pose risks to food safety. Adoption of water treatment systems, soil testing, protective cultivation methods, and regular monitoring is essential to ensure safe production.

Infrastructure and Services

Many peri-urban farms lack reliable infrastructure such as clean water, electricity, storage facilities, and transportation support. Strengthening rural-urban infrastructure linkages and investing in cold storage, pack houses, and processing units can significantly improve farm viability.

Community Awareness and Participation

Successful peri-urban farming depends on active community engagement. Educating urban residents about local food systems, encouraging participation in community gardens, and fostering partnerships with schools, institutions, and resident associations help create public support and shared responsibility.

Role of Government and Policy Support

Government interventions play a decisive role in scaling up peri-urban agriculture. Supportive policies can facilitate access to land, provide financial incentives, and promote sustainable practices. Inclusion of peri-urban farming in urban master plans and regional development strategies ensures its long-term integration.

Public-private partnerships, farmer cooperatives, and extension services are equally important in linking peri-urban farmers to markets, technology, and training. Transparent land tenure policies and targeted subsidies can further encourage investment.

Conclusion

Peri-urban farming holds immense potential to bridge the widening gap between urban and rural agriculture. By combining the strengths of both systems, it addresses pressing challenges related to food security, environmental sustainability, employment generation, and urban resilience. As cities continue to expand and climate uncertainties intensify, peri-urban agriculture offers a practical pathway toward resilient and inclusive food systems. With supportive policies, community participation, technological innovation, and sustainable planning, peri-urban farming can become a cornerstone of future-ready agriculture—benefiting farmers, consumers, and the environment alike.