

# Horticulture-led Rural Transformation in Jammu & Kashmir: Productivity, Policy and Resilience

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## Abstract

Horticulture in the Union Territory of Jammu and Kashmir has evolved into one of the most significant drivers of rural economic transformation. Characterized by high-value crop production, technological modernization, and export orientation, the sector has demonstrated productivity-led growth over recent years. Official statistics reveal that while the total area under major horticultural crops increased modestly from 3.42 lakh hectares in 2021–22 to 3.47 lakh hectares in 2025, production recorded a substantial growth of 12.50 percent during the same period. This divergence between land expansion and output growth indicates structural transformation driven by technological adoption, particularly through high-density plantation systems. The present study examines horticultural development through descriptive statistical analysis and an interpretative econometric framework. It evaluates production trends, export performance, infrastructure expansion, value-chain linkages, and policy interventions. The findings suggest that horticulture in Jammu and Kashmir is transitioning from traditional extensive farming to productivity-driven, market-integrated agriculture. Sustained growth, however, depends upon infrastructure strengthening, climate resilience, and value-addition strategies.

## Introduction

The Union Territory of Jammu and Kashmir possesses distinctive agro-climatic diversity, ranging from subtropical plains in the Jammu region to temperate and alpine zones in the Kashmir Valley. This ecological heterogeneity provides natural advantages for the cultivation of fruits, dry fruits, spices, and floriculture crops. Over time, horticulture has emerged as a critical component of agricultural diversification and rural livelihood enhancement in the region.

Unlike cereal cultivation, which primarily ensures subsistence and food security, horticulture offers substantially higher returns per hectare and generates greater labour intensity across production, harvesting, grading, packaging, transportation, and marketing activities. The Economic Survey 2025–26 indicates that the primary sector contributes over 20 percent to Gross State Value Added, and horticulture constitutes a major share of this contribution. The shift toward high-value crops is reflective of structural transformation within the agrarian economy.

This paper analyzes the evolution of horticulture in Jammu and Kashmir by examining area expansion, productivity growth, technological transition, export dynamics, and institutional reforms. It further evaluates the sector through an econometric interpretation of productivity determinants and assesses long-term sustainability.

## Data Source and Methodological Framework

The study relies on official data from the Economic Survey 2025–26, the Budget Speech 2026–27, and the Digest of Statistics 2023–24. These documents provide information on area under cultivation, production volumes, export earnings, infrastructure development, and sectoral contributions to the economy.

### Area Expansion and Production Dynamics

Between 2021–22 and 2025, the total area under major horticultural crops increased from 3.42 lakh hectares to 3.47 lakh hectares, representing a growth of 1.46 percent. During the same period, production registered a 12.50 percent increase. This disproportionate growth pattern indicates that productivity gains rather than horizontal land expansion have been central to output acceleration (Table 1)

Table  
Area and Production Growth in Major Horticultural Crops

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| S.No | Particulars                            | Unit         | 2021-22  | 2022-23  | 2023-24  | 2024-25  | 2025-26(up to Nov.) |
|------|----------------------------------------|--------------|----------|----------|----------|----------|---------------------|
| 1    | Area under Major Horticulture Crops    | Lakh Hectare | 3.42     | 3.44     | 3.45     | 3.46     | 3.47                |
| 2    | Production of Major Horticulture Crops | Lakh MT      | 24.31    | 27.22    | 26.43    | 26.92    | 27.35               |
| 3    | Area under High/Medium Density         | Hectares     | 11491.33 | 14031.37 | 18054.37 | 19662.56 | 20034.44            |

Source: Government of Jammu & Kashmir (2025)

The expansion of high-density plantation systems from 11,491 hectares to 20,034 hectares represents a technological shift within orchard management. High-density plantations utilize improved rootstocks, drip irrigation systems, and structured canopy management, thereby increasing yield per unit area and reducing gestation periods. The data strongly suggests that technological elasticity exceeds land elasticity, implying that productivity improvements are the dominant driver of horticultural growth.

This pattern is particularly significant in a region characterized by mountainous terrain and limited scope for extensive land expansion. Productivity-led growth ensures sustainable expansion without ecological degradation.

### Apple Economy and Structural Transformation

Apple cultivation remains the backbone of horticulture in the Kashmir Valley. The adoption of high-density apple orchards has significantly altered traditional production patterns. Conventional apple trees required nearly eight years to achieve full productivity, whereas high-density systems begin yielding commercially viable output within three to four years. This reduction in gestation period improves capital turnover and enhances farmer income stability. The modernization of apple cultivation also improves fruit grading, uniformity, and export quality. Improved post-harvest handling and packaging standards further strengthen market competitiveness. From an economic standpoint, the shift toward high-density plantations represents capital deepening and technological upgrading, contributing to higher total factor productivity.

### Export Performance and Market Competitiveness

Dry fruits, particularly almonds and walnuts, constitute an important export segment. Export value of almonds and walnuts reached ₹602.53 crore in 2024–25 (Economy Survey, 2025-26). The high export value relative to cultivated area reflects strong international demand and price realization.

Dry fruits are suitable for long-distance trade due to lower perishability compared to fresh fruits. Consequently, they provide strategic export advantages for a landlocked region. Export growth not only enhances foreign exchange earnings but also strengthens rural household incomes, as dry fruit cultivation is widely practiced by small and medium orchard owners.

The export orientation of horticulture thus integrates local production systems with national and international value chains.

### Digital Market Integration and e-NAM Reforms

The integration of 17 mandis with the electronic National Agriculture Market platform has improved price discovery and reduced intermediation inefficiencies. Trade value through e-NAM increased significantly within a short span, reflecting improved digital adoption.

Institutional reforms of this nature reduce transaction costs and enhance allocative efficiency. By narrowing the gap between farm-gate prices and wholesale prices, digital platforms increase producer surplus and improve income realization for growers.

### Infrastructure Investment and Capital Formation

Infrastructure development in cold storage facilities, controlled atmosphere units, transport logistics, and power supply has strengthened post-harvest management. Capital expenditure under recent budgetary initiatives prioritizes infrastructure strengthening, which indirectly enhances effective output by reducing post-harvest losses.

### Value Chain and Multiplier Effects

The horticulture value chain encompasses input suppliers, orchard labourers, packaging units, transport operators, cold storage facilities, exporters, and retailers. This interconnected network generates strong backward and forward linkages.

An increase in horticultural output stimulates allied sectors such as packaging material manufacturing, transport services, and export handling. The multiplier effect amplifies income generation beyond the farm level, strengthening rural economic resilience.

### Climate Risk and Sustainability

Climate variability presents structural challenges to orchard productivity. Extreme weather events can disrupt flowering cycles and reduce yield quality. Climate-resilient rootstocks, micro-irrigation systems, and insurance mechanisms are essential for long-term sustainability.

Preventive investment in climate adaptation yields higher economic returns than post-disaster compensation. Risk pooling mechanisms stabilize inter-temporal income flows.

### Policy Implications

Future policy must emphasize technological diffusion, export branding, value addition, and climate resilience. Development of food processing clusters and organic certification can enhance market competitiveness. Blockchain-based traceability systems could further strengthen export credibility.

Sustained capital investment and institutional reforms will determine the trajectory of horticultural transformation.

### Conclusion

Horticulture in Jammu and Kashmir exemplifies productivity-driven agricultural modernization. The modest expansion of cultivated area combined with significant production growth indicates structural transformation rooted in technological adoption. Export performance, digital market integration, and infrastructure development have strengthened rural incomes and economic resilience.

### References:

Directorate of Economics & Statistics. (2024). Digest of Statistics 2023–24. Government of Jammu & Kashmir.

Government of Jammu & Kashmir. (2025). Economic Survey 2025–26.

Government of Jammu & Kashmir. (2026). Budget Speech 2026–27.