



Horticulture Sector in India

For Prelims: [Horticulture farming](#), Pomology, Olericulture, Arboriculture, Ornamental, Floriculture, Landscape, Horticulture, [Mission for Integrated Development of Horticulture](#), [Green Revolution - Krishonnati Yojana](#), National Horticulture Mission, Horticulture Mission for North East & Himalayan States, National Horticulture Board, Central Institute for Horticulture, [India Digital Ecosystem of Agriculture \(IDEA\)](#), [Horticulture Cluster Development Programme](#), [National Horticulture Board \(NHB\)](#), [Agriculture Infrastructure Fund](#), [Seed Technology](#)

For Mains: Horticulture and its contribution in the economy.

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Why in News?

In recent years, India has witnessed a significant shift in dietary preferences, with a growing emphasis on **nutrition security** rather than mere **calorie intake**.

- To meet the evolving dietary needs of a burgeoning population, [horticulture farming](#) is experiencing a notable upsurge across the nation.

What is Horticulture Farming?

- **Horticulture** is the branch of agriculture concerned with intensively cultured plants directly used by humans for **food, medicinal purposes** and **aesthetic gratification**.
- It is the cultivation, production and sale of **vegetables, fruits, flowers, herbs, ornamental** or **exotic plants**.
- The term Horticulture is derived from the Latin words **hortus (garden)** and **cultūra (cultivation)**.
- **L.H. Bailey** is considered the **Father of American Horticulture** and **M.H. Marigowda** is considered the **Father of Indian Horticulture**.
- **Classification:**
 - **Pomology:** Planting, harvesting, storing, processing, and marketing of **fruit and nut crops**.
 - **Olericulture:** Producing and marketing **vegetables**.
 - **Arboriculture:** Study, selection and care of individual trees, shrubs or other perennial woody plants.
 - **Ornamental Horticulture:** It has two subparts:
 - **Floriculture:** Production, use and marketing of **floral crops**.
 - **Landscape Horticulture:** Production and marketing of plants used to beautify the outdoor environment.

What is the State of Horticulture Sector in India?

- India is the **2nd largest producer** of **fruits** and **vegetables**.

- The Indian horticulture sector contributes about **33%** to the agriculture **Gross Value Added (GVA)** making a very significant contribution to the Indian economy.
- India is currently producing about **320.48 million tons of horticulture** produce which has surpassed the **food grain production**, that too from much less area (25.66 million Ha. for horticulture against 127.6 M. ha. for food grains).
- Productivity of horticulture crops is much higher compared to productivity of food grains (12.49 tones/ha against 2.23 tones/ha.).
- Productivity of horticulture crops has increased by about **38.5%** between **2004-05 and 2021-22**.
- According to the **Food and Agricultural Organisation (FAO)**, India leads in the production of certain vegetables (ginger and okra) and fruits (banana, mangoes and papaya).
- In terms of export, **India is ranked 14th in vegetables** and **23rd in fruits**, and its share in the **global horticultural market is a mere 1%**.
 - Around **15-20% of the fruits and vegetables in India are wasted** along the supply chain or at consumer level, contributing to **greenhouse gas emissions (GHGs)**.

What are the Challenges Faced by the Horticulture Sector in India?

- **Climate Change Vulnerability:**
 - **Erratic Weather Patterns:** Shifts in temperature, rainfall, and unpredictable weather events pose a significant challenge to horticultural crops, leading to **reduced yields and crop losses**.
 - **Extreme Events:** Increasing frequency and intensity of droughts, floods, and cyclones **disrupt horticultural production** and affect **crop quality**.
- **Water Management Issues:**
 - **Water Scarcity:** Limited access to irrigation water, coupled with **inefficient water management practices**, hampers the growth of horticultural crops, especially in water-stressed regions.
 - **Overexploitation of Water Resources:** Unsustainable groundwater extraction and inefficient irrigation techniques lead to depletion of water resources, exacerbating water scarcity issues.
- **Pests and Diseases:**
 - **Pesticide Resistance:** Increasing resistance of pests and diseases to conventional pesticides necessitates the development and **adoption of integrated pest management (IPM) practices**.
 - **Invasive Species:** Introduction and spread of **invasive pests (e.g. Desert locusts)** and diseases pose a threat to horticultural crops, requiring vigilant monitoring and management strategies.
- **Post-Harvest Losses and Infrastructure Constraints:**
 - **Inadequate Storage Facilities:** Lack of proper storage infrastructure results in post-harvest losses, reducing the shelf life and market value of horticultural produce.
 - **Cold Chain and Transportation Challenges:** Insufficient cold chain facilities and inadequate transportation networks lead to spoilage and wastage of perishable horticultural commodities.

How can the Horticulture Sector be Improved?

- **Adoption of Climate-Smart Practices:**
 - Promote the **adoption of climate-resilient crop varieties** and sustainable farming practices to mitigate the adverse impacts of climate change on horticulture.
 - Invest in research and development of **drought-tolerant and heat-resistant crop** varieties suitable for changing climatic conditions.
- **Efficient Water Management:**
 - Encourage the use of **drip irrigation, rainwater harvesting**, and efficient water-saving technologies to optimise water use efficiency in horticulture.
 - Implement water management strategies such as **water pricing mechanisms** and watershed management initiatives to address water scarcity issues.
- **Integrated Pest and Disease Management:**
 - Promote the adoption of **Integrated Pest and Disease Management (IPM)** practices,

emphasising biological control, cultural practices, and judicious use of pesticides.

- **Strengthen surveillance** and early detection systems to monitor and manage pest and disease outbreaks effectively.
- **Investment in Infrastructure and Value Chain Development:**
 - Upgrade and expand **cold storage facilities**, packhouses, and transportation networks to **reduce post-harvest losses** and improve market access for horticultural farmers.
 - Facilitate **public-private partnerships** and investment in infrastructure development to enhance the efficiency and competitiveness of the horticultural value chain.
- **Capacity Building and Knowledge Transfer:**
 - Provide training and extension services to horticultural farmers on modern farming techniques, good agricultural practices, and market-oriented production.
 - **Foster collaboration between research institutions**, universities, and agricultural extension agencies to disseminate best practices and technological innovations in horticulture.

What are the Government Initiatives to Improve Horticulture?

▪ Mission for Integrated Development of Horticulture (MIDH):

◦ About:

- **MIDH** is a Centrally Sponsored Scheme for the holistic growth of the horticulture sector covering fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa and bamboo.
- **Nodal Ministry:** The Ministry of Agriculture and Farmers Welfare is implementing MIDH (since **2014-15**) under **Green Revolution - Krishonnati Yojana**.
- **Funding Pattern: 60%/40%** contribution of Union and states (except states in **North East and Himalayas**)
 - For **North Eastern States and Himalayan States**, the Union government contributes **90%**.

◦ MIDH Sub-Schemes:

- **National Horticulture Mission (NHM):** It is being implemented by **State Horticulture Missions (SHM)** in selected districts of **18 States and 6 Union Territories**.
- **Horticulture Mission for North East & Himalayan States (HMNEH):** HMNEH is being implemented for the overall development of Horticulture in North East and Himalayan states.
- **Central Institute for Horticulture (CIH):** CIH was established at Medi Zip Hima, Nagaland in 2006-07 for providing technical backstopping through capacity building and training of farmers and Field functionaries in the North Eastern Region.

▪ Horticulture Cluster Development Programme:

◦ About:

- It is a **central sector programme** aimed at growing and developing identified horticulture clusters to make them globally competitive.

- Horticulture cluster is a regional/geographical concentration of targeted horticulture crops.

- **Implementation: By the National Horticulture Board (NHB) of the Ministry of Agriculture and Farmers' Welfare. The ministry has identified 55 horticulture clusters.**

◦ Objectives:

- The CDP aims to improve exports of targeted crops by about 20% and create cluster-specific brands to enhance the competitiveness of cluster crops.
- To address all major issues related to the Indian horticulture sector including pre-production, production, post-harvest management, logistics, marketing and branding.
- To leverage geographical specialisation and promote integrated and market-led

development of horticulture clusters.

- To converge with other initiatives of the Government such as the [Agriculture Infrastructure Fund](#).

Conclusion

- To attain demand-driven production, increased productivity, effective credit and risk management, and improved market connections, there is a necessity to reinforce multi-stakeholder partnerships involving farmers, government, consumers, industry, and academia/research.
- As India strives to emerge as a leading global hub for fruits and vegetables (F&V), the path forward will be characterised by collaborative endeavours and a collective dedication to fostering tangible income and livelihood advancements for the nation's small-scale farmers.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Mains:

Q.1 Assess the role of National Horticulture Mission (NHM) in boosting the production, productivity and income of horticulture farms. How far has it succeeded in increasing the income of farmers? **(2018)**

Q.2 What are the present challenges before crop diversification? How do emerging technologies provide an opportunity for crop diversification? **(2021)**

Q.3 Explain various types of revolutions, took place in Agriculture after Independence in India. How have these revolutions helped in poverty alleviation and food security in India? **(2017)**

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