



Sustaining Rural Livelihoods Through Horticulture

Horticulture greatly contributes to nutrition and food security for a country. Diversification towards horticulture also helps in managing the risk and uncertainty associated with agriculture, thus making the rural areas more economically sustainable. This article explores how horticulture can greatly contribute towards creating rural livelihoods and help rural economies sustain their growth.

*Dr. Chetna Singh

**Prof. Virendra Kumar Paul

Rural areas are known for the quality of life centered around the nature. Prosperity being generally linked to economic prosperity, globally, majority of poor are considered to be living in rural areas. If quality of life is stressed by economic deprivation, then out-migration is inevitable. However, if livelihoods can be sustained, then the rural areas can serve the twin purpose of creating gross environmental wealth as well as inhibiting the increase of resource consumption due to exponential unabated urbanization. Improving sustainable livelihood opportunities for small and marginal farmers and forest communities is the most effective way to enhance incomes through natural resources. In rural India, unemployment and poverty has been a bane for self-sustaining economic development. India is still a country with a rural economy and most of the country's population still lives in rural areas and agriculture

continues to be the mainstay of the rural population. Agriculture alone is, however, becoming increasingly non-rewarding for the rural economy to sustain. Thus, there is a need to create an aspirational and supportive ecosystem for youth toward building an economically productive and sustainable livelihood which notionally emulates a template of an organised sector.

What can be done to reduce unemployment and poverty and improve livelihoods in rural areas is the question that needs to be answered. One of the first requirement of a strategy to reduce rural poverty should be to provide the enabling environment and resources for those in the rural sector who are engaged in the agricultural production and distribution system. Moreover, there is a need to diversify within agriculture to sub-sectors such as horticulture, which are high-value crops, with low gestation period, and can be profitably produced on small and marginal land-holdings.

*Assistant Professor of Regional Planning, School of Planning and Architecture, New Delhi.

** Director, School of Planning and Architecture, New Delhi. Email: vk.paul@spa.ac.in

Trends in horticulture production and trade in India

Horticulture sector encompasses a wide range of crops such as fruit crops, vegetable crops, ornamental crops, spices, medicinal and aromatic crops etc. Horticulture got an impetus after the 1991 reforms, when the markets began to liberalize and small and marginal farmers took note of the business opportunity in cultivating fruits, flowers, vegetables, and spices. Unlike traditional agriculture, which primarily focuses on large-scale crop production, horticulture emphasizes the profitable cultivation of high-value crops in smaller-scale settings. Moreover, the productivity of horticulture crops is much higher compared to productivity of food grains.

Horticulture greatly contributes to nutrition and food security for a country. Diversification towards horticulture also helps in managing the risk and uncertainty associated with agriculture, thus making the rural areas more economically sustainable. Horticulture has been recognized as an important contributor in multiplying the income of farmers as well as playing a key role in ensuring essential nutritional security. According to some estimates, it constitutes 18% of the area under agriculture and contributes about 33% of the gross value to the agricultural GDP. Beyond the domestic market, horticulture also has great export potential, and in 2023 it was worth more than Rs. 4 lakh crores.

Potential of Horticulture in Rural Economy

Horticulture based rural tourism is an emerging area which can contribute greatly to sustainable economic development. This is more relevant for the Himalayan states and ecologically vulnerable geographical settings.

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Horticulture is socially sustainable too, as it gives more incomes in the hands of small and marginal farmers, who are subsistence farmers and majority of them grow fruits and vegetables and meet the demand of urban areas. Thus, developing the horticulture sector would contribute greatly to the country's and the rural area's development resulting in increased livelihood opportunities and income and reduced out migration to urban areas.

Of late, India has been performing very well in horticulture production. The value of horticulture crops is steadily increasing over the last several years. The total horticulture production has surpassed the total foodgrain production for the year 2022-23. At present, India is the second largest producer of vegetables and fruits in the world after China. It ranks first in



the production of a number of horticulture crops like banana, lime, lemon, papaya and okra. India's advantage lies in being a low-cost producer of fruits and vegetables because of a combination of factors such as favourable and diverse agro-climatic conditions, availability of cheap and surplus labour, and low input costs.

The productivity of horticulture has increased significantly over the last two decades, leading to a sharp increase in production and area. The production of horticulture crops has thus outpaced the production of food grain since 2012-2013. Vegetables constitute the highest proportion of horticulture crops. The percentage distribution of total horticulture crops in the country remains highest for vegetables followed by fruits and plantation crops over the last ten years.

The data of state-wise production of horticulture crops presents a promising picture as shown in Figure 1. Accordingly, Uttar Pradesh holds the first position with a total production of 462 lakh tonnes followed by Madhya Pradesh (373 lakh tonnes) and West Bengal (355 lakh tonnes). These states have a large share of vegetable production. However, in spite of having a favourable



climatic condition, Himalayan states are lagging behind. There is a huge scope for rural livelihoods to prosper in these northern states to diversify into various kinds of high value horticulture crops such as medicinal plants, plantations, ornamental and aromatic crops.

Challenges for Livelihood Creation in the Horticulture Sector

Despite the fact that India's horticulture sector is growing, the country's share in global trade remains insignificant, accounting for around 1% of the global trade in vegetables and fruits. Export growth of the horticulture sector is being constrained by production and productivity issues, storage and marketing challenges, inadequate transport infrastructure, quality issues and disjointed supply chains.

The horticulture sector faces several challenges which need to be resolved. Some of the challenges that the sector faces are as follows:

- Insufficient Post-harvest Infrastructure** – Because of the gap between production and supply, perishable nature of horticulture crops and seasonality, having a good network of warehouses and cold storage infrastructure is pertinent for better value realization of horticulture crops. In its absence there is a large scale wastage. Post-harvest infrastructure is still insufficient in case of India and varies widely over the different states. The central government has facilitated creation of a Warehouse Infrastructure Fund in NABARD. Other than the



Source: Adapted by Authors based on Horticulture Statistics at a Glance, 2022
 Figure 1: State-wise Percentage of Production and Total Production of Horticulture Crops, 2021-22



government agencies, this fund is also available for Farmers' Producers' Organizations (FPOs), Federations of Farmers' Collectives, corporates, cooperatives, APMCs, SPVs set up under PPP mode, etc. to support creation of infrastructure for storage of agricultural commodities. However, the states which have the highest production of horticulture crops have less storage capacity created as compared to states with more production of cereals and other non-horticulture crops. Many of the hilly states have huge potential in the horticulture sector but lack post-harvest infrastructure.

- **Insufficient access to good quality seeds and reliable irrigation facility and poor soil management-** As the majority of farmers in the horticulture sector are small and marginal landowners, the access to good quality seeds and irrigation facilities is a challenge.
- **Limited availability of farm insurance and farm mechanisation, combined with lack of access to institutional credit** for small and marginal farmers, results in lower investment in the sector.
- **Small and marginal landholdings-** This results in low crop rotation potential leading to reduced yields and decreased soil fertility overtime. This impacts production and yield of horticulture crops.



- **Lack of effective research and extension in light of climate change scenario-** Climate change has impacted the entire primary/agriculture sector, and horticulture is no different. With an increase in extreme weather events and shift in seasons, more adaptive measures through focussed government extension programmes have to be initiated in all the states. This again becomes more relevant for the Himalayan states.
- **Meeting the consumption demand -** With increasing urbanization, purchasing power and population there is going to be an increase in demand for horticulture crops of all kinds to meet the consumption and nutritional requirements. Meeting the increased consumption demand its going to be a challenge given the limited and declining nature of land under cultivation.
- **Non-availability of timely and robust information-** This needs to be ensured to improve the marketing of horticulture crops and remove supply chain bottlenecks. This also hampers market intelligence of farmers which keeps them devoid of cashing in on export opportunities.
- **Lack of quality control at post-harvest stage;**
- **Insufficient processing facilities** make the horticultural produce highly perishable commodities resulting in high wastage.
- **High price fluctuations-** It is a daunting challenge for small and marginal farmers to cope with the high price fluctuations especially when the supply exceeds the demand in the market. These challenges result in fragmented backward and forward linkages and inefficient supply chain management for the horticulture sector.

Role of State in Supporting the Horticulture Sector

Government of India aptly recognized the potential of the sector and has thus initiated several programmes and schemes to effectively deal with these challenges.



The National Horticulture Board implements several programmes as a sub-scheme of Mission for Integrated Development of Horticulture (MIDH). These schemes lay focus on most of the challenges being faced by the horticulture sector. Mission for Integrated Development of Horticulture is a Centrally Sponsored Scheme, launched on 1st April 2014. It covers fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa and bamboo. While Government of India contributes 60 per cent of the total outlay for developmental programmes in all the states except the states in North East and Himalayas for which 90 per cent contribution is from Central Government. In case of Union Territories 100 per cent fund is contributed by the central government. There are five sub-missions/Boards under the mission. These are:

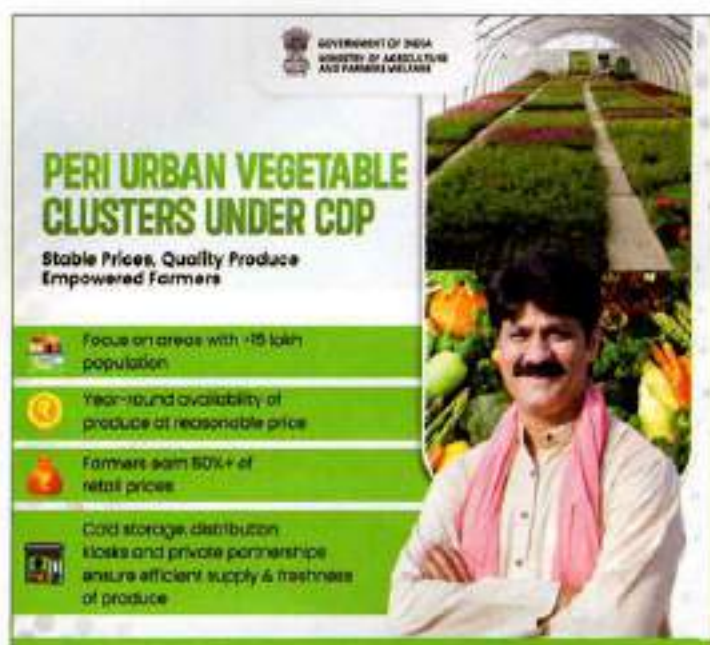
- **National Horticulture Mission (NHM)** – Under this mission, there are schemes pertaining to promotion of Commercial Horticulture, developing cold storage facilities, Technology Development Transfer Scheme, Market Information Service Scheme for Horticulture in addition to several training programmes.



- **Horticulture Mission for North East and Himalayan States (HMNEH)**
- **National Horticulture Board (NHB)** - The Ministry of Agriculture and Farmers Welfare has launched a new programme for Horticulture Cluster Development to enhance the global competitiveness of the Indian horticulture sector. The NHB has been designated as the Nodal Agency for implementation of Cluster Development Programme as a component of Central Sector Scheme of NHB. The Cluster Development Programme (CDP) leverages the geographical specialisation of horticulture clusters and promotes integrated and market-led development of preproduction, production, post-harvest, logistics, branding, and marketing activities. Integrated Cold Chain Availability Platform (ICAP) has also been created by the ministry which is being maintained by NHB.
- **Coconut Development Board (CDB)**
- **Central Institute for Horticulture (CIH)** – It works in the domain of marketing and value chain development, awareness programme on marketing

Objectives

- Encouragement to small & marginal farmers
- Increase in horticulture crop production
- Support to increase the farmers' income
- Improve nutritional security
- Strengthening position as a leading global exporter of horticulture products



and value addition, Entrepreneurship Development Programme cum Skill Development Training.

Launch of National Horticulture Mission has spurred the production and productivity of horticultural crops over the last decade. Government of India has also facilitated large scale disbursement of loans for construction of warehouses, cold storage and cold chain infrastructure through the Warehouse Infrastructure Fund (WIF) created under NABARD. Government of India has also established several Centres of Excellence for Fruits and Vegetables for promotion of research and development in the field of horticulture.

Way Forward

The government has taken note of the economic potential of the horticulture sector and how well it can contribute towards creating better livelihoods in the rural areas, thus curtailing rural to urban migrations. However, more needs to be done to effectively manage the supply chain and ensure more re-investment in the horticulture sector. Moreover, the enormous global trade potential yet remains untapped. To start with, it is required that a national level comprehensive horticulture policy be developed which mandates the initiatives to be taken by the respective state governments and the standards and qualities to be maintained. Only Himachal Pradesh has a Draft Himachal Pradesh Horticulture Policy 2022. The state also has a capacity building programme called "Kshamta se Samruddhi" for horticulture farmers. A bottom-up approach in developing a policy framework is required whereby, district, state and national level guidelines can be worked out. This is more so required

because there are regional variations in soil, climate elevation, skills, infrastructure, etc. which need to be considered for optimally exploring the potential of diverse regions. This would facilitate the increase in production and yield of horticulture crops, thereby increasing the income and surplus earnings which can be reaped back by way of developing cooperatives and Self-Help Groups (SHGs). This would also eliminate the intermediaries and lead to seamless integration of the backward and forward linkages, as shown in Figure 2. Further, industry support and involvement of the private sector has to be enhanced. For this certain incentives and PPP models can be developed so that integrated supply chain management can be worked out on the lines of contract farming. Forward linkage of the horticulture sector to the agro-processing industries and MSME would go a long way in generating greater profits and investable surpluses in the rural economy.

There is a need for special emphasis to be laid on quality of products at each stage of backward and forward linkage. It is important to empower and build the capacity of farmers and producers' associations, either in form of cooperatives, which strengthen backward and forward linkages and also formalise the currently unorganised agriculture sector; or in the form of SHGs, which can be supported initially and then can be transformed into self-sustaining enterprises. In the process, promotion of women led enterprises and youth led commercial activities in horticulture can be given preference. Mechanism for easy and timely access to credit for farmers, SHGs and cooperatives should also be worked out for the growth of the sector.

It is also required that use of modern tools such as GIS, AI and IoT be used for database creation and efficient management of supply chain in the horticulture sector. Greater awareness of government schemes, programmes and missions of horticulture in rural areas is also essential.

As far as regional strategies are concerned, the Himalayan states hold the key for harnessing the optimum potential of the horticulture sector. These states are dealing with several grave challenges of poverty, unemployment, backwardness, insufficient infrastructure and amenities and thus need more sustainable economic options in the long-run.

It is also necessary that the rural settlements are amenitized with supportive infrastructure such as

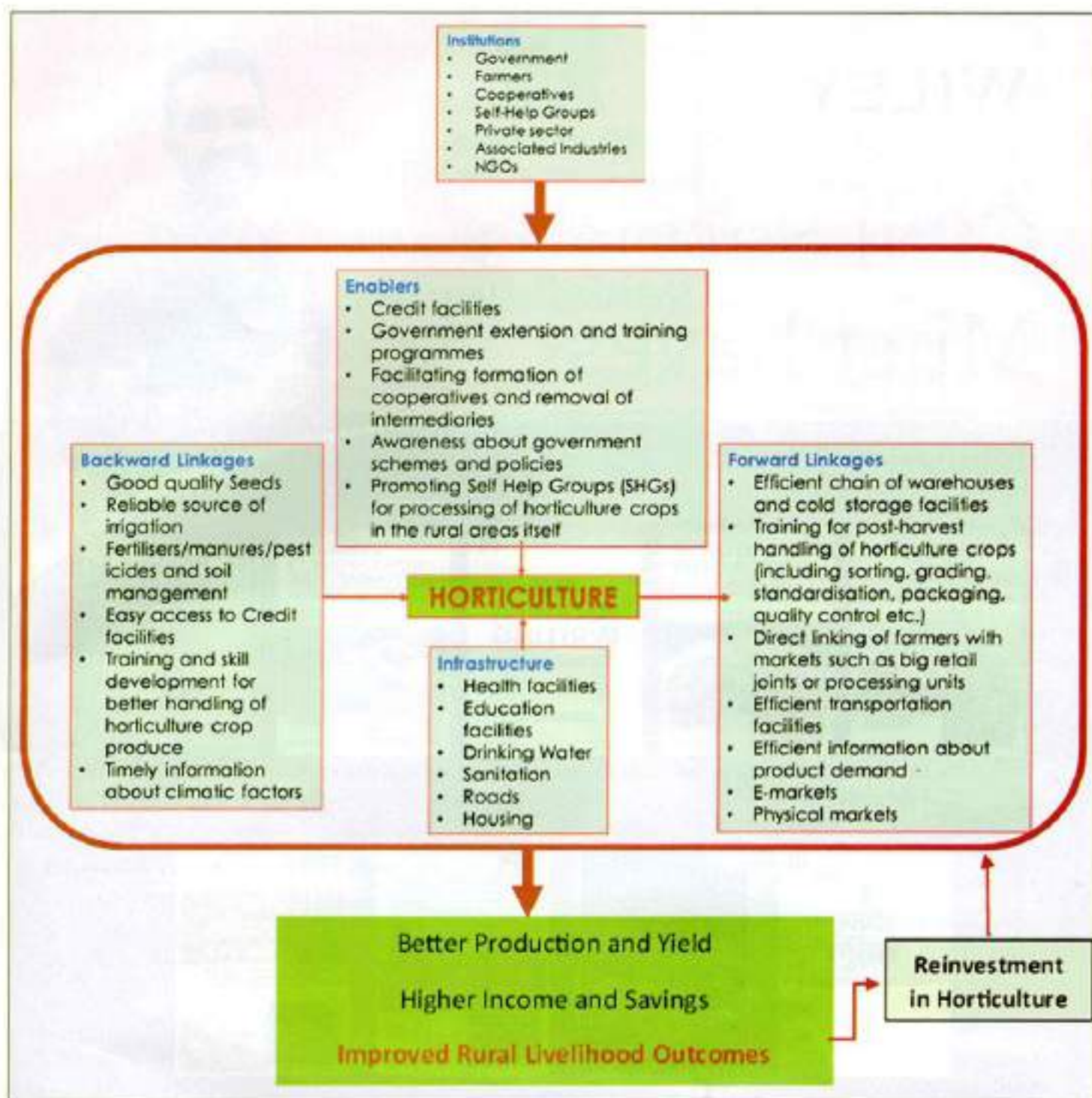


Figure 2: Interventions for Improved Rural Livelihood Outcomes

hygiene, safety, micro processing units for horticulture produce wherein the role of Planners is critical as they also need to shift their focus from routine Urban Planning. 'Nature-Centric Rural Contextual Planning' is the need of the hour with focus on creating an entire eco-system of for rural livelihoods and the enabling infrastructure. Thus, a paradigm shift in Planning approach must consider regional influences to bolster entire living structure in rural areas where 'Quality of Life', livelihoods lead to emergence of New India, shedding poverty tag of the past.

Prime Minister, Shri Narendra Modi released 109 varieties of field and horticulture crops in August 2024, which is a clear demonstration of proactive scientific interventions of the Central Government to strengthen horticulture with the underlying emphasis to create strong base for rural livelihoods.

With such interventions horticulture is bound to be promoted as a high value sub-sector of agriculture and can greatly contribute to high income and employment in the rural areas leading to the realisation of PM Modi's vision of "Gaon Badhe to Desh Badhe". □