

Horticulture Promotion in India: Conceptual Exposition

1 Rohit Kumar, Research Scholar (Commerce)

**University Dept. of Commerce and Business Administration
L.N.Mithila University, Darbhanga**

**2 Dr.A.K Mishra, Associate Professor,
M.L.S.M College, L.N.M.U, Darbhanga**

Abstract

Horticulture is a sunrise sector and a industry of plant cultivation. This sector work and conduct research in the disciplines of plant propagation and cultivation, crop production, genetic engineering, plant biochemistry and also plant physiology. It involves fruits, vegetables, flowers, trees and shrubs. Horticulturists work to improve further the crop yield, quality, nutritional value, and environmental disorder. It is the science and art of growing plants (fruits, vegetables, flowers). It includes plant conservation, soil management, landscape and garden design, construction, and maintenance. Opposite to agriculture, horticulture don't include large-scale crop production and animal husbandry. Horticulture deals with production and processing of fruits, flowers vegetables, ornamentals plants, spices, herbs. It involves intensive cultural practices where plants and species are usually given individual attention. Horticulture can be defined as the science which deals with the production utilization and improvement of (fruits, vegetables, ornamental plant spices and condiments, vegetables, ornamental plant spices and condiments, medicinal and aromatics, plantation crops) as well as gardening, protective cultivation and value.

Key words: Agriculture, Fruit, Mango, Rice, Vegetables

Introduction

The diverse agro-climatic conditions and rich diversity in crops and genetic resources enable Bihar to produce a large range of horticulture crops round the year. Horticulture plays a

unique role in the economy of Bihar by improving the income of the farmers. Cultivation of horticulture crops is labour intensive and therefore lot of employment can be generated for the people in the state. Horticulture products form a significant part of total agricultural produce in the Bihar comprising of fruits, vegetables, root, ornamental plants, medicinal and aromatic plants, spices, and plantation crops.

The importance of horticulture can be substantiated by its benefits like high export value, high yield per unit area, high returns per unit area, efficient utilization of wasteland, provision of raw materials for allied industries, better use of undulating lands, and stabilization of women's for allied industries better use of undulating lands and stabilization of women's empowerment by providing employment opportunities through fruit and vegetable processing, floriculture industry, seed production, mushroom cultivation and nursery business. Per capita consumption of fruits and vegetables in Bihar is only around 4gr and 13gr against minimum of about 14gr and 30gr respectively recommended by Indian council of Medical Research and National Institute of Nutrition. Bihar can earn foreign exchange through of several horticulture produces. Horticulture is a science, as well as, an art of production, utilization and improvement of horticultural crops, such as fruits and vegetables, spices and condiments, ornamental, plantation, medicinal and aromatic plants. Horticultural crops require intense care in planting, carrying out intercultural operations, manipulation of growth, harvesting, packaging, marketing, storage and processing. As an important branch of agriculture, horticulture originated thousands of years ago and has developed greatly during the course of human history. Horticulture crops are generally considered to include vegetable and fruits crops as well as floricultural and ornamental plants, which are cultivated for food. For nutritional and medical use and for esthetic enjoyment. The importance of horticulture can be substantiated by its high export value, high yield and returns per unit area. Bihar has a total area of 0.2614 million has area under fruit crops with highest under mango, followed by banana. The average productivity of fruit crops like banana, papaya and pineapple is higher in

Bihar compared to that of Eastern region. On an average, Bihar has 19.284% area of Eastern region under fruit crops. Bihar ranks first among all the Eastern states so far in production of fruits crop were concerned. Of the total fruit production, Bihar contributes 25.162%.

The main horticulture crops of Bihar are mango, guava, bananan, bael, jackfruit, cole crop, onion, potato, parwal, chillies, marigold etc. however, area under fruit crops in this region is low. Bringing more area under high density planting will help in increasing the production of fruit crops in the region. The region is known for distress sale of fruits like banana in Vaishali district, bael in Gaya, Patna and Lakhisarai district, mango in Patna, Munger and Jamui district, potato and Cole crops in Nalanda and Nawada district. Hence, setting up of post-harvest handling facilities for these commodities in the respective region will help in minimizing the post-harvest loss of the produce and will be highly remunerative, setting up of processing facilities of turmeric in Banka and Patna districts may also be highly remunerative. Promotion of floriculture is in areas around Patna, Lakhisarai district can also provide high dividend. Hajipur region is known for quality production of tropical cauliflower seeds. Intensification of Seed Production of Cole, Onion etc is also be highly remunerative. Setting up of potato seed production units is in areas like Patna, Nalanda and Nawada districts will also be highly profitable. Apart from this cultivation of several spices, condiments and medicinal plants like Awagandha, Sarpagandha, Kalmegh, Vasak, Tinosporaetc can be grown effectively in Jamui region.

Features of Horticulture

In India Horticulture sector has become one of the key drivers of growth as this sector is more profitable than the agricultural sector. Further this sector provides employment opportunities in primary, secondary and tertiary sectors of the country. Horticulture crops such as fruits are more affected to change in weather conditions and the vegetables provides more income of small and marginal producers. In Horticulture the water utilization is very low

which minimizes risk of crop failure. Multiple crops are planted simultaneously to get more yield by the use the minimum quantity of fertilizers. Sector enables the population to take a balanced diet, for health life. This horticulture sector became a key driver for economic growth in most of the states in India where Indian Council of Agricultural Research is playing a proper role.

Scope of Horticulture

In yester years, Horticulture is such field that has been fastly emerging in the country. Humans of the country are becoming more aware of the positive impact of commercialization that has of great impacting on the environment. Further the Horticulture is the branch of Agricultural that can simply be defined as the art, science technology, business and education, of crops and plants. Today, horticulture is one of the fastest-growing industry in agriculture and the demand for horticulture products are increasing day by day. Corona (COVID-19) has changed the fate and outlook of people towards nature business and future. Further they want to contribute in creating a pure, green, and pollution free environment for themselves and all living being at large. Our country India is next to China in population and production of vegetables and fruits producing 11% of fruits and 15% of vegetable in the total in the total world wide production.

Horticulture Employment in Bihar

The state of Bihar has a total geographical area of about 94.21 lakh hectare, out of which 56.43 lakh hectare is the net cultivated area and gross cultivated area being 80.14 lakh hectare. Horticulture is that part of agriculture related with cultured plants used by man for food, medical purposes and aesthetic values. In other words, it is production and sale of vegetables, fruits, flowers, ornamental plants. Horticulture is that branch of agriculture which deals with the science art, and business of cultivation of plants. Vegetables, flowers, fruits,

shrubs, ornamental trees and landscaping for gardens, nurseries, green house, orchards, plantations and their postharvest management and arrangement. Horticulture is an diversified field with unlimited opportunities in a variety of areas which includes conservation of plants, restoration, landscape, design, and also construction. India is next to china in area and production of vegetables and fruits and has been contributing 11 percent of fruits and 15 percent of vegetables of the total global production. The horticulture sector constituted 18% of agriculture GDP and contributes 5% in the national economy.

Horticulture Promotion in India

In India total horticulture production in the year 2022-23 is estimated to be 350 million tonnes, an increase of about 4.8 million tonnes (1.38%) as compared to the year 2021-22. Apart from this Production of fruits, vegetables plantation crops, flowers and honey is expected to enlarge. Horticulture is the science and art that deals with the production, protection, utilization, processing, and marketing of high-value plants, crops including fruits, vegetables, ornamentals (flowers, trees, and shrubs), herbs, and medicinal plants. Further Horticulture has made significant contribution to the food value chain for an ever-growing world population. Its prospects are favorable for a long-term and environment friendly ecosystem. The quality and safety of horticultural produce are a matter of great concern. Regulation of flowering and fruit set together with plant architecture are as important as plant nutrition and protection. Horticultural products were produced in enclosures surrounded by boundary walls in ancient times, which was known as a kitchen garden. With the passes of time the demand for food increased and horticultural production expanded into open fields without borders for commercial purposes.

Horticulture is divided into three key categories: pomology, olericulture, and floriculture. Pomology is the study of fruit plants production, which includes growing,

harvesting, and postharvest practices. Horticultural fruit is an edible, fleshy, or dry section of a plant which develops in tandem with the floral portions. Fruits are grouped into many categories based on their development, like stone, berry, aggregate. Fruit trees are perennials in nature and take up more land than seasonal crops. They also have a positive impact on the environment by reducing air pollution and heat. Olericulture is the branch of horticulture which deals with vegetable cultivation. Vegetables are further classified into sub-groups based on their edible portion, such as leaves. In India horticulture is emerged as the most promising agriculture sector for accelerating the pace of economic development not only by offering proper raw materials to different food processing industries and high profitability due to more production and export earning from foreign exchange. Horticulture is an prime portion and branch of agriculture which deals with the cultivation of fruits. Flower plants and vegetables for food, medicine and many other purposes. In another worlds Horticulture is the science and art of the plant development, production, marketing and use of high-value, intensively cultivated food and ornamental plants. This crops are very much diverse which includes annual and perennial species, fruits and vegetables, decorative indoor plants and ornamental plants. The prime significance of horticulture is gender equality, technological innovation and information access.

Horticulture and women Empowerment

Horticulture is an art of production and improvement of horticulture crops, like fruits and vegetables, ornamental, plantation, medicinal plants. Horticulture plays a significant role in the economy by generating employment, providing material to food processing industries, and greater farm profitability because of higher production and export earnings. Horticulture sector has proper opportunity for women's empowerment income generation and improved quality of living standard.

- Further India can emerged as a largest producer and exporter of Horticulture product if

proper emphasis is given to resource allocation, infrastructure development, technological up gradation better policy framework and Research and development for horticulture sector.

- In India Horticulture sector with strong forward and backward linkages like an organized industry may stimulate and sustain growth of the economy and the nation.

Horticulture plants are an integral part of food, and economic securities in the country. Horticulture crops further explore the importance of native microbial communities which modulate crop growth and health. A very few information is available regarding the composition. Structure and dynamics of horticulture-associated microbial communities and also the functional contribution of cultured and uncultured community members who very directly involve in the acquisition of nutrients, growth promotion, resilience against pathogens, and tolerance against abiotic stress like heat, drought, and salinity.

Horticulture has great opportunity for women's empowerment.

- Access: Women normally face challenges in assessing credit, land, and agro inputs independently.
- Capacity Building: Continuous and regular training and capacity-building programs are essential to increase women's skills in horticulture activities.
- Market Access: Ensuring proper and equitable market access for female farmer's horticulture product is proper for the economic growth
- Advancement of Technology and use of it current horticulture practices in female farmers can promote productivity.

The promotion and development of horticulture in Bihar provides significant

opportunities for female empowerment, income generation, and proper livelihoods.

- Five Sub-Schemes under horticulture mission

1. **National horticulture Mission (NHM)**- This mission is introduced by state Horticulture Mission in few located districts of 19 states and 5 union territories.
2. **Horticulture Mission for North-East and Himalayan Indian States**- This is introduced and implemented by state Horticulture Missions in the North Eastern part and Himalayan States of India.
3. **National Horticulture Board**- This Board has a goal to improve the integrated development of Horticulture sector.
4. **Coconut Development Board**-This Board is set-up in all coconut producing states for increasing productivity and diversification.
5. **Central Institute of Horticulture**-The institute gives focus on adequate institutional support for the development of horticulture in North East region of the country.
6. **Agriculture Infrastructure Fund**-It has been launched in 2022 for creating community farming and integrated post-harvest management.

Statistics of Horticulture (2022)

- The publication of the Ministry of Agriculture and farmers welfare of India.
- Horticulture statistics division and the department of agriculture, cooperation and farmers' welfare has taken various step to develop the database of horticulture products.
- Horticulture production information system (HPIS): It is a on-line information system by which data from the states/districts is reported for maximizing the coverage.

- Co-ordinated programme on Horticulture Assessment and Management using for the development of horticulture.
- The resistant to different biotic and abiotic stresses have promoted in various fruits, vegetables, flowers medicinal plants.
- Advanced techniques for production of disease free planting materials have been developed. Micro propagation techniques have been adopted for most of the fruits, spices and other vegetables plants.
- Proper technology for managing the water and nutrient efficiency through micro irrigation system has been developed for various horticultural plants.
- Good Agriculture Practices (GAP) has been promoted for different plants, mainly medical plants.
- Farm mechanization to promote harvesting and processing efficiency and to minimizing loss of horticulture crops.

Highlights of the 2022-23

1. Total horticulture production in the year 2023-24 estimated to be 396.78 million tonnes, an increase of about 5.26 million tonnes 1.47 percent as compared to the year 2022-23.
2. Production of fruits, vegetables, plantation crops, flowers and honey is expected to increase.
3. Fruit production is estimated to be 124.52 million tonnes in the year 2023-24 as compared to 109.37 million tonnes in the year 2022-23.

4. The production of vegetables is estimated to be 218.87 million tonnes in the year 2023-24 compared to 214.27 million tonnes in the year 2022-23.
5. Production of plantation crops is estimated to increase from 17.42 million tonnes in 2022-23 to 17.92 million tonnes in 2023-24, which is an increase of about 2.07 percent.
6. Potato production is expected to be 65.45 million tonnes, compared to 61.27 million tonnes in the year 2022-23.

Conclusion

Horticulture in Bihar is significant agricultural sector contributing its best to the state's economy. The state diverse agro-climatic conditions support the cultivation of a wide variety of fruits, vegetables, flowers, and medicinal plants. Few key importance regarding horticulture in Bihar. In the year 2022-2023 there has been increase of near about 4.75 million tones (1.38 percent) of horticulture products as compared to 2021-22. Further the production of fruits, vegetables, flowers, plantation crops is expected to increase in the year in India. At the outset it is significant to know that our the last six yester decades, horticulture has become fastly reliant on science and technology to manage and maintain profitable production. Cultivators are said to be important citizens on this earth because they feed the world. They are the most independent, vigorous and virtuous individuals. Bihar is an agricultural state. Horticulture is the fastest growing sector in Bihar and contributes immensely in poverty eradication and nutritional security. This sector has immense scope to increase the income and employment for the population and helps in sustaining large number of industries. Horticultural crops play a unique role in the economy of Bihar by improving the income of the farmers. Cultivation of these crops is labour intensive and lot of employment may be generated for the rural people.

Horticultural sector can contribute immensely to strengthen the financial condition of Bihar. This may be core sector of Bihar agriculture and about 1.9 lakh families may engaged in

it. The major factor towards horticulture is the high income generating potential rather than food security. Livestock was an integral component of the diversification process. Economic reforms and policies of 1990s further increased the speed of diversification in favour of horticulture crops. This is an account of the increased domestic demand from high value food commodities as well as for export markets. The diversification process that is seen within agriculture sector also got transmitted to the horticultural sector.

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