



ANALYSIS REPORT ON HORTICULTURE & FORESTRY

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Being the land of 20 distinct agro-climatic regions due to varying climate and weather conditions, India ranked the second largest in the world for the availability of agricultural land. The land is thus used as arable land for different purposes and horticulture and forestry are among the one shaving a decent share to cater to the domestic as well as export demands of the products like spices, jute, oilseeds, medicinal herbs, etc. The climate and land conditions had made India one of the largest producers in many of the horticulture and forestry products such as spices, lac-based products, etc but the national yield of the majority of these crops in the country is still far less than the global average. Thus, in the fiscal year, 2021-22 while expecting a growth trend in consumer spending, the government has raised the targets for post-pandemic production levels in this sector also.

Horticulture and forestry are two associated industries, both of which lie under the umbrella of the agriculture sector as they both deals with the plants and their management, and their related supply chains. The horticulture industry looks into the cultivation and supply linkages of perishable agricultural products like fruits, flowers, vegetables, etc. On the other side, forestry is concerned with managing, protecting, and utilizing the forest resources and deals with plantations on forest lands. Thus, forestry deals with the sustainable agrarian system such as silviculture and harvest of forest produce such as fuel wood, bamboo cultivation, etc for commercial purposes.

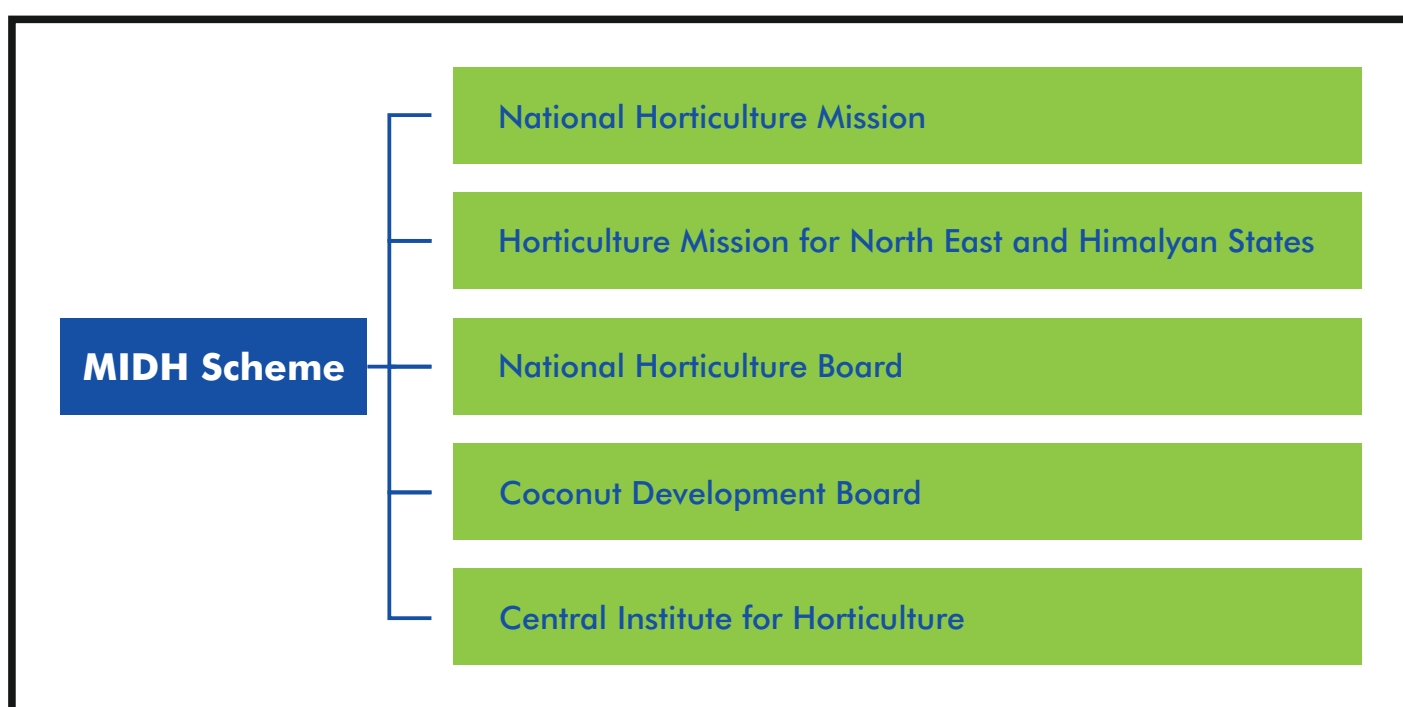
Over time, horticulture is attracting major importance in the agriculture sector as the falling farm income and shrinking farm sizes due to the growing population, puts pressure on diversification in the sector. Thus, the recent trends show that the horticulture production in India is showing an upward trend and surpassed the total food grain production in the last few years. Besides this, the sustainable use of forests produces to counter the rapidly changing climate conditions help in countering global warming.

These new trends are well strengthening the overall supply chain linkages of the sector right from production to distribution, processing, and transportation including the value addition for the consumers and global markets. As the intensively cultured plants and forests produced are used by humans for different purposes such as food, medicines, aesthetic requirements, etc, their demand in domestic as well as global markets is on the rise. But the continuous deforestation and rise in population have stressed the Indian forest to a great extent. This is now causing several ecological consequences in terms of reduction in groundwater retention, change in the pattern of monsoon rains along with the growth of this sector which needs to be addressed immediately.



The horticulture and forestry industry in India is governed by the Ministry of Agriculture and Farmers Welfare, Government of India. The ministry launched the Mission for Integrated Development of Horticulture (MIDH) in 2014 and the Submission on Agroforestry (SMAF) in 2016 to overall enhance the tree plantation in India and help in strengthening its hold on the global horticulture and forestry industries along with establishing nutritional security in the country.

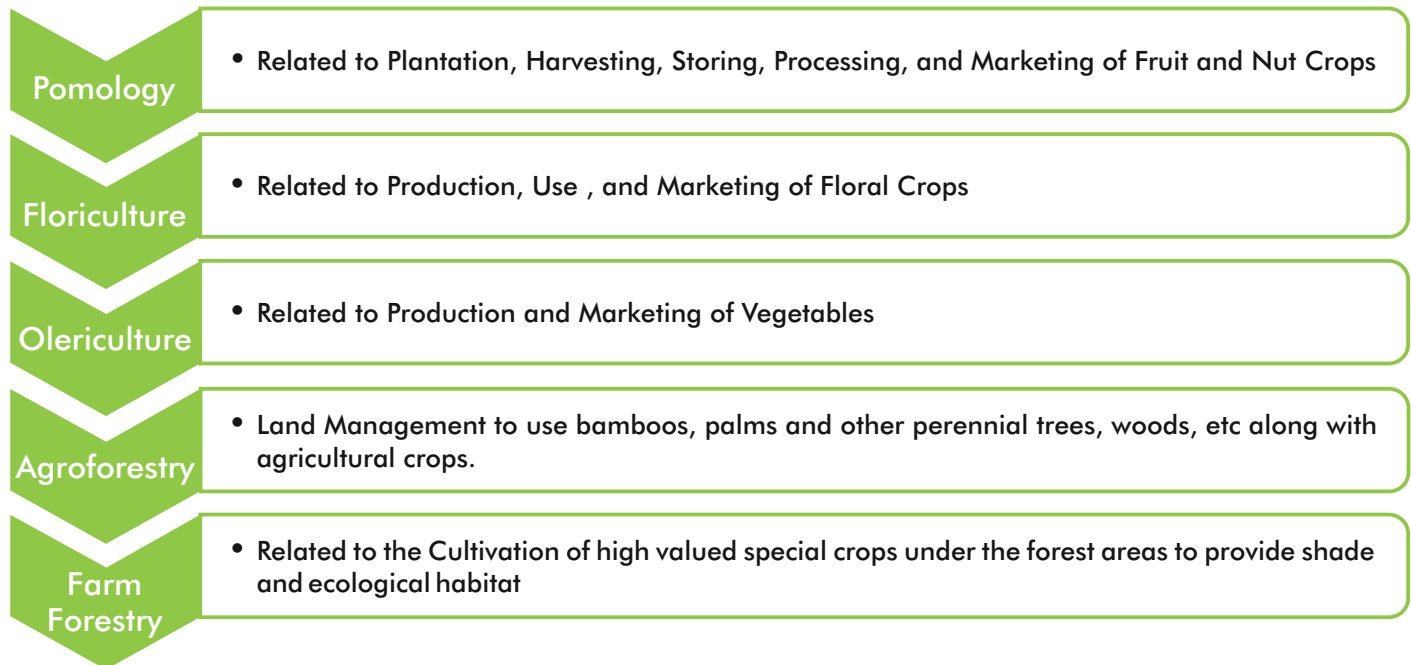
The MIDH scheme was designed for the overall enhancement and up-gradation of the horticulture industry. Thus, it is broadly comprised of five components with the view to improve the coordination and adaption of sustainable practices in the production and processing of such products as fruits, vegetables, etc:



So the scheme is well assisting in the research and development of the sector. Along with this for natural resource management in the area of forestry, the Indian Council of Agricultural Research under the Ministry of Agriculture and Farmers welfare works to provide security in terms of food, nutrition, ecology, and livelihoods through their various research institutes, all India level research projects, etc.



There are various categories in horticulture and forestry as per their specification and land use which can affect the overall production and grow the sector holistically. Some of these distinct but major types of classification used in the industry are as under:



Thus, the overall governance along with the active participation of the Indian think tank body NITI Aayog, the industry is taking shape as a pivot for the key growth driver of the Indian agriculture industry along with the generation of numerous employment and business opportunities for stakeholders.



The horticulture sector is possessing the status of primary sector activity and has seen the continuous development and policy shift from the government. As per the government records from 2019 to advance estimates of 2022, the data on the area and production of horticulture crops in India are as under:

Total Horticulture	2019-20 (Final)	2020-21 (Final)	2021-22 (1st Adv. Est.)
Area (in Million Ha)	26.48	27.48	27.56
Production (in Million Tonne)	320.47	334.60	333.25

Source: <https://pib.gov.in/PressReleaseDetail.aspx?PRID=1810624>

Due to the sector, friendly government policies, continuous research, and technology adaptation the horticulture production in India in 2020-21 have seen a 3.3% increase from last year. The sector has recorded around 331 million tonnes of production out of which the majority was shared from vegetables (60%) and fruits (31%) in comparison to the total horticulture production of the country.

The MIDH under the Krishonnati scheme is also contributing to the growth trends by making continuous availability of quality inputs such as seeds, planting materials, etc, and post-harvest supply chain linkages. This results in a reduction in losses of perishable products and quick access to markets. In the past few years, the expenditure on horticulture missions has been lower than the budget allocation but the shrinking shortfall expenditure is showing the growth opportunities coming forward for the industry.

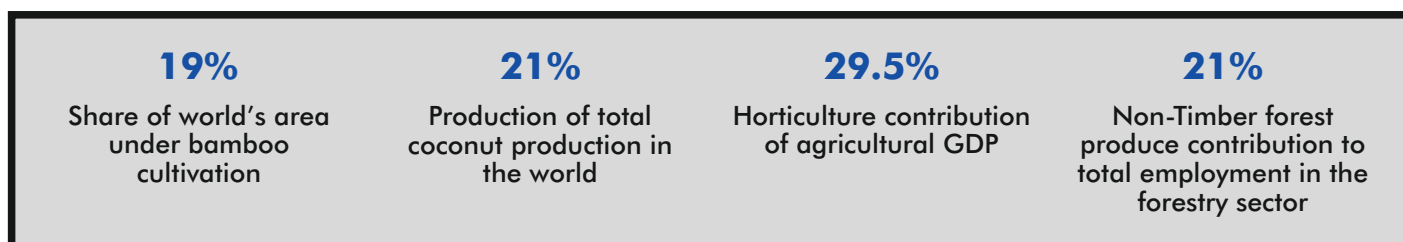
Year	Allocation*	Expenditure	% shortfall
2016-2017	1,493	1,620	8%
2017-2018	2,027	2,320	13%
2018-2019	1,997	2,536	21%
2019-2020	1,331	2,225	40%
2020-2021	1,423	2,300	38%
2021-2022	1,594*	2,385	33%

Note: "Budget estimate; "Revised estimate used as expenditure.

Source: <https://prindia.org/budgets/parliament/demand-for-grants-2022-23-analysis-agriculture-and-farmers%E2%80%99-welfare>

The growth of the sector is primarily dependent on a clear policy framework, capacity building, regional specifications-based research, post-harvest management assistance and availability of cold chain facilities, continuous monitoring, database creation, and analysis of trends. All these

efforts on the ground can help to grow its horticulture and forest sector beyond the challenges which were evident during the pandemic and have still shown the following encouraging growth trends:

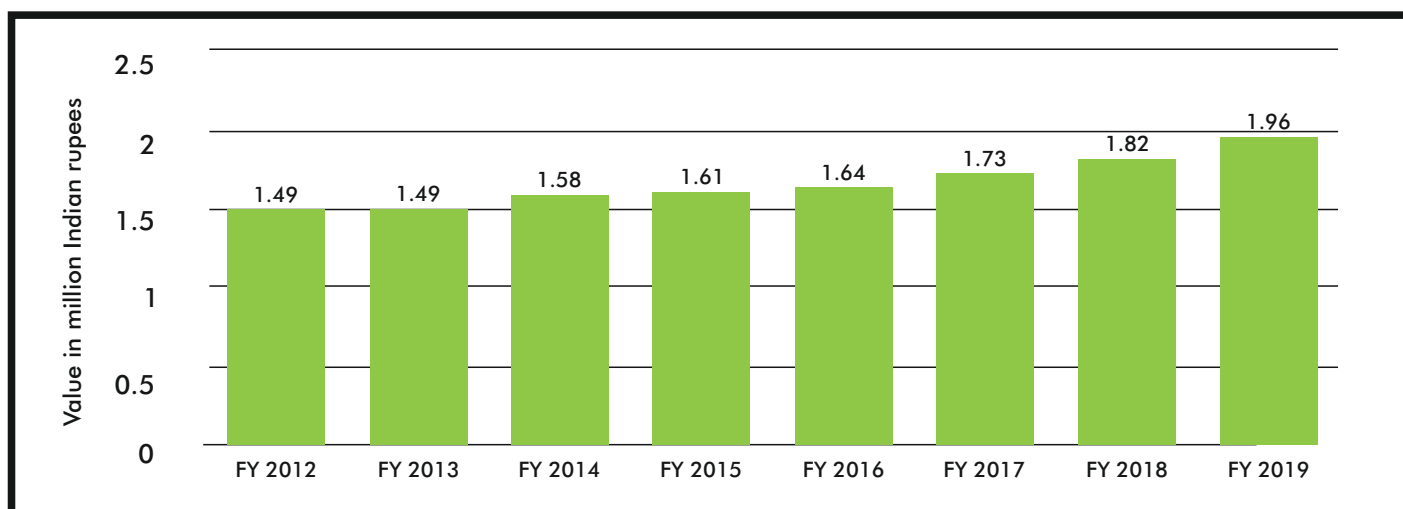


Source: <https://www.investindia.gov.in/sector/agriculture-forestry>

Besides this, India's around 64 million hectare forest cover needs extra attention as this is among one of the lowest forest land covers in the world even after varying weather and climate conditions across the country. The major cause of concern is fire on these forest lands and continuous deforestation to cater to the growing needs of the rising population of the country.

India's total forest land roughly contributes to around 1.7% of total GDP and serves through the production of different types of woods and non-wood products like pine resin, bamboo cultivation, etc. The non-wood products such as essential oils, fragrances and aroma chemicals, and medicinal plants from Indian forests have a lot of demand on global markets and thus need to be addressed systematically.

Gross value added (GVA) from the Indian forestry and Log Industry (Between 2012-19)

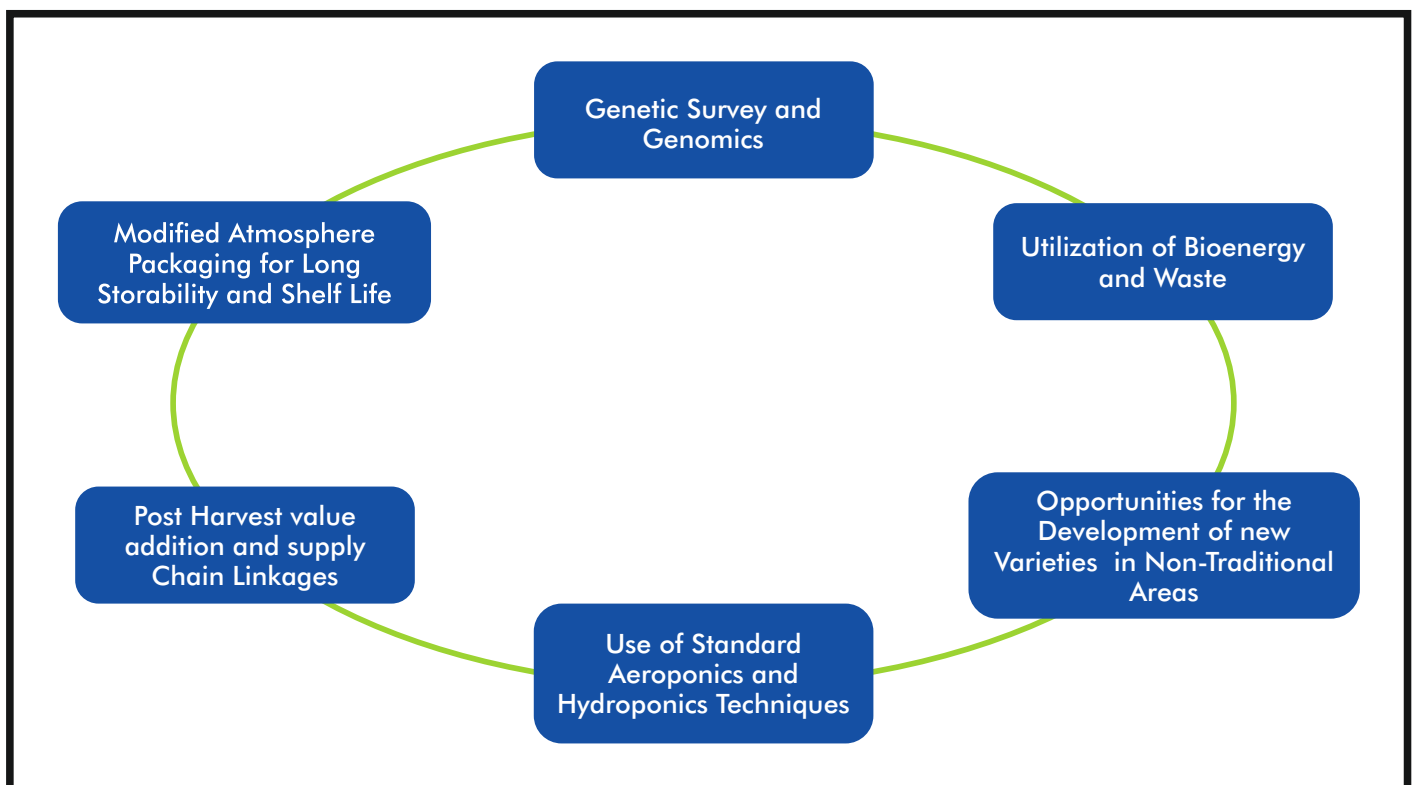


Source: <https://www.statista.com/statistics/911982/india-economic-contribution-of-forestry-and-logging-industry/>

The Indian horticulture is also showing great results in the export, especially for the fruits (more than Rs 56 billion in 2021) such as mango to the South Asian countries. The export of fresh fruits, vegetables, fruit seeds, floriculture, etc are effectively contributing to the growth of the sector and thus motivates farmers for increasing their production and using high yield inputs.

The horticulture industry in India shows varying growth trends in different regions based on the knowledge of the farmers, credit facilities, use of technology, adequate input supplies, etc. To create a uniform development scenario, the government is facilitating the cluster development-based approach in different regions of the country by providing direct link to industries for establishing better value addition, storage, and transportation facilities.

The horticulture and forestry sector in India has numerous untapped potential to add to the economic development of the country and needs strong policy interventions in the following areas to implement the changes:



Thus, these opportunities can strengthen the sector in years to come, by addressing the various associated challenges at different levels. In this regard, the “One District, One Product” mission of the Government of India is set to provide enormous growth prospects for such products to grow beyond their region and show the authenticity and competitiveness of the global landscape.



As per the government statistics, the Gross Value Added (GVA) contribution of the agriculture sector including horticulture and forestry was estimated to reach the mark of around 20 lakh crore in the fiscal year 2020-21 despite the global pandemic. But the holistic growth path also needs to address the concerns related to the areas like knowledge of farmers, better market linkages, etc. The major challenges faced by this sector to grow exponentially in a country like India are as under:



The above challenges also serve various new opportunities for different stakeholders including Farmer Producing Organizations, Self Help Groups, industry, etc. Thus, through strong policy intervention and its effective implementation, a major change in the scenario is possible. As India holds a large share in horticulture crop production like papaya, mango, and banana including herbs and spices at the global level, a little attention and big investments in the sector can change the fate of the industry. Hence increasing the contribution of the sector to Indian GDP through a sustainable roadmap while keeping a check on deforestation and climate change is the need of the hour.



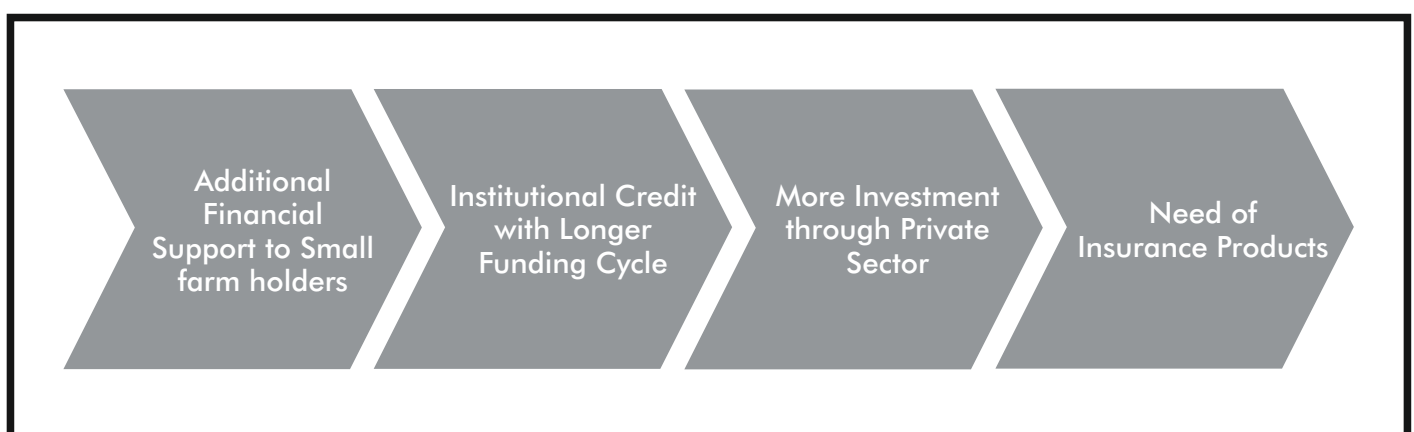
The agriculture sector is always the dominant one contributing to the GDP growth of the country, especially because of the high production of food grains. But in contemporary India, the horticulture sector is also putting its best foot forward and showing tremendous hopes to fulfill the food and nutritional needs of their domestic consumer along with the global buyers.

On this path, in Dubai Expo 2020, India has shown rising opportunities in the Indian organic and horticulture sector and capacity up-gradation in its value chain. This has well shown the power and rich variety of Indian horticulture products to international investors on the global platform.

As per the data of the Department for Promotion of Industry and Internal Trade (DPIIT) between April 2000 to November 2021, the FDI in flow to the Indian food processing industry is more than US\$ 15 billion. The union budget allocation is also seen an upward trend in the last 2 years for the Ministry of Agriculture and Farmers Welfare as Rs 1.32 lakh crore is allocated in the fiscal year 2021-22 and Rs 1.25 lakh crore in the previous fiscal year allocation and helped the growth of the horticulture and forest sector in the country.

Under the Mission for Integrated Development of Horticulture, the government of India shares 60% of the total project outlay in all the states except for the Northeast and Himalayas where the share contribution reaches 90%. The model works much like the Sub Mission on Agroforestry except the Union territories under the agroforestry mission receive the Union Government contribution of 100% of the project development cost. This funding support thus helps every corner of India to play its role in the development of the horticulture and forestry sector and find its true economic potential while nurturing the Indian forests across the length and breadth.

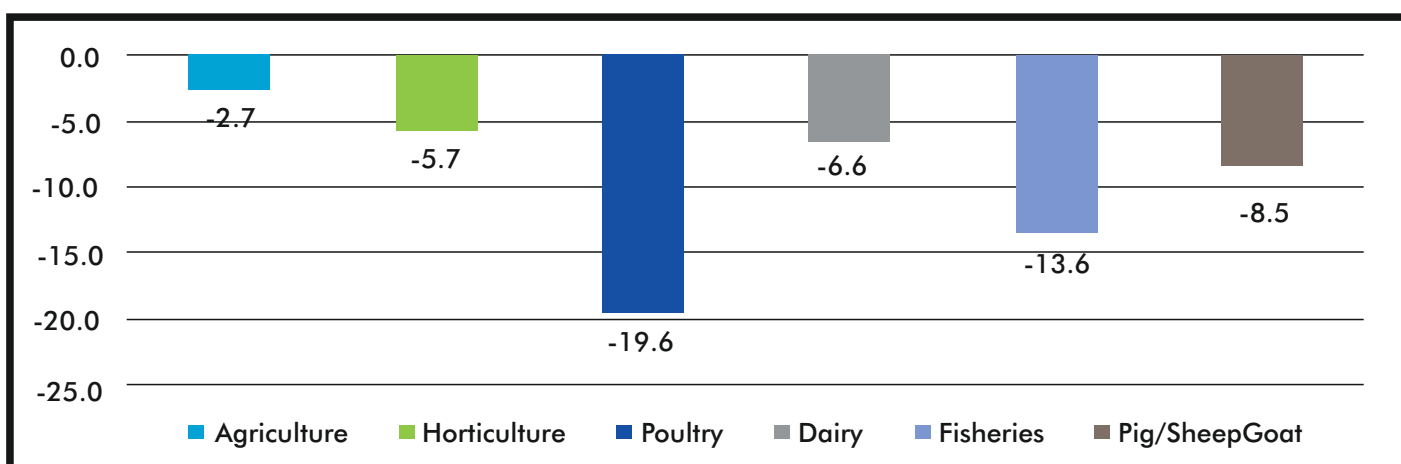
Still, the growth of the sector is dependent on the following investment and financial framework to promote and make it popular among the farmer community:



Thus, it is evident that the sector needs specialized and customized financial planning and support mechanisms to grow and contribute to earning the foreign reserves for the country. In the areas like forestry, the private sector contribution through the Corporate Social responsibility (CSR) fund can make a significant change in the scenario and find its place in the global markets too.

The horticulture sector which primarily deals in perishable crops like fruits, vegetables, etc has seen a significant drop during the strict lockdown because of the deadly Covid 19 pandemic. When the global supply chain was on standstill, India experienced a sharp decrease in the production level of agricultural products and has also seen a 7.6% fall in the prices of such products. During the pandemic, the horticulture sector of India recorded a 5.7% fall in the production levels and thus significantly hampered the growth of the sector:

% Decrease in the Production Levels of Agriculture & Allied Sectors



Source: <https://www.nabard.org/auth/writereaddata/tender/1211203145Impact%20Assessment%20of%20COVID.pdf>

Due to strict restrictions on the movements of people and goods, the horticulture sector has seen a sharp low as the pandemic hit the food supply chain. The sector has booked losses in the revenue generated from flowers and ornamental plants. This scenario has also impacted the forestry sector beyond expectation as it affected the people's hobbies related to horticulture production and plantation.

But this unprecedented medical emergency has made substantial changes in the food chain and increased the demand for Indian horticulture and forest products mainly used for medicinal purposes along with various herbs on the global market. In this regard, the "One District, One Product" mission of the Government of India is making the best out of this trend to showcase India's true potential in the sector.

During this tough time, it was experienced that, India has the potential to take a larger share as a producer and exporter in the global horticulture and forestry market through sufficient interventions in the field of research and Development (R&D), technological upgradation, optimal resource allocation, and effective policy frame works and able to provide secure forward and backward linkages to the industry.



The Government of India in the last 7 years has understood the potential of the Indian horticulture and Forestry sector well. In this line, the Agriculture export policy, 2018 has aim to help in increasing the contribution of India's agriculture sector export to Rs 4,19,340 crore by the fiscal year 2022 which also includes the export of horticulture and forest products. It is further expected to reach the level of Rs 1 lakh crore by the fiscal year 2024.



The Union Budget 2022-23 was also coherent to these targets as a fund will be set up through NABARD to provide financial support to startups that are working in the areas of farm production and supply chain including the horticulture sector. The government also made provisions for bringing legislative changes for the promotion of agroforestry in the country. The continuous support from the Union and state governments has emerged sector as one of the tools to bring the following changes in the social and economic canvas of the country:

Export
Promotion

Employment
Generation

Rise in Income
Levels

Poverty
Alleviation

The two major umbrella schemes of the Government of India are working to change the fate of these sectors and helped in writing the new saga of the sustainable growth of the Indian agriculture sector which are :

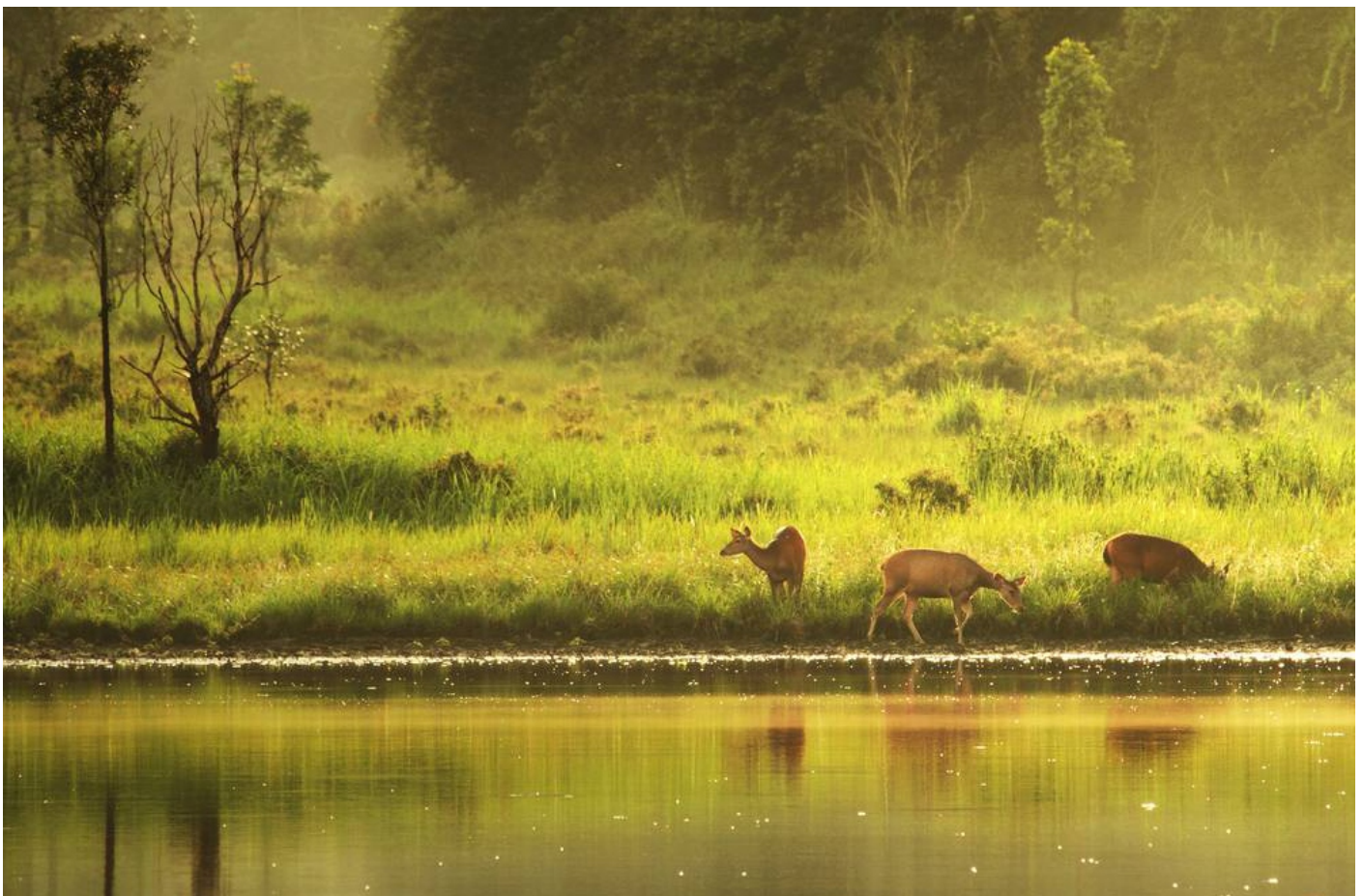
• Mission for Integrated Development of Horticulture (MIDH)

The mission was launched by the Government of India in 2014 to increase the research and technology-based growth in the Indian horticulture sector. This includes the improvement in all its allied activities such as production, post-harvest management, processing, marketing, etc. The mission is specific to the needs of different segments of the horticulture industry and thus also address the generation of employment opportunity along with increasing the nutritional security of the country and rise in farmers' income.

- **Sub Mission on Agroforestry (SMAF)**

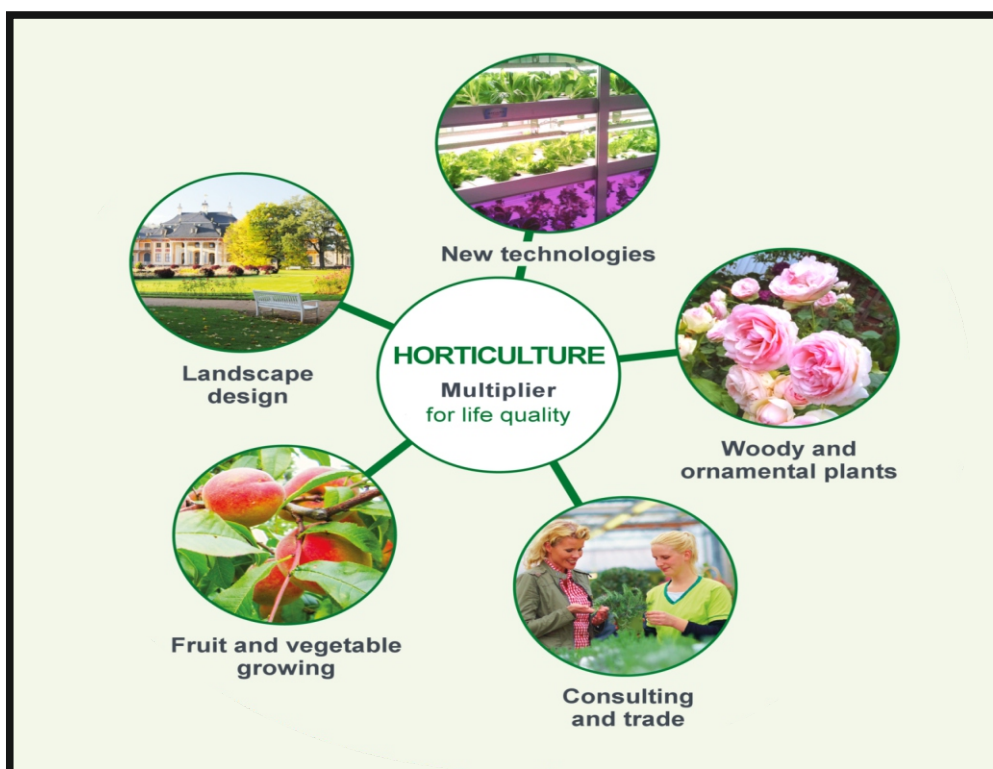
India became the pioneer in adopting the National Agroforestry Policy (NAP) in 2014 and addressed the promotion of employment opportunities, environmental conservation, and farm productivity through this ambitious policy intervention. In 2016, the NAP was merged with the Rashtriya Krishi Vikas Yojna and has formed the SMAF with the tagline of “HarMed par Ped”. The government has transformed agroforestry in the country through this and combined it with the national level effort to increase tree plantation on Indian farmlands along with the regular cropping pattern. The move was designed to make Indian agriculture and farmlands more sustainable, climate-resilient, and adaptive to future requirements.

Thus through these policy interventions government is promoting sustainable farm practices among Indian farmers while enhancing their well-being through additional income support. The research-based technological support for production, processing, and other value addition processes will make the Indian horticulture and forest products competitive in the global market and increase their share in Indian export which will help in setting up positive momentum for a sustainable future for this sector.



Thus it is evident that the horticulture and forestry sector in India has seen a radical policy shift in the past few years which substantially increased the actual production level along with quality enhancement in the horticulture and forest produces. The varying agro-climatic regions in the country are also helping to enhance the productivity of the sector and working in its favour.

Besides this, the active role of research institutions, local markets, export promotion policy, and rapidly evolving e-commerce platforms have helped in the further development by increasing the direct trade of such products. But the commercial forestry in India is still in its nascent stage and needs active hand holding to find its true potential and make the Indian farms climate-resilient and adaptive.



The potential is vast in hardwood, fuel wood production along with the trade of minor forest products like bamboo, gum, lac, medicinal plants, etc but a more comprehensive policy framework will help in making a clear and sustainable path for the growth of Indian forestry sector and contribute for the economic growth of the nation along with the horticulture industry in the years to come.

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